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July 23, 2012

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California Energy Commission

**DOCKETED**  
**11-AFC-2**

TN # 66319

JUL 25 2012

Subject: Preliminary Staff Assessment Comments, Set 2  
Hidden Hills Solar Electric Generating System (11-AFC-2)

Dear Mr. Monasmith:

On behalf of the Applicant (Hidden Hills Solar I, LLC; and Hidden Hills Solar II, LLC) please find attached comments on the Preliminary Staff Assessment (PSA).

The attached comments are being filed electronically. Please call me if you have any questions.

Sincerely,  
CH2M HILL

A handwritten signature in blue ink, reading "John L. Carrier".

John L. Carrier, J.D.  
Program Manager

Encl.

c: POS List  
Project file

**Preliminary Staff Assessment Comments, Set 2**

# **Hidden Hills**

## **Solar Electric Generating System**

(11-AFC-2)



**Application for Certification**  
**Hidden Hills Solar I, LLC; and Hidden Hills Solar II, LLC**

**July 2012**

With Technical Assistance from



**Hidden Hills Solar Electric Generating System (HHSEGS)  
(11-AFC-2)  
PSA Comments, Set 2**

Listed below are the Applicant's comments (Set 2) on the Preliminary Staff Assessment (PSA) for the Hidden Hills Solar Electric Generating System (HHSEGS) project. For ease of reference the comments have been placed in alphabetical order of topics and sequentially numbered within each topic.

## **GENERAL DOCUMENT COMMENTS**

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1. The transmission interconnection description included in numerous sections of the PSA needs to be modified to reflect recent changes proposed by the Valley Electric Association (VEA). The Applicant suggests the description be revised to read as follows:

"The HHSEGS will interconnect to the Valley Electric Association (VEA) system.<sup>1</sup> The interconnection would require an approximately 10-mile-long generation tie-line (gen-tie line) from the HHSEGS to the proposed Crazy Eyes Tap Substation,<sup>2</sup> where the project would interconnect to the VEA electric grid. The gen-tie line would originate at the HHSEGS's onsite switchyard, cross the state line, avoiding the mesquite vegetation to the south, and continue east for approximately 1.5 miles until reaching Tecopa Road. At Tecopa Road, the route would head northeast paralleling Tecopa Road until it reaches the Crazy Eyes Tap Substation, which would be located immediately east of the Tecopa Road/SR 160 intersection. The Crazy Eyes Tap Substation would interconnect to the existing VEA Pahrump-Bob Tap 230-kV line."

2. The following is the current description of the proposed Kern River Gas Transmission Company (KRG T) gas line. Please use this description throughout the document when describing the gas line.

A 12-inch-diameter natural gas pipeline would be required for the HHSEGS project. Kern River Gas Transmission Company (KRG T) proposes to construct the pipeline from the HHSEGS meter station, to be located in the HHSEGS Common Area, extending 32.4 miles to KRG T's existing mainline system just north of Goodsprings in Clark County, Nevada.

The HHSEGS meter station, including the pig receiver facilities, would be approximately 300 by 300 feet and would be surrounded by a 6-foot-tall chain-link fence with a three strands of barbed wire (approximately 7 feet high total). The meter station would be shaded by a canopy to cover the meter runs and associated instrumentation and valving. A data acquisition and control (DAC) building would be located within the meter station. Data acquisition, control, uninterrupted power supply (UPS), and communication equipment would be installed inside the DAC building. Yard lights will be installed on the DAC building and meter building exterior. In addition, the light fixtures would be shielded or hooded and directed downward.

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<sup>1</sup> In January 2013, VEA will become a participating transmission owner (PTO) and will turn operational control of its facilities over to the California Independent System Operator (CAISO).

<sup>2</sup> In the HHSEGS Application for Certification, this substation was referred to as the Tap Substation.

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3. The acreage of the project size and project impacts is not correct throughout the PSA. A breakdown of the project components is provided in the following table. In several sections, it states that project is a 3,277-acre site. This is not accurate since that figure includes the 180-acre laydown area, which is temporary. Solar Plant 1 is 1,483 acres, Solar Plant 2 is 1,510 acres, and the common area is 103 acres. Therefore, the area of long-term impact for the project site (minus the temporary construction laydown area) is 3,096 acres. In places that discuss the disturbed area, it should include areas of temporary disturbance and should credit the dirt roads and previous disturbed areas. Thus, the total disturbed area due to construction will be 3,199 acres. The correct numbers are shown in the following table.

Breakdown of Disturbed Area in Acres and by Impact Category

Facility	Distance (miles)	Temporary Impacts	Long-term Impacts	TOTAL
Solar Plant 1			1,483.1	1,483.1
Solar Plant 2			1,510.1	1,510.1
Subtotal Solar Plants			2,993.2	
<b>Common Area</b>				
Administration/Warehouse			4.8	4.8
Substation			3.0	3.0
Gas Metering Station			0.7	0.7
Remaining Construction Area			94.5	94.5
<b>Temporary Construction Laydown Area</b>		180.1		180.1
<b>TOTAL PROJECT AREA</b>		180.1	3,096.2	3,276.3
Credit for Existing Dirt Roads Onsite <sup>a</sup>	18.7			(61.0)
Credit for Orchard and Disturbed Areas Onsite				(16.0)
<b>NET DISTURBED AREA</b>				<b>3,199.3</b>

<sup>a</sup> Based on geographic information system (GIS) data from aerial photos

4. Throughout the document, there are different references regarding the distance of the HHSEGS site from Pahrump, Nevada. The project site is 18 miles southeast of Pahrump (by road). If the 8 miles is the straight-line distance, then that should be clarified in the description.
5. Conditions requiring a third-party review need to incorporate a 2-week limit for review and comment on the required documents.
6. In the Verification language where the submittal timing is specified, please add the words, "or such time as agreed upon by the project owner and the CPM."
7. The road to the project site is Tecopa Road. To avoid confusion with the Old Spanish Trail, Tecopa Road should be used rather than Old Spanish Trail Highway or Old Spanish Trail Road.
8. References to "Applicant" in the Conditions of Certification need to be changed to "Project Owner."

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9. References to documents submitted by the Applicant need to reflect the correct name of the Applicant (Hidden Hills Solar I, LLC, and Hidden Hills Solar II, LLC), not BrightSource Energy.
10. Throughout the PSA, the mesquite vegetation to the east of the project site is referred to as “mesquite bosque.” As discussed during the HHSEGS Biology Workshop on July 2, that is not a correct reference since the area is not a bosque. The Applicant recommends instead it be referred to as a “mesquite thicket.”

## **SPECIFIC COMMENTS BY TOPIC AREA**

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### **AIR QUALITY**

#### **General Comments**

1. Page 4.1-1, Introduction: We prefer to have a standard introduction used for all sections.
2. Page 4.1-13, 5<sup>th</sup> paragraph: Paragraph needs updating; see General Comment 2 about the gas line description.
3. Naming convention should be consistent and as follows:

HHSEGS SolarPower Plant 1, and HHSEGS SolarPower Plant 2

#### **Specific Comments**

4. Page 4.1-2, 3<sup>rd</sup> full paragraph, 2<sup>nd</sup> sentence: Lead is not analyzed in the Public Health section. No lead emissions are expected from the natural gas-fired boilers. Revise the sentence as follows:

ToxicLead is not analyzed as a criteria pollutant, but lead and other toxic air pollutant emissions impacts are analyzed in the Public Health section of this PSA.

5. Page 4.1-4, Air Quality, Table 1, LORS Assembly Bill 32: Global Warming: The last part of this LORS description should be revised, as follows:

<u>Assembly Bill 32: Global Warming Solutions Act of 2006 and related other GHG reduction regulations measures</u>	Reduce emissions of GHGs; operator must purchase and surrender GHG allowances, <u>as required</u> .
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# Hidden Hills Solar Electric Generating System (HHSEGS) (11-AFC-2) PSA Comments, Set 3

6. Page 4.1-4, Air Quality, Table 1, LORS, GBUAPCD, Local Rule 220: Project is not subject to Local Rule 220 as it is not a major source of hazardous air pollutants (HAPs). Delete the reference to "220" from the list of rules.
7. Page 4.1-4, Air Quality, Table 1, LORS, GBUAPCD, Rule 400-402: These rules apply during plant operation as well as during plant construction. Revise the LORS description for these rules as follows:

Limits the visible, nuisance, and fugitive dust emissions and would be applicable to the construction and operation phases of the project.

8. Pages 4.1-8 and 4.1-9, Table 4, PM<sub>2.5</sub> entry and footnote c: The 98<sup>th</sup> percentile values are available at: [http://www.epa.gov/airdata/ad\\_rep\\_mon.htm](http://www.epa.gov/airdata/ad_rep_mon.htm). Values shown in Table 4 are first max, but should be the third highest values (as noted in footnote c below). Please revise the particulate matter less than 2.5 micrometers in aerodynamic diameter (PM<sub>2.5</sub>) entry in Table 4 as follows:

PM <sub>2.5</sub> <sup>c</sup>	Jean, NV	24 hours	µg/m <sup>3</sup>	<u>11.49</u>	<u>13.79</u>	<u>13.813</u>	<u>13.011</u>	<u>13.510</u>	35
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9. Page 4.1-11, Table 5, PM<sub>2.5</sub> – 24 hours: The concentration 13.8 is the maximum; the standard is in the form of the 98th percentile, so 13 should be used. Please revise the PM<sub>2.5</sub> entry in Table 5 as follows:

PM <sub>2.5</sub>	24-hour	<u>13.813</u>	35	<u>3937%</u>
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10. Page 4.1-12, 3rd paragraph: Because the modeling analysis is based on the staff recommended background concentrations, Paragraph 3 should be revised as follows:

In accordance with applicable EPA modeling protocols, the pollutant modeling analysis includes was limited to the pollutants listed above in Air Quality Table 5; ~~therefore, recommended background concentrations were not determined for the other criteria pollutants (ozone, lead, etc.) or background values determined for other ambient standards (visibility reducing particulates).~~

11. Page 4.1-13, 2<sup>nd</sup> paragraph, last sentence: Delete the last sentence because the nighttime preservation boilers are being permitted as part of the final design.
12. Page 4.1-14, 4<sup>th</sup> paragraph: Revise the paragraph as follows:  
Process wastewater would be treated onsite, ~~and recycled for use at each of the two plants, and Domestic wastewater would be disposed of~~ in a septic tank and an onsite leach field. Therefore, no industrial wastewater or sewer pipeline would be constructed.
13. Page 4.1-14, 5<sup>th</sup> paragraph, 4<sup>th</sup> sentence: The use of on-road engines for mirror washing was discussed in DR Set 2, Boiler Optimization Plan and Design Change (filed April 2, 2012), on Page 5. Thus, revise this sentence to include "on-road" as follows:



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Additionally, the applicant has proposed that the facility would have engines for the mirror washing equipment that will be EPA-certified, non-road or on-road engines to power mirror-washing trailers and dedicated pickup trucks for personnel transport within the plants.

14. Page 4.1-15, 2<sup>nd</sup> paragraph, 1<sup>st</sup> sentence: Delete the first sentence of this paragraph (about noise) because it is irrelevant to air quality.

15. Page 4.1-16, 1<sup>st</sup> paragraph: Emission estimates should be conservative due to the site activity. To address this, the first paragraph following Table 7 should be revised as follows:

These emission estimates appear reasonable in terms of the onsite equipment and offsite vehicle use and the offsite vehicle fugitive dust emissions. However, ~~staffthe onsite fugitive dust emissions estimate may be underestimated given the amount of activity on the site and appropriate level of control for the applicant's proposed mitigation measures (specifically watering unpaved roads).~~ Staff recommends additional mitigation measures, specifically the use of CEC-approved soil binders on unpaved roads and other inactive disturbed surfaces during construction, ~~to ensure so that the applicant's fugitive dust emissions estimate and associated impacts comply with the applicable standards analysis will be reasonable for this project.~~

16. Page 4.1-16, Project Operation, 2<sup>nd</sup> paragraph, 2<sup>nd</sup> and 3<sup>rd</sup> bullets: Please correct the text as follows:

One auxiliary boiler (249 MMBtu) would provide steam prior to sunrise to expedite the process of bringing the solar plants online. During cloudy days or in case of an emergency shutdown, this boiler would also keep the solar generating system hot to facilitate plant restart. The boiler would have a nominal steam production rate of 174,000 lb/hr at 770°F and ~~655750~~ psia.

One night preservation boiler would provide steam to the steam turbine generator (STG) and boiler feedwater pump and systems overnight and during other shutdown periods when steam is not available from the solar receiver steam generator (SRSG). The night preservation boiler would have a nominal steam production rate of 10,000 lb/hr at 680°F and 145 psia.

17. Page 4.1-17, 4<sup>th</sup> bullet under Project Operation: Please clarify the text as follows:

Each auxiliary boiler would have a maximum of no more than 1,208 equivalent full-load hours of use per year and each nighttime preservation boiler would have a maximum of 5,003 equivalent full-load hours of use per year;

18. Page 4.1-17, Part A, Maximum Hourly Emissions, 2<sup>nd</sup> bullet: Maximum hourly emissions reflect operation of all engines—this change was made in the boiler optimization filing (April 2, 2012). Please revise the text as follows:

All diesel engines ~~One emergency generator engine operates at a time and~~ for one-half hour of duration for testing purposes.

19. Page 4.1-17, Part B, Maximum Daily Emissions, 1<sup>st</sup> bullet: According to Table 5.1B-9R, 5 full load hours PLUS 7.5 startup hours are specified. Revise text as follows:

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The auxiliary boilers ~~would not operate for more than up to 5 hours of equivalent full load hours and only up to a total of 7.5 hours per day at low loads, including startup loads.~~

20. Page 4.1-17, Part B, 2<sup>nd</sup> bullet: The following revisions reflect data as summarized in Table 5.1B-9R. Please revise text as follows:

The nighttime preservation boilers will ~~not operate for more than up to 12 equivalent full-load~~ 12 hours per day during summer months and no more than up to 16 equivalent full-load hours per day during winter months, with an additional hour of low-load operation during startup each day.

21. Page 4.1-17, Part C, Maximum Annual Emissions, 1<sup>st</sup> and 2<sup>nd</sup> bullets: The following revisions reflect data as summarized in Table 5.1B-12R. Please revise text as follows:

Each auxiliary boiler was modeled assuming ~~1,208~~ 1,100 full-load hours and 865 startup hours of use operation per year.

Each nighttime preservation boiler was modeled assuming 4,780 full-load hours and 345 startup hours of operation ~~assumes a maximum of 5,003 full load hours of use per year.~~

22. Page 4.1-18, 2<sup>nd</sup> paragraph: Emission estimates should be conservative due to the site activity. To address this, please delete the 2<sup>nd</sup> paragraph.
23. Page 4.1-21, 2<sup>nd</sup> paragraph, 1<sup>st</sup> sentence: AERMOD version was updated for April 2012 submittal (refer to §5.1.4.5.2, p. 5.1-51). The updated version is: AERMOD version ~~110591135~~.
24. Page 4.1-21, 5<sup>th</sup> paragraph: Please delete "Plume Volume Molar Ratio Method (PVMRM)," and replace it with "Ozone Limiting Method (OLM)."
25. Page 4.1-22, Table 9, PM<sub>2.5</sub> entry and source: Because 13.8 is the maximum monitored concentration (2008), the 98<sup>th</sup> percentile value of 13 micrograms per cubic meter (µg/m<sup>3</sup>) should be used here according to Table 5.1F-8, footnote c. Revise numerical entries to indicate the correct concentration per the footnote.

PM <sub>2.5</sub>	24-hour <sup>b</sup>	5.1	<del>13.8</del> <u>13</u>	<del>17</del> <u>18</u>	35	<del>49</del> <u>46</u> %
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Source should be: HHSEGS Data Response Set 1A, Table DR8-4, 2011.

26. Page 4.1-23, Construction Impacts Mitigation, 1<sup>st</sup> sentence: These measures are not worded as "proposed" by the Applicant in the AFC. Instead, text should be revised to indicate that the "staff proposes" these measures as follows.

To mitigate the impacts due to construction of the facility, staff proposes ~~the applicant has proposed to use~~ the following mitigation measures:

27. Page 4.1-23, Construction Impacts Mitigation, Items A, B, and C: We propose the following changes:

All unpaved roads and disturbed areas in the project and for the portion of the linear construction sites located in California will be watered until sufficiently wet to ensure that no visible dust plumes leave the project site.



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Vehicle speeds will be limited to 10 miles per hour within the construction site on unpaved non-stabilized roads.

All construction equipment vehicle tires will be washed or cleaned free of dirt prior to entering or leaving the project site ~~paved roadways~~.

28. Page 4.1-23, Construction Impacts Mitigation, Items L and N: Applicant did not propose these items. Also, “top service shape” (in Item N) is ambiguous, and unenforceable as a practical matter; thus, delete Item N. Revise Item L as follows:

L. Construction equipment will be shut down when not in use in order to avoid excessive idling emissions.

~~N. Construction equipment will be maintained in top service shape.~~

29. Page 4.1-24, 1<sup>st</sup> paragraph, last sentence: Because soil stabilizers must be approved by the CPM, insert text “CPM-approved” after the word “use” (before “polymer based”).

30. Page 4.1-24, 2<sup>nd</sup> paragraph: Revise as follows:

The construction of the project would cause particulate matter emissions that would add to existing violations of the state’s ambient PM<sub>10</sub> air quality standards. Therefore, if unmitigated, the project’s construction PM<sub>10</sub> emission impacts would be ~~CEQA~~ significant. However, staff believes that the implementation of proposed specific mitigation measures during construction of the facility as identified in the conditions of certification would mitigate these short-term ~~CEQA~~ impacts of PM<sub>10</sub> emissions to a level of less than significant.

31. Page 4.1-25, Chemically Reactive Pollutant Impacts, Table 10, Entry – PM<sub>2.5</sub> at 24 hours: This is the maximum monitored value for 2008; the 98<sup>th</sup> percentile value should be used (also see comments on AQ Table 4). Numbers should be revised as follows:

PM <sub>2.5</sub> <sup>c</sup>	24-hr <sup>b</sup>	1.1	<del>13.8</del> <u>13</u>	<del>15</del> <u>14</u>	35	<del>36</del> <u>40</u> %
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32. Page 4.1-26, PM<sub>2.5</sub> Impacts, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence and 2<sup>nd</sup> paragraph, last sentence: Because some of the PM<sub>2.5</sub> is directly emitted (see AQ Table 8), please revise the 1<sup>st</sup> sentence as follows:

~~All~~ While some PM<sub>2.5</sub> is directly emitted, some PM<sub>2.5</sub> is assumed to be formed from precursor emissions and is considered secondary particulate matter.

Please revise the last sentence of the second paragraph as follows: Therefore, so the small amount of operating NOx and SOx emissions ~~that would be~~ generated by this project would have a low ~~reduced~~ potential to create secondary particulate.

33. Page 4.1-28, Emergency Backup Engines and Fire Water Pump Engines: Please correct “break horsepower” to “brake horsepower.”

34. Page 4.1-28, Maintenance Vehicles, entire paragraph: The statement that the applicant has not proposed any specific emission controls for the maintenance vehicles is not correct. The mirror washing machines (MWMs) and other maintenance vehicles selected will be either

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new on-road vehicles or certified non-road vehicles and will meet current standards just as the stationary engines do. Therefore, this paragraph should be revised as follows:

The applicant has ~~not proposed to use new on-road or certified off-road vehicles and engines~~any specific emission controls for mirror washing and other maintenance activities to minimize emissions for this emission source.

35. Page 4.1-28, Delivery and Employee Vehicles, entire paragraph: please revise the paragraph as follows:

The applicant has no control over privately owned vehicles and therefore has not proposed any specific emission controls for this emission source.

36. Page 4.1-29, 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> bullets: The project will use vehicles meeting the most current applicable standards. Off-road vehicles do not have a “model year.” Thus, the 1<sup>st</sup> bullet should be deleted. The second and third bullets should be revised as follows:

Limit vehicle speeds within the facility to no more than ten miles per hour on unpaved areas that have not undergone soil stabilization, and up to 25 miles per hour, or greater with CPM approval, on stabilized unpaved roads as long as no visible dust plumes are observed, to address fugitive PM emissions from the site;

Apply and maintain water or other~~a~~ non-toxic soil binder<sup>3</sup> to the onsite unpaved roads to create a durable stabilized surface;

37. Page 4.1-29, 1<sup>st</sup> paragraph after bullet list, 2<sup>nd</sup> sentence, 2<sup>nd</sup> part: Staff’s proposed AQ-SC9 is redundant with District permit conditions AQ-20, AQ-21, and AQ-22. Suggest replacing this condition with a condition requiring the submittal of Quarterly Operation Reports. Text should be revised as follows:

... changes to the air quality permits and **AQ-SC9** to require submittal of Quarterly Operation Reports. ~~use of engines that meet model year EPA/ARB Tier emission standards for the year purchased~~

38. Pages 4.1-33 and 34, 5<sup>th</sup> paragraph: The “desert southwest of the United States” is too large a geographic scope for an appropriate Cumulative Impacts Analysis. Cumulative impacts are the COMBINED effects of the project with reasonably foreseeable future projects. To “combine” the effects, impacts would need to be in the same air basin. Please revise the text as follows:

No additional cumulative air quality impact modeling analysis was performed, and ~~while adverse cumulative impacts would likely occur~~ no CEQA significant cumulative air quality impacts are expected after implementation of staff’s recommended project mitigation measures. . ~~However, staff is aware of a tremendous potential development of wind and solar in the desert southwest of the United States, and in the area where HHSEGS would be located. While the number of renewable project filings is much larger than what will eventually be built and operated in the desert southwest, staff believes it is appropriate to construct and operate all desert renewable projects with best practices to reduce any~~

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<sup>3</sup> The soil stabilizer product used will require prior approval by the Energy Commission.

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~~potential cumulative effects, including criteria pollutants and their contributions to region ozone and particulate matter and haze. Staff recommends Conditions of Certification AQ-SC1 and AQ-SC-7 as best practices for the construction and operation of the HHSEGS desert solar project, which may be one of many in the area and greater southeastern region.~~

39. Page 4.1-34 and 35, Compliance with LORS – Local, 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence: Best Available Control Technology (BACT) is not required, as indicated in the discussion under “Regulation II—New Source Review”. Please revise the text as follows:

The emitting equipment will be well controlled; however, Best Available Control Technology (BACT) would be implemented, and emission reduction credits (ERCs) are not required to offset the project’s emissions by District rules and regulations based on the permitted stationary source emission levels for this project.

40. Page 4.1-36, Rule 403 – Breakdown: The text for this rule should be revised as follows:

~~This rule limits fugitive emissions from certain bulk storage, earthmoving, construction and demolition, and manmade conditions resulting in wind erosion. With the implementation of recommended staff conditions AQ-SC3 and AQ-SC7 and District condition AQ-8 sets forth procedures that must be followed in the event of an unforeseeable failure or breakdown of air pollution control equipment. The facility is expected to comply with this rule.~~

41. Page 4.1-37, Conclusion, 3<sup>rd</sup> bullet: The Applicant disagrees. The engines are required to meet applicable emissions limits by state and federal regulations and by Conditions AQ-20, AQ-21, and AQ-22. Therefore, AQ-SC9 is not needed. Please delete this bullet.

42. Page 4.1-38, Findings of Fact #5, 2<sup>nd</sup> sentence: Please revise the second sentence as follows:  
However, the required mitigation set forth in conditions AQ-SC1 through AQ-SC7 will reduce the project’s impacts to a level that is less than significant.

43. Page 4.1-38, Findings of Fact #6: Please revise the text as follows:

The Great Basin Unified Air Pollution Control District has issued ~~will issue~~ a Preliminary Determination of Compliance (PDOC) finding that HHSEGS would comply with all applicable district rules and regulations for project operation. ~~The A draft of the district’s proposed~~ ATC conditions are included herein as Conditions of Certification AQ-1 through AQ-33 for each of the Two Hidden Hills Power Plants and AQ-1, AQ-3 though AQ-8, and AQ-34 through AQ-44 for the common area.

44. Page 4.14-38, Finding of Fact #7: Please revise the text as follows:

~~The analysis contains an adequate analysis of the project’s contributions to cumulative air quality impacts~~ analysis demonstrates that the project will not result in a significant cumulative impact.

## **Conditions of Certification**

45. The Applicant requests that changes be made to the following conditions of certification:

**AQ-SC1** Air Quality Construction Mitigation Manager (AQCM): The project owner shall designate and retain an on-site AQCM who shall be responsible for directing and

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documenting compliance with Conditions of Certification AQ-SC3, AQ-SC4 and AQ-SC5 for the ~~entire~~ project site and the portions of the linear facility constructed in California construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities located in California, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the Compliance Project Manager (CPM).

**Verification:** At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates.

**AQ-SC2** Air Quality Construction Mitigation Plan (AQCMP): The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification AQ-SC3, AQ-SC4, and AQ-SC5.

**Verification:** At least 60 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The AQCMP shall include effectiveness and environmental data for the proposed soil stabilizer. The CPM will notify the project owner of any necessary modifications to the plan within 15-30 days from the date of receipt.

**AQ-SC3** Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report that demonstrates compliance with the following mitigation measures for the purposes of preventing all fugitive dust plumes from leaving the project boundary. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

- A. The main access roads through the facility to the power block areas will be paved prior to initiating construction in the main power block area, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved prior to taking initial deliveries.
- B. All unpaved construction roads and unpaved operational site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer, water, or other soil weighting agent that can be determined to be at least both as efficient or more efficient for fugitive dust control as ARB-approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation. All other disturbed areas in the project and linear construction sites located in California shall be watered as frequently as necessary during grading and stabilized with a non-toxic soil stabilizer or soil weighting agent to comply with the dust mitigation objectives of Condition of Certification **AQ-SC4**. The

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frequency of watering can be reduced or eliminated during periods of precipitation.

- C. Unless approved by the CPM, No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.
- D. Visible speed limit signs shall be posted at the construction site entrances and ~~at a minimum of one per mile~~ along traveled routes.
- E. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering offsite paved roadways.
- F. Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
- G. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.
- H. All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.
- I. Construction areas adjacent to any paved roadway shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this condition does not conflict with the requirements of the SWPPP.
- J. All paved roads within the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.
- K. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.
- L. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with water or appropriate dust suppressant compounds.
- M. All vehicles used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.

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- N. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

**Verification:** The AQCMM shall provide the CPM a Monthly Compliance Report (**COMPLIANCE-6**) to include:

- A. a summary of all actions taken to maintain compliance with this condition;
- B. copies of any complaints filed with the district and subsequently provided to the project owner in relation to project construction; and
- C. any other documentation reasonably deemed documentation deemed necessary by the CPM, and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion. Any deviation from these requirements shall require prior CPM notification and approval.

**AQ-SC4** Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (A) off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner or (B) 200 feet beyond the centerline of the construction of linear facilities indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMP shall include a section detailing how the augmented ~~additional~~ mitigation measures will be accomplished within the time limits specified in steps 1 through 3, below. The AQCMM or Delegate shall implement the following procedures for augmented ~~additional~~ mitigation measures in the event that such visible dust plumes are observed:

**Verification:** The AQCMP shall include a section detailing how the augmented ~~additional~~ ~~mitigation~~ measures will be accomplished within the time limits specified in Steps 1 through 3, below. The AQCMM or Delegate shall implement the following procedures for augmented ~~additional~~ mitigation measures in the event that such visible dust plumes are observed:

Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

Step 2: The AQCMM or Delegate shall direct implementation of additional-methods of dust suppression if Step 1, specified above, fails to result in adequate mitigation within 30 minutes of the original determination.

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting



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the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, if the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

**Verification:**—The AQCMM shall provide the CPM a Monthly Compliance Report (**COMPLIANCE-6**) to include:

- A. a summary of all actions taken to maintain compliance with this condition;
- B. copies of any complaints filed with the District and provided to the project owner in relation to project construction; and
- C. any other documentation reasonably deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

Please make the following changes to AQ-SC5. Please add the standard idling condition— it is referred to in the discussions of GHG impacts and appears to have been inadvertently omitted. See Part J of AQ-SC5. We have added it as “j” below.

**AQ-SC5 Diesel-Fueled Engine Control:** The AQCMM shall submit to the CPM, in the Monthly Compliance Report, a table that demonstrates compliance with the AQCMP mitigation measures for purposes of controlling diesel construction-related combustion emissions. Any deviation from the AQCMP mitigation measures requires prior CPM notification and approval.

**Verification:** All off-road diesel construction equipment with a rating of 50 hp or greater used in the construction of this facility ~~shall be powered by the cleanest engines available that also~~ shall comply with the California Air Resources Board's (ARB's) Regulation for In-Use Off-Road Diesel Fleets (California Code of Federal Regulations Title 13, Article 4.8, Chapter 9, Section 2449 et.seq.) and shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by AQ-SC2. The AQCMP measures shall include the following, with the lowest-emitting engine chosen in each case, as available:

- a. All off-road vehicles with compression ignition engines shall comply with the California Air Resources Board's (ARB's) Regulation for In-Use Off-Road Diesel Fleets.
- b. To meet the highest level of emissions reduction available for the engine family of the equipment, each piece of diesel-powered equipment shall be powered by a Tier 4 engine (without add-on controls) or Tier 4i engine (without add-on controls), or a Tier 3 engine with a post-combustion retrofit device verified for use on the particular engine powering the device by the ARB or the US EPA. For PM, the retrofit device shall be a particulate filter if verified, or a flow-through filter, or at least an oxidation catalyst. For NOx, the device shall meet the latest Mark level verified to be available (as of January 2012, none meet this NOx requirement).
- c. For diesel powered equipment where the requirements of Part “b” cannot be met, the equipment shall be equipped with a Tier 3 engine without retrofit control devices or

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with a Tier 2 or lower Tier engine using retrofit controls verified by ARB or US EPA as the best available control device to reduce exhaust emissions of PM and nitrogen oxides (NOx) unless certified by engine manufacturers or the on-site AQCM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices can be considered "not practical" for the following, as well as other, reasons:

1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or
  2. The use of the retrofit device would unduly restrict the vision of the operator such that the vehicle would be unsafe to operate because the device would impair the operator's vision to the front, sides, or rear of the vehicle, or
  3. The construction equipment is intended to be on site for 10 work days or less.
- d. The CPM may grant relief from a requirement in Part "b" or "c" if the AQCM can demonstrate a good faith effort to comply with the requirement and that compliance is not practical.
- e. The use of a retrofit control device may be terminated immediately, provided that: (1) the CPM is informed within 10 working days following such of the termination; (2) and a replacement for the construction equipment item in question, which meets meeting the level of control required, occurs within 10 work days following such of termination of the use (if the equipment would be needed to continue working at this site for more than 15 work days after the use of the retrofit control device is terminated); and (3)-if one of the following conditions exists:
1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in exhaust back pressure.
  2. The retrofit control device is causing or is reasonably expected to cause engine damage.
  3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.
  4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination, which approval shall not be unreasonably withheld.
- f. All equipment with engines meeting the requirements above shall be properly maintained and the engines tuned to the engine manufacturer's specifications. ~~Each engine shall be in its original configuration and the equipment or engine must be replaced if it exceeds the manufacturer's approved oil consumption rate.~~
- g. Construction equipment will employ electric motors when feasible.

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- h. If the requirements detailed above cannot be met, the AQCM shall certify that a good faith effort was made to meet these requirements and this determination must be approved by the CPM, which approval shall not be unreasonably withheld.
- i. All off-road diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCM showing that the engine meets the conditions set forth herein.
- j. All diesel heavy construction equipment shall not idle for more than 5 minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.

**Verification:**—The AQCM shall include in the MCR the following information to demonstrate control of diesel construction-related emissions:

A summary of all actions taken to control diesel construction related emissions;

A list of all heavy equipment used on site during that month, showing the tier level of each engine and the basis for alternative compliance with this condition for each engine not meeting Part “b” requirements. The list shall include the owner of the equipment and a letter from each owner indicating that the equipment has been properly maintained; and

Any other documentation reasonably deemed documentation deemed necessary by the CPM and AQCM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner’s discretion.

46. AQ-SC6: Because the applicant has specified that some MWMs will be equipped with non-road engines, reference to “non-road” vehicles has been inserted into this condition. The text has been revised as follows:

**AQ-SC6** The project owner, when obtaining dedicated vehicles for mirror washing activities and other facility maintenance activities, shall only obtain new model year vehicles that meet California on-road or EPA non-road vehicle emission standards for the ~~model~~ year when obtained.

Other vehicle/fuel types may be allowed assuming that the emission profile for those vehicles, including fugitive dust generation emissions, is comparable to the vehicles types identified in this condition.

**Verification:** At least 60 days prior to the start of commercial operation, the project owner shall submit to the CPM a plan that identifies the size and type of the on-site vehicle and equipment fleet and the vehicle and equipment purchase orders and contracts and/or purchase schedule. The plan shall be updated every other year and submitted in the Annual Compliance Report (**COMPLIANCE-7**).

**AQ-SC7** The project owner shall provide a site operations dust control plan, including all applicable fugitive dust control measures identified in AQ-SC3 that would be applicable to reducing fugitive dust from ongoing operations; that:

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- A. describes the active operations and wind erosion control techniques such as windbreaks and chemical dust suppressants, including their ongoing maintenance procedures, that shall be used on areas that could be disturbed by vehicles or wind anywhere within the project boundaries; and
- B. identifies the location of signs throughout the facility that will limit traveling on unpaved portion of roadways to solar equipment maintenance vehicles only. In addition, vehicle speed shall be limited to no more than 10 miles per hour on these unpaved roadways, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.

**Verification:** The site operations fugitive dust control plan shall include the use of durable non-toxic soil stabilizers ~~as necessary on all regularly used unpaved roads and disturbed off-road areas within the project boundaries,~~ and shall include the inspection and maintenance procedures that will be undertaken to ensure that the unpaved roads remain stabilized. The soil stabilizer used shall be a non-toxic soil stabilizer, ~~water, or other~~ soil weighting agent that can be determined to be ~~both as efficient or more efficient~~ for fugitive dust control as ARB approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation.

The fugitive dust controls shall meet the performance requirements of condition AQ-SC4. The performance requirements of AQ-SC4 shall also be included in the operations dust control plan.

**Verification:** ~~At least 60 days prior to start of commercial operation, the project owner shall submit to the CPM for review and approval a copy of the plan that identifies the dust and erosion control procedures, including effectiveness and environmental data for the proposed soil stabilizer, that will be used during operation of the project and that identifies all locations of the speed limit signs. At least 60 days after the beginning of commercial operation, the project owner shall provide to the CPM a report identifying the locations of all speed limit signs, and a copy of the project employee and contractor training manual that clearly identifies that project employees and contractors are required to comply with the dust and erosion control procedures and on-site speed limits.~~

- 47. This requirement is duplicative of AQ-20/AQ-21/AQ-22. We suggest replacing this condition with the requirement for Quarterly Operation Report, which was apparently inadvertently omitted. The condition should be revised as follows:

**AQ-SC9** ~~The emergency generator and fire pump engines procured for this project will meet or exceed the NSPS Subpart IIII emission standards for the model year that corresponds to their date of purchase.~~ The project owner shall submit to the CPM Quarterly Operation Reports, following the end of each calendar quarter, that include operational and emissions information as necessary to demonstrate compliance with the Conditions of Certification herein. The Quarterly Operation Report will specifically note or highlight incidences of noncompliance.

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**Verification:**      ~~The project owner shall submit the emergency engine specifications to the CPM at least 30 days prior to purchasing the engines for review and approval. The project owner shall submit the Quarterly Operation Reports to the CPM and APCO no later than 30 days following the end of each calendar quarter.~~

48. AQ-2, Commissioning Period under Temporary Permit to Operate: Title Changes - Delete the following phrase from the AQ-2 title because these conditions also apply to Common Area sources:

**Commissioning Period under Temporary Permit to Operate :~~(only applies to Hidden Hills Power Plant 1 and 2, not the Common Area):~~**

49. AQ-10, Unit Emission Limits, Verification: A condition requiring the Quarterly Operation Report was added to the conditions. The following text was added at the end of the sentence under verification:

**Verification:**      The project owner shall submit to the CPM data showing compliance with the limits of this condition as part of the Quarterly Operation Report required under AQ-SC9.

50. AQ-12, Boiler Fuel Use Limits, Verification: The sentence was revised to change the reporting from “Annual” to “Quarterly” Operation Reporting.

**Verification:**      The project owner shall submit to the CPM the boiler fuel use data demonstrating compliance with this condition as part of the Quarterly ~~Annual~~ Operation Report.

51. AQ-31, Natural Gas Heat Input Records, Verification: The sentence was revised to change the reporting from “Annual” to “Quarterly” Operation Reporting.

**Verification:**      The project owner shall submit to the CPM the boiler fuel use data demonstrating compliance with this condition as part of the Quarterly ~~Annual~~ Operation Report.

## **Air Quality Appendix AIR-1**

52. Page 4.1-69, Appendix Air-1, Project Operations, 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence: Please revise text as follows:

The primary sources that would cause GHG emissions would be from power block maintenance activities, including mirror cleaning and minimal undesired vegetation removal, weekly testing of the emergency generator and firewater pump, daily operation of each boiler (five hours per day of operation plus additional hours for startup of each ~~for~~ auxiliary boiler and twelve to sixteen hours per day of operation plus an hour for startup of each ~~for~~ nighttime boiler) and employee commute trips.

53. Page 4.1-69, Appendix Air-1, Project Operations, 2<sup>nd</sup> paragraph, last two sentences: Please revise text as follows:

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~~Staff was not able to determine the degree to which mirror washing should be included in the documentation of operating emissions so o~~Operating emissions are shown both with and without mirror washing. ~~GHG emissions from mobile equipment may not count towards operating emissions.~~

54. Page 4.1-72, Direct/Indirect Operation Impacts and Mitigation, paragraph after 2nd bullet: Please revise as follows:

Finally, while the HHSEGS combusts natural gas for the purposes of improving plant efficiency by facilitating the startup of the solar boiler system~~freeze protection~~ and to initiate and sustain output during periods of low solar irradiance, the latter displaces higher-emission generation, and reduces the need for energy and ancillary services from natural gas-fired resources, potentially obviating the need for their construction/operation.

55. Page 4.1-74, GHG Emissions During Plant Operation, 1<sup>st</sup> paragraph and 1<sup>st</sup> sentence of 2<sup>nd</sup> paragraph: Please revise as follows:

The HHSEGS will produce GHG emissions during operations, combusting natural gas in order to provide ~~freeze protection~~ assistance in starting the solar boiler and increase or sustain energy output during periods of reduced solar irradiance (early morning and late afternoon hours, periods of high cloud cover).

The ability to produce energy for both station service and transmission to end-users slightly earlier and slightly later than would otherwise be the case without limited supplemental firing, as well as to smooth out fluctuations in output during periods when solar irradiance is interrupted has not only economic value to the owner, but provides reliability to the electricity system.

## ALTERNATIVES

### General Comments:

1. References to “BrightSource” should be replaced with the HHSEGS or the Applicant.

### Basic Project Objectives

2. The Alternatives Analysis of the PSA should be based upon the Applicant’s Basic Project Objectives.

Section 15126.6(a) of the CEQA Guidelines requires the reviewing agency to focus on “a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project” (emphasis added). Failure of an alternative to meet most of the basic project objectives is a proper basis to eliminate an alternative from detailed consideration. Thus, the project proponent’s basic project objectives form the foundation for the consideration of alternatives.

As reflected in the AFC, the basic project objectives identified by the Applicant clearly permit consideration of a reasonable range of alternatives.



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The basic project objectives for the HHSEGS are identified in the project's AFC, Section 1.3 and Section 6.1.1. The Applicant's basic project objectives should be listed in the FSA to inform the public and to frame the Alternative's analyses.

The PSA implies, but never explains, that the range of alternatives considered in the AFC should be broadened. The PSA does not, but should, explain the standard or threshold it applies for concluding that the Project Objectives set forth in the AFC should have a broader range of potentially feasible alternatives.

Numerous California cases discuss the adequacy of project objectives in the context of satisfying CEQA's requirement that lead agencies address a "reasonable range of alternatives" when preparing an EIR. As the California Supreme Court has explained, "Although a lead agency may not give a project's purpose an artificially narrow definition, a lead agency may structure its EIR alternative analysis around a reasonable definition of underlying purpose and need not study alternatives that cannot achieve that basic goal. For example, if the purpose of the project is to build an oceanfront resort hotel (*Citizens of Goleta Valley v. Board of Supervisors*, 52 Cal.3d, 553, 561 (Cal. 1990) or a waterfront aquarium (*Save San Francisco Bay Assn. v. San Francisco Bay Conservation etc. Com.* (1992) 10 Cal.App.4th 908, 924-925), a lead agency need not consider inland locations. (See also *Sequoiah Hills Homeowners Assn. v. City of Oakland* [1993] 23 Cal.App.4th 704, 715 [lead agency need not consider lower density alternative that would defeat primary purpose of providing affordable housing].)"<sup>4</sup>

In *Save San Francisco Bay Association*, several citizen action groups petitioned for writs of mandate seeking to stop the construction of an aquarium.<sup>5</sup> The citizen action groups claimed: "BCDC artificially manipulated the definition of 'purpose' of the Project in order to reach the conclusion that it is a water-related use that 'requires' a waterfront location."<sup>6</sup> The Court rejected this argument. The court found that there was "substantial evidence to support BCDC's finding that the aquarium project needs a waterfront location."<sup>7</sup>

If a project objective to build an aquarium on a waterfront location is not impermissibly narrow, even if such an objective precludes the consideration of inland locations, then it is equally valid to define the objectives of the Applicant for HHSEGS, which is solely a designer and developer of solar thermal projects, to build a solar thermal plant in an area of high solarility—even if that objective might preclude the consideration of other types of electric generating facilities.

It is important to note that in the case of the aquarium, neither BCDC nor the court rewrote the very specific project objective (of an aquarium on a waterfront location) more broadly, so as to facilitate the consideration of inland alternatives. They did not, for example, change the objective of an aquarium to be a generic "educational facility." In the case of the HHSEGS, it would be equally inappropriate for the Staff Assessment to change the project

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<sup>4</sup> *Id.*

<sup>5</sup> *Id.* at 915.

<sup>6</sup> *Id.* at 924.

<sup>7</sup> *Id.*

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objective of a solar thermal facility in an area of high solarility, to be nothing more than a generic renewable energy facility.

Similarly, it is permissible for a project objective to be the construction of *affordable* housing, even if such an objective precludes the consideration of less dense forms of residential housing.<sup>8</sup> As with *Save San Francisco Bay Association*, neither the lead agency nor the court rewrote the objective in *Sequoyah Hills Homeowners Assn.* to be the generic construction of residential housing, merely to facilitate review of a larger range of alternatives.

At the heart of the PSA's rejection of the Applicant's project objectives appears to be the belief that the Applicant's objectives are not proper project objectives and that the Staff Assessment may substitute the Commission's objectives. Any such belief is not legally supportable. In the case of *Association of Irrigated Residents et al. v. County of Madera* (107 Cal.App.4th 1383, 133 Cal.Rptr.2d 718), an EIR analyzed the expansion of a dairy. The plaintiff citizens group argued that the alternative of a reduced herd size was feasible if the project objective was stated broadly to be "producing high quality raw milk." The court found this characterization of project objectives to be too broad: "...economic feasibility is implicit in the project objective. The CUP application states that the dairy will be in the business of producing raw milk for an off-site processor...." "While a reduced herd size would unarguably reduce impacts and by doing so may meet the County's objectives, it might not achieve the applicant's business objectives of providing a livelihood for the owner/manager and his future employees..." The Court concluded that it was reasonable for Board to reject "the reduced-herd size alternative because it found that it was not economically feasible and would not achieve the basic objective of the project." In other words, the Court concluded that that Applicant's economic and business objectives are a legitimate component of the project objectives under CEQA, and the Court rejected the attempt to transform the Applicant's project objectives of operating a profitable business into a generic policy objective of merely "producing high quality raw milk."

In short, "The statutory requirements for consideration of alternatives must be judged against a rule of reason" (*Foundation for San Francisco's Architectural Heritage v. City and County of San Francisco* (1980) 106 Cal.App.3d 893, 910, 165 Cal.Rptr. 401). As long as the project of objectives allow consideration of a reasonable range of alternatives, reason does not rule out project objectives which are based on the Applicant's business objectives (such as to have an aquarium at a waterside location, a herd size that is economically profitable, or a solar thermal facility in an area of high solarility), even if such alternatives are narrower than the Lead Agency's general policy objectives.

3. Alternatives Screening, Pages 6.1-2 to 6.1-3: CEQA requires that the "statement of objectives should include the underlying purpose of the project" (Cal. Code Regs., tit. 14, § 15124[b]). The PSA, however, describes the underlying purpose of Energy Commission renewable energy programs and policies. The subject of this Application is not an Energy Commission project or an Energy Commission program. The underlying purpose of this

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<sup>8</sup> *Sequoyah Hills Homeowners Assn. v. City of Oakland* (1993) 23 Cal.App.4th 704, 715

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application is to build a solar thermal plant by a date certain. The PSA should not confuse the underlying purpose of Energy Commission regulatory programs and policies with the underlying purpose of the Hidden Hills project.

4. The project objectives listed in the PSA are not the objectives of the project proposed by the Applicant, but are instead, the objectives, as identified by Staff of a generic renewable energy project, not even a solar project or, in some cases, a thermal project! Absent a clearly demonstrated showing that the project objectives listed by the Applicant preclude consideration of a reasonable range of alternatives, the Commission has no authority to transform the project objectives into generic policy objectives. Even if the PSA provided a clearly demonstrated showing that a reasonable range of alternatives must be broader than proposed in the AFC, any modification of the project objectives would necessarily be limited to that required to meet the legal standard- and not the broad brush used in the PSA.
5. The PSA arbitrarily eliminates the Applicant's project objectives. If the project objectives are to be rewritten by Staff, the FSA should at a minimum include a table that compares the Alternatives set forth in the PSA with the Applicant's list of Basic Project Objectives. The proposed table is attached hereto as "PSA Comments Table Alternatives 1, Satisfying the Applicant's Basic Project Objectives." [The table is located at the end of the Alternative comments.] As this table demonstrates, the No Project Alternative, the Solar Photovoltaic alternative, and the Solar Trough alternatives all fail to satisfy most of the Applicant's basic project objectives.
6. Among the reasonable range of feasible alternatives to the project and the project location are the following two offsite alternatives that were presented in the AFC, but eliminated from the PSA: (1) the Calvada South alternative and (2) the Trona alternative. The PSA does not, but should, explain in sufficient detail the deletion of these two alternatives.

Because these two alternatives set forth in the AFC satisfy most of the basic project objectives of the Applicant, they are within the reasonable range of alternatives to the project.

These two alternatives, coupled with the alternatives studies in the PSA, demonstrate the robust nature of the alternatives analyses for the HHSEGS project. The Calvada South and the Trona alternatives have been included in the last two columns of the PSA Comments tables attached hereto, titled, "PSA Comments Table Alternatives 1, Satisfying The Applicant's Basic Project Objectives."

7. CEQA requires consideration of a range of reasonable alternatives to the project that is proposed. While the Staff may prefer consideration of a different project, it should not be permitted to construct a set of generic objectives that fit the Staff's preferred outcome. For an alternative to be within the range of reasonable alternatives, the alternative must avoid or substantially lessen a significant effect of the project. Specifically, Section 15126.6(f)(2)(A) of the CEQA Guidelines offers the following "key question" regarding alternative site locations:

Key Question. The key question and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project

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in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.

CEQA requires that the Commission consider only those alternatives that avoid or substantially lessen significant environmental effects.

The FSA should describe how the Alternative locations examined avoid or substantially lessens a significant effect of the project.

8. The CEQA guidelines also require that the potential significant effects of alternative projects be described in the environmental documentation for the project. Specifically, Section 15126.6(d) states the following:

If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

The FSA must address whether the Alternatives examined themselves cause one or more-significant effects.

### **The No Project Alternative**

9. The PSA's review of the "No Project Alternative" should be substantially revised to reflect "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services" (14 CCR 15126.6[e][2]).

The project site is currently subdivided into 170 individual parcels that range in size from 2.5, 20 and 40 acres. Under current zoning, if the project is not approved, it is reasonably expected in the foreseeable future that up to 170 individual landowners could build residences on the project site. These landowners are entitled to apply for a building permit, which is a ministerial, non-discretionary approval. In addition, those 170 owners could also apply for a well-permit, which is also a ministerial, non-discretionary permit.<sup>9</sup>

The CEQA guidelines state that "If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'no project' consequence should be discussed" (14 CCR 15126.6[e][3][B]). In particular, "[W]here failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment" (*Id*).

In the case of the HHSEGS, failure to proceed with the project will not result in the "preservation" of existing environmental conditions, because the property is already graded for roads and subdivided into 170 parcels. Accordingly, the FSA should identify housing

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<sup>9</sup> It was suggested at one workshop that homeowners would have to receive some sort of discretionary approval for well installation. This is incorrect, based on applicable laws and ordinances.

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development and residential wells secured by ministerial permits as “the practical result of the project’s non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment” (14 CCR 15126.6[e][3][B]).

Accordingly, the CEC as the lead agency “should proceed to analyze the impacts of the no project alternative by projecting what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services” (14 CCR 15126.6[e][3][C]).

The text of the PSA should be revised to reflect what would reasonably be expected to occur in the foreseeable future if the project were not approved. This reasonably foreseeable future includes the development of up to 170 single family residences and all of the potential environmental impacts associated with such residential development and use.

10. In addition to revisions to the text of the “No Project Alternative,” Alternatives Appendix 2 should also be revised to reflect “what would be reasonably expected to occur in the foreseeable future if the project were not approved.” Specifically, Appendix 2 should be revised to reflect the potential environmental impacts associated with up to 170 single family residences.

Attached hereto is Applicant’s proposed revisions to Alternatives Appendix 2, titled “Appendix 2, Updated To Reflect ‘What Would Be Reasonably Expected To Occur In The Foreseeable Future If The Project Were Not Approved,’ 170 Home sites, Wells, and Related Infrastructure Impacts” (the table is located at the end of the Alternative comments).

Of particular note, the No Project Alternative’s potential impacts for both Biological Resources and Water Supply are both significant and unmitigable, as Staff has defined those terms for this Appendix.

The FSA should reflect the significant and unmitigable Biological Resources and Water Resources finding associated with the No Project Alternative.

**Specific Comments:**

11. Page 6.1-3, Alternatives Screening, last sentence: The PSA states: “The project applicant’s original project objectives are listed in the “Executive Summary” of the AFC for the HHSEGS project (BrightSource Energy 2011a).”

There are 44 references to “BrightSource” that should be removed and replaced with HHSEGS or the project companies’ names.

12. Page 6.1-12, Alternatives Evaluated in Detail 1<sup>st</sup> paragraph: The PSA states: “CEQA requires consideration of ‘a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible’ (Cal. Code Regs., tit. 14, § 15126.6[a]). Feasible is defined as ‘capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors’ (Cal. Code Regs., tit. 14, § 15364).”

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The PSA should explain that factors in determining “feasibility” include “site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives” (Section 15126.6[f][1]).

The PSA should also expressly recognize Section 15126.6, which states the following:

“An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives.”

13. Page 6.1-13, No Project Alternative, 1<sup>st</sup> paragraph: The PSA states: “The no-project alternative analysis must ‘discuss the existing conditions at the time...environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services’” (Cal. Code Regs., tit. 14, § 15126.6[e][2])”

This analysis must also consider:

“If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this ‘no project’ consequence should be discussed. In certain instances, the no project alternative means ‘no build’ wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment.”

14. Page 6.1-3, No Project Alternative, 2<sup>nd</sup> paragraph: The PSA states: “The proposed HHSEGS site is currently undeveloped, vacant private land.”

It is incorrect to say the site is undeveloped. The site is partially developed by graded roads, distribution lines, and existing wells.

15. Page 6.1-3, No Project Alternative, 3<sup>rd</sup> paragraph: The PSA states: “In a February 16, 2012, letter from Inyo County addressing socioeconomic impacts of the proposed project, it states that the HHSEGS project site has ‘significant environmental assets that are just beginning to attract some specialty visitors, such as ecotourists and geologists....While the availability of such a large parcel of privately owned land is unique, the Charleston View area has yet to reach an economic takeoff point’ (Inyo County 2012a). Although this statement indicates that Inyo County staff is evaluating ideas for future uses of the area that are consistent with existing zoning at the site, no plan is under consideration that “would be reasonably expected to occur in the foreseeable future if the project were not approved”



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This reference is not to the project site in particular, but to the Tecopa Road/Old Spanish Trail and larger portions of the Charleston View area in general. In addition, this is not Inyo County's land. The project site is private property. If the HHSEGS is not constructed, there does not need to be development plan for future use of this site. There is an existing entitlement to develop up to 170 parcels for agricultural or residential use without further discretionary approvals or environmental review.

Pursuant to Section 15126(e)(2), the practical result of non-approval would result in the sale and development of up to 170 lots for residential or agricultural use. In this case, because the project site is on private property that is already subdivided with existing roads and infrastructure, failure to proceed with the project will not result in preservation of existing environmental conditions, as the property can be graded or improved without discretionary approvals or further environmental review.

16. Page 6.1-14, 1<sup>st</sup> partial paragraph, 1<sup>st</sup> full sentence: The PSA states: "The lack of a water source will continue to restrain development in the Charleston View area."

No data has been provided to support this conclusion. Residents and property owners in the area currently have access to groundwater. Existing subdivision lots on the project site have the right to pump groundwater for residential or agricultural use. The assertion that there is a "lack of water" is unsubstantiated and this should be stricken.

17. Page 6.1-14, 1<sup>st</sup> full paragraph: The PSA states: "The potential exists for minor land use changes to occur at the site (e.g., construction of a few residences). However, it is unknown whether the County would issue a well permit for a new residence. Based on available information, the No-Project Alternative is characterized by the continuation of existing conditions at the HHSEGS site. No action would be taken. No renewable energy project would be constructed and operated at the HHSEGS site. No other use is reasonably foreseeable; therefore, it is assumed that existing conditions would persist at the site absent the proposed project."

Water supply does not need to be "resolved" in order for residential or agricultural uses to be implemented. There is no evidence that 170 wells could not be permitted and dug on 170 individual parcels. Well permits are ministerial, not discretionary, permits; therefore, there is no legal basis for the statement that it is "unknown" whether the County would issue a well permit for a new residence. Staff's analysis ignores the legal reality: overlying landowners of an unadjudicated groundwater basin have an unqualified right to put such groundwater to beneficial use in a manner consistent with the same right of other overlying landowners. Absent a change in California groundwater law, the County has a legal duty to issue a permit that meets the ministerial criteria of the permit.

Title 14 of Inyo County Code, enacted by the 1974 "county building and safety ordinance" (Ord. 269 § 2 (part), 1974), governs building permits. Chapter 28 of Title 14, enacted in 1976 (Ord. 309 § 1, 1976), governs the construction, repair, modification and destruction of water wells. Inyo County Code, Title 14, Chapter 28, section 14.28.010. Chapter 28 identifies the contents of an application (section 14.28.040) and standards and specifications for wells (section 14.28.100). The Chapter provides that well permits are issued ministerially:

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“Permits shall be issued subject to compliance with the standards provided in this chapter”. Inyo County Code, Title 14, Chapter 28, section 14.28.050 (emphasis added).

The No Project Alternative is characterized by the existing land use entitlement to develop 170 parcels and to assume the entitlement does not exist or would not be exercised is speculative and not supported by substantial evidence.

There are many uses that are reasonably foreseeable—residential development, agricultural use (a portion of the site was formerly an orchard), a renewable energy project given the high solarity and interest by other companies, or other development of the site with uses similar in character to the newly constructed St. Therese Mission. Both the landowners and Inyo County want to see this land developed—even if the HHSEGS is not approved.

18. Page 6.1-14, Biological Resources, 2<sup>nd</sup> paragraph, 3<sup>rd</sup> sentence: The PSA states: “Despite this decline, impacts on groundwater dependant plants and wildlife species under the No-Project Alternatives would be much less than the proposed HHSEGS project.”

This statement is incorrect. The HHSEGS will not have a cone of depression impact beyond the boundary. There are no groundwater-dependent plants or wildlife onsite.

The Biology section also argues that the existing groundwater-dependent vegetation already experiences signs of stress. The groundwater dependent plants and wildlife could be in immediate jeopardy without our project; therefore, the impacts under the No Project Alternative would not be “much less.” Indeed, if new wells are assumed to have impacts on groundwater dependent vegetation, the effects of up to 170 new wells under the No Project Alternative may have significantly greater impact than the proposed project.

19. Page 6.1-14, Cultural Resources: The discussion of impacts to Cultural Resources must be revised to consider the impact of residential or agricultural development on 170 parcels.
20. Page 6.1-15, Soil and Surface Water, 1<sup>st</sup> paragraph: The PSA states: “Under the No-Project Alternative, potential soil erosion could result from occasional vehicle use, and the possibility of litter could cause contamination of storm water runoff. Although the site would continue to gradually degrade under the No-Project Alternative, impacts on soil and surface water would be much less than the proposed HHSEGS project.”

The discussion of impacts to Soil and Surface Water Resources must be revised to consider the impact of residential or agricultural development on 170 parcels.

Low-impact design and sheet flow drainage minimize impacts to soil and surface water. “Much” is an exaggeration even if the project site is not developed for other uses.

21. Page 6.1-15, Water Supply: The discussion of impacts to Water Resources must be revised to consider the impact of residential or agricultural development on 170 parcels.
22. Page 6.1-15, Water Supply: The PSA states: “Despite this decline, impacts from potential drawdown of local wells and impacts on groundwater basin balance would be much less than HHSEGS.”

There are no facts or analysis to support this conclusion, even if the project site is not developed for other uses. If the project site is developed for residential or agricultural use,

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as currently permitted, the potential for water impacts may be much greater than the HHSEGS.

23. Page 6.1-20, Potential Feasibility Issues, 4<sup>th</sup> paragraph: The PSA states: “The alternatives analysis cannot be limited to alternatives that would satisfy only the applicant’s project objectives.”

As we explained previously in the General Comments, the law is very clear that an alternatives analysis should consider of a reasonable range of alternatives that will meet the Applicant’s project objectives and it is inappropriate to substitute the Lead Agency’s policy objectives for the Applicant’s project objectives, merely to facilitate consideration of an alternative that may be favored by the agency.

Section 15124 requires a statement of the objectives sought by the proposed project, including the underlying purpose of the project. This 4<sup>th</sup> paragraph should be revised as follows:

The alternatives analysis cannot be limited to alternatives that would satisfy ~~only the~~ all of applicant’s project objectives, but must be limited to alternatives that feasibly attain most of the project’s basic objectives, and would avoid or substantially lessen any of the significant effects from the project.

24. Page 6.1-20, Potential Feasibility Issues, 4<sup>th</sup> paragraph, last sentence: The PSA states: “The project objectives cannot be so narrow as to render all project alternatives potentially infeasible.”

The project objectives cannot be so narrow as to render *all* alternatives infeasible. But that is not the case of the project as proposed by the applicant. The Applicant’s project objectives permit consideration of a reasonable range of alternatives. Where the project objectives proposed by the applicant allow consideration for a reasonable range of alternatives, there is no justification for substituting the lead agency’s generic policy objectives for the project objectives.

25. Page 6.1-25, 1<sup>st</sup> full paragraph: The PSA states: “The effect of declining groundwater levels on groundwater dependent species is somewhat less than HHSEGS under this alternative.”

This conflicts with previous statements above. What is the difference between “much less” as compared to “somewhat less”?

26. Page 6.1-25, 2<sup>nd</sup> paragraph: The PSA states: “The same or similar conditions of certification could also be implemented at the Sandy Valley site, which would reduce impacts on groundwater-dependent species (e.g., mesquite bosques) to less than significant.”

There are no mesquite bosques in the vicinity of the HHSEGS (we only have mesquite thickets). Hence, if the bosques exist at the Sandy Valley alternative the impacts to bosques could be greater since they are a “sensitive community.”

27. Page 6.1-26, Cultural Resources, 2<sup>nd</sup> paragraph: The PSA states: “The discussions below of the environmental contexts and of the potential effects of the proposed project on cultural

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resources suggest that the effects of the Sandy Valley Off-site Alternative would be somewhat greater than those of the proposed HHSEGS project.”

What does “somewhat greater” mean, and why?

28. Pages 6.1-35 and 36, last paragraph: The PSA states: “For the land use impact pertaining to potential conflicts with applicable land use plans, the impact would be **similar to HHSEGS** for the portion of the alternative project site that is in Inyo County. This conclusion is based primarily on discussions with Inyo County staff and planning issues outlined in the February 23, 2012, letter from Inyo County staff.”

This statement is true only if the HHSEGS is not an allowable use in Inyo County. The Land Use section of the PSA notes that the HHSEGS has applied for a general plan amendment overlay and zoning overlay..

29. Page 6.1-38, 1<sup>st</sup> partial paragraph, 1<sup>st</sup> sentence: The PSA states: “Compliance of this alternative with the NEMO Plan would be required.”

Would the alternative comply? Why is there no analysis of the difference in impacts for this?

30. Page 6.1-40, Traffic and Transportation, 1<sup>st</sup> paragraph: The PSA states: “Due to the remote location of the study area, and the possibility that access routes are not designed to withstand frequent and heavy construction traffic, use of the existing roadway network during construction phases would be similarly challenging as the proposed HHSEGS site.”

This is not accurate. The only paved access is from Goodsprings. The road from Goodsprings includes significant elevation changes and difficult bends in the road. The site visibility is very poor due to adverse horizontal and vertical curves. Access to the HHSEGS is along a fairly straight, flat roadway from SR 160.

31. Page 6.1-40-41, last paragraph, last sentence: The PSA states: “Under the proposed project, the access roads are not designed to current public works standards for the amount of the proposed construction traffic. Conditions of certification would be required to reduce impacts to roadways and to ensure that potential hazards from increased use for construction traffic were avoided or reduced. This impact would be similar to HHSEGS.”

We disagree with this statement. Please see the note above.

32. Page 6.1-47, Overview: The PSA states: “This alternative would use BrightSource Energy’s solar thermal technology with added molten-salt storage at the proposed project site.”

Is this properly considered an alternative to the project as a whole, or an alternative to a part of the project (not required under CEQA)?

33. Page 6.1-53, 2<sup>nd</sup> full paragraph, 1<sup>st</sup> and 2<sup>nd</sup> sentences: The PSA states: “Impacts on avian species, including the state listed golden eagle and special-status bat species, would be the same or somewhat greater than HHSEGS, given that the zones of reflected solar flux could be measurably greater under this alternative. (Refer to the discussion above under the subsection, ‘Air Quality’ for a general discussion of additional land needed for the heliostat array under this alternative.) The applicant has identified no means of mitigating or minimizing these impacts at the proposed HHSEGS site; therefore, impacts on avian species are significant. While additional information is anticipated from the applicant regarding

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measures to mitigate and minimize impacts related to reflected solar flux, avoidance of exposure to solar flux is not possible (i.e., no feasible on-site mitigation is possible)."

What is the basis for the assertion that impacts on avian species is significant? All documentation submitted by the Applicant to date demonstrates that the impacts from the HHSEGS on avian species will be less than significant.

This paragraph should be revised as follows:

Impacts on avian species resulting from elevated solar flux in close proximity to the tower, including the state listed golden eagle and special-status bat species would be the same as, or somewhat greater than, HHSEGS, given that the zones of reflected solar flux could be measurably greater under this alternative. (Refer to the discussion above under the subsection, "Air Quality," for a general discussion of additional land needed for the heliostat array under this alternative.) ~~The applicant has identified no means of mitigating or minimizing these impacts at the proposed HHSEGS site; therefore, impacts on avian species are significant. While additional information is anticipated from the applicant regarding measures to mitigate and minimize impacts related to reflected solar flux, avoidance of exposure to solar flux is not possible (i.e., no feasible on-site mitigation is possible).~~

34. Page 6.1-53, 2<sup>nd</sup> full paragraph, 3<sup>rd</sup> sentence: The PSA states: "The applicant has identified no means of mitigating or minimizing these impacts at the proposed HHSEGS site; therefore, impacts on avian species are significant."

This sentence impermissibly reaches a legal conclusion with no foundational basis, and, in fact there is no such basis. . There must first be a finding that there is a significant adverse impact before there is a requirement to mitigate the impact. The mere fact that mitigation has not been proposed does not make an impact significant.

35. Page 6.1-60, Alternatives Table 5, 2<sup>nd</sup> row (Desert Sunlight Solar Farm Project), 2<sup>nd</sup> column (Major Project Equipment): The PSA states: "Main generation area – First Solar thin-film PV modules organized into arrays, combining switchgear, overhead lines, and access corridors."

Is the project single axis or fixed tilt?

36. Page 6.1-60, Alternatives Table 5, 2<sup>nd</sup> row (Desert Sunlight Solar Farm Project), 2<sup>nd</sup> column (Major Project Equipment): The PSA states: "PV arrays consisting of PV modules, a power conversion station, and a transformer."

Is the project single axis or fixed tilt?

37. Page 6.1-61, Potential to Obtain Project Objectives, 2<sup>nd</sup> paragraph: The PSA states: "The Solar PV Alternative would likely satisfy four of the six project objectives. This alternative would have a lower ability to satisfy the project objective addressing operational flexibility (see **Alternatives Table 4**)."

A generic Solar PV alternative does not meet even a majority of the PSA's six generic policy objectives, much less the project objectives set forth in the Application.

First, as the PSA acknowledges, a generic PV alternative does not provide flexible generation. Intermittency and variability of PV plants, especially those that use fixed-axis technologies that cannot track the sun over a course of the day, brings into question their

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suitability for large-scale generation. From the utilities' standpoint, solar thermal power plants in general enjoy substantial operational benefits. The HHSEGS' design uses solar energy to heat water into superheated steam that drives a turbine connected to a synchronous rotating generator connected to the transmission system. Thermal and rotating equipment contain inertia that serves to "smooth" generation, as well as provide other grid-stabilizing benefits, such as VARs, active power control, and governor control.

The HHSEGS also has the particular ability to increase or decrease the number of heliostats focusing on the receiver to account for variability in time of day and season further stabilizing the generation profile, or shaping to profile to meet system needs. The HHSEGS can decrease or "turn down" excess mirrors when available solar energy is greater than can be absorbed by the receiver system and converted to electricity by the turbine. Similarly, toward the end of the day or, during times of lesser insolation in winter months, HHSEGS can increase the number of heliostats focused on the receiver to increase production and extend the generating day. These capabilities have the effect of reducing the variability of output of the HHSEGS tower technology. For example, each unit in the HHSEGS project will generate at its maximum rating for at least 40 percent of all sunlit hours despite the fact that insolation will be quite variable during those hours—while a corresponding PV plant will be highly variable at all times.

Second, a generic PV alternative will not obtain site control and use for a 500-MW facility in a reasonable period of time. The 3,276-acre site is too small to support a 500-MW PV project. For instance, using the 7.4-acre-per-MW average of the four PV projects described in the PSA, a PV project on the current project site would yield 443 MW in nameplate capacity, an 11.4 percent reduction in nameplate capacity compared to Applicant's 500-MW solar thermal project. To attain the 500 MW of nameplate capacity for a PV facility would require a total 3,700 acres, which is a 12.9 percent increase in the amount of land needed. In addition, due to the higher capacity factor of Applicant's technology (32.7 percent) versus the capacity factor of single-axis or fixed tilt PV (24.4 percent), Applicant's technology would yield significantly more power over a year on the same project footprint (1,432, 260 MWh versus 948,091 MWh). Put another way, to produce the same quantity of power to the grid using single-axis or fixed-tilt PV would require 4,950 acres of land, or 51 percent more land than using Applicant's technology.

Third, given the lack of flexibility and lower efficiency of the PV alternative, there is no showing in the PSA that a generic PV alternative would result in sales of competitively priced renewable energy consistent with the needs of California utility companies. Because there is an executed PPA for the HHSEGS, there is conclusive evidence that the HHSEGS will provide competitively priced energy consistent with the procurement obligations of California's utilities. In contrast, given the lack of flexibility and lower efficiency of the PV alternative, it is purely speculative that this alternative would meet this objective.

38. Page 6.1-52, Potential Feasibility Issues, 2<sup>nd</sup> paragraph: The PSA states: "The work required to redesign the project to use a PV technology would delay the project schedule, and it is not known whether CPUC would approve amendments to the PPAs allowing the technology change. It is also not known at what point a project schedule delay would affect project viability."



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This paragraph should be revised as follows:

The work required to redesign the project to use a PV technology would delay the project schedule, and it is not known whether PG&E would agree to amend the PPAs in a way that allows the project to continue to be feasible or that CPUC would approve amendments to the PPAs allowing the technology change. It is also not known at what point a project schedule delay would affect project viability.

39. Page 6.1-62, Biological Resources, 1<sup>st</sup> paragraph: The PSA states: "Assuming a project site with the same current boundaries as the proposed project, impacts on all special-status species and habitats, including waters of the state and waters of the U.S., would be similar to HHSEGS."

Because of the low impact design element of HHSEGS and the land efficiency of its design, impacts of a PV project would necessarily be *greater* than HHSEGS. A generic PV project would require very substantial grading and leveling of the site. Moreover, as a generic PV project would have to be substantially larger than HHSEGS in order to provide the same quantity of renewable energy, even a PV project that minimized grading and leveling, and had the same impact per acre as HHSEGS, would in fact have a much greater impact on the ground as it would require far more acreage.

40. Pages 6.1-62-63, Biological Resources, 2<sup>nd</sup> paragraph: The PSA states "If reconfiguration of the proposed project site was needed to accommodate installation of parallel rows of PV modules, the extent of impacts on biological resources identified for the proposed project could change. Staff concludes that impacts on desert tortoise, waters of the U.S., waters of the state, and other special-status plants and wildlife could be slightly more if the project boundary moved east or north."

This section should address the impact of increasing the project boundaries to accommodate a 500-MW PV project.

41. Page 6.1-63, 1<sup>st</sup> full paragraph: The PSA states: "Impacts on groundwater dependant plants and wildlife species would be much less than HHSEGS, given the very infrequent washings needed for PV solar panels, and these impacts could likely be mitigated to below a level of significance. Because this technology does not employ central collector towers (e.g., an SPT at the center of a heliostat array), no collision or singeing/burning impacts on avian species would occur. Impacts on raptors and avian species would occur through conversion of the project site from native vegetation to a solar farm, but the impacts are predicted to be much less than HHSEGS. Impacts on avian species stemming from habitat loss could be mitigated to below a level of significance."

This paragraph should be revised as follows:

HHSEGS' onsite wells will not have an impact on offsite water dependent vegetation. However, if such an impact is assumed, impacts from water extracted from onsite wells on offsite groundwater dependant plants and wildlife species would be much less than HHSEGS, given the very infrequent washings needed for PV solar panels, and these impacts could likely be mitigated to below a level of significance. Because this technology does not employ central collector towers (e.g., an SPT at the center of a heliostat array), PV presents no risk of no collision with towers (although it would present risk of collision with panels) or

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singeing/burning due to elevated solar flux to impacts on avian species would occur. Impacts on raptors and other avian species of the solar field would occur through conversion of the project site from native vegetation to a solar farm, but the impacts are predicted to be ~~much less than~~ the same as the HHSEGS, or greater than the HHSEGS if a PV facility would require grading of the land. Impacts on avian species stemming from habitat loss could be mitigated to below a level of significance.

42. Page 6.1-63, Cultural Resources, 1<sup>st</sup> paragraph: The PSA states: "Construction and operation of the Solar PV Alternative at the proposed project site would most likely result in a similar extent of physical ground disturbance on the project site and a much lesser degree of visual intrusion on off-site resources relative to the proposed project, because the vertical profile of HHSEGS would dramatically change with the loss of the HHSEGS power towers. Staff would characterize the net effect of this alternative on cultural resources to be much less than that of HHSEGS."

Construction and operation of the Solar PV Alternative at the proposed project site due to the increased footprint required and grading of up to 100 percent the land would result in a **greater** extent of physical ground disturbance on the project site. Under the HHSEGS low-impact design, subsurface cultural resources will remain intact.

The discussion of visual impacts is both factually incorrect and does not belong in the Alternatives section. These issues are discussed further in the Applicant's comments on the Visual Resource and Cultural Resource sections of the PSA.

43. Page 6.1-63, Geology and Paleontology: The PSA states: "Construction and operation of the Solar PV Alternative at the proposed project site could have significantly fewer impacts compared to the proposed HHSEGS project. Primarily, the Solar PV Alternative would not require the deep or otherwise specialized foundations that would be required for the SPTs and the numerous heliostat foundations of the proposed project."

If a PV site would be graded and/or expanded to produce the same amount of power as the HHSEGS, the potential impacts would be greater than the impact of the HHSEGS. Additionally there are no foundations associated with the heliostats.

44. Page 6.1-64, Noise and Vibration: The PSA states: "The only source of noise would be the inverters, which are generally quiet at relatively short distances. Impacts related to noise would be much less than HHSEGS under this alternative."

The analysis for Sandy Valley offsite assumes that after COC's the overall impacts of both would be insignificant; therefore, the impacts would be the same. The same reasoning applies here. The COC 's of the HHSEGS Noise and Vibration will reduce the impacts to less than significant; therefore, the impacts when measured outside the project boundaries are the same.

45. Page 6.1-64, Public Health: The PSA states: "Due to very infrequent washings of PV panels, toxic air emissions related to mirror washings would be substantially reduced."

We are not aware of any toxic air emissions related to mirror washings, and the PSA points to no evidence for them. Please explain the statement that "toxic" air emissions will result from mirror washing.

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46. Page 6.1-64, Socioeconomic Resources: The PSA states: “The beneficial impact through construction employment and increased taxes and fees would be the same as HHSEGS.”

The HHSEGS will require more workers during construction and operation. Therefore, the beneficial impact from construction employment and taxes paid by these workers will be greater than the PV alternative.

47. Page 6.1-65, Traffic and Transportation, 2<sup>nd</sup> paragraph: The PSA states: “Mitigation measures could include screening the site perimeter.”

For both the HHSEGS and the PV alternative, the impacts of glint and glare, if any, can be mitigated to less than significant.

48. Page 6.1-65, Visual Resources, Comparison of the Proposed HHSEGS Project to the Solar PV Alternative: The PSA states: “The Solar PV Alternative would not use heliostats or any other type of mirrored-surface solar collector. Although the acreage requirement for this alternative would be comparable to the proposed HHSEGS project, the most notable difference between the proposed project and the Solar PV Alternative is the lack of the visually dominant power towers, brightly glowing SRSs, and FAA safety lighting.”

As discussed previously, the acreage for a 500-MW PV project would be greater. Also, as we discuss in our comments on the Visual Resources section of the PSA, we disagree with the characterization of the towers as visually dominant, of the SRSs as “brightly glowing” or of the FAA safety lighting as a significant adverse impact.

49. Page 6.1-67, Soil and Surface Water, 3<sup>rd</sup> paragraph: The PSA states: “Higher land requirements for utility-scale PV power plants have also been stated in the range of about 9 acres per MW (REAT 2010).”

This should also be recognized in the other sections of this Alternatives analysis.

50. Page 6.1-68, 1<sup>st</sup> partial paragraph: The PSA states: “Also, because traditional power plant facilities are not needed, a PV alternative would result in less soil disturbance for power plants (21 acres for the proposed HHSEGS project) and construction laydown and temporary parking (approximately 20 acres for the proposed HHSEGS project) to construct them. Impacts related to soil erosion during project operations would be less than the proposed HHSEGS project.”

This is not necessarily true. It is our understanding that for the California Valley Solar Ranch, 37 1-acre construction lay down areas were required.

51. Page 6.1-72, 1<sup>st</sup> partial paragraph: The PSA states: “Avoiding these impacts would not be possible. Under the Parabolic Trough Alternative, the potential for avian species to collide with various structures in the solar field is much less than the proposed HHSEGS project because no SPT is associated with this alternative; therefore, no tower collision impacts would occur. Impacts on raptors and avian species would also occur through conversion of the project site from native vegetation to a solar farm.”

What is the assumed potential for avian collision with the tower? We are particularly concerned with the assumption that collisions will be “much” less. “Much” less than what?

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52. Page 6.1-72, Cultural Resources: The PSA states: "Staff would characterize the net effect of this alternative on cultural resources to be much less than that of HHSEGS."

The low-impact design of the HHSEGS will reduce ground disturbance compared to PV, and will have less impact on cultural resources.

53. Page 6.1-80, Environmentally Superior Alternative, 2<sup>nd</sup> paragraph: The PSA states: "From the perspective of purely minimizing effects on the existing environment, the No-Project Alternative would be the superior alternative because it would result in no changes in the existing condition."

Pursuant to CEQA, the agency must identify the predictable outcome of denial of the project, including proposals of different projects. The likely outcome of No Project is residential or development of up to 170 parcels on the project site. Because the issuance of building permits and well permits are ministerial acts, the development of these parcels may proceed without further environmental review and any additional mitigation for the impacts of this development. In contrast, the proposed HHSEGS project is subject to thorough environmental review and will be subject to numerous conditions that will mitigate the impacts of the project. Therefore, from the perspective of purely minimizing effects on the existing environment, the HHSEGS project would be the superior alternative.

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**PSA COMMENTS ALTERNATIVES TABLE 1**

**SATISFYING THE APPLICANT'S BASIC PROJECT OBJECTIVES**

Applicant's Basic Project Objectives	No Project Alternative	Sandy Valley Off-Site	Solar Power Tower with Energy Storage	Solar Photovoltaic	Parabolic Trough	Calvada South (Presented in AFC, But Eliminated in PSA)	Trona (Presented in AFC, But Eliminated in PSA)
To use BrightSource's proprietary technology in another utility-scale project, further proving the technical and economic viability of the technology	No	Yes	Yes	No	No	Yes	Yes
To locate the solar generating facility in an area of high solaririty	No	Yes	Yes	Yes	Yes	Yes	Yes
To site the project in a timely manner by minimizing potentially significant impacts and complying with applicable laws, ordinances, regulations, and standards (LORS)	No	No	Yes	No	No	Yes	Yes
To reduce stormwater impacts by selecting a site with minimal slope, predominately 5 percent	--	Yes	Yes	Yes	Yes	Yes	Yes

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Applicant's Basic Project Objectives	No Project Alternative	Sandy Valley Off-Site	Solar Power Tower with Energy Storage	Solar Photovoltaic	Parabolic Trough	Calvada South (Presented in AFC, But Eliminated in PSA)	Trona (Presented in AFC, But Eliminated in PSA)
slope or less							
To secure site control within a reasonable timeframe, with a reasonable effort, and at a reasonable cost	--	No	Yes	No	No	Yes	Yes
To locate the solar generating facility on land that has been identified by local governments as suitable for renewable energy development	No	No	Yes	Yes	Yes	Yes	Yes
To assist California in repositioning its generation asset portfolio to use more renewable energy in conformance with state policies, including the policy objectives set forth in SB 1078 (California Renewable Portfolio Standard [RPS] Program), Assembly Bill (AB) 32 (California Global Warming Solutions Act of 2006), and SB X 1-2 recently signed by Governor Brown to codify the 33 percent RPS by 2020	No	Yes	Yes	Yes	Yes	Yes	Yes

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Applicant's Basic Project Objectives	No Project Alternative	Sandy Valley Off-Site	Solar Power Tower with Energy Storage	Solar Photovoltaic	Parabolic Trough	Calvada South (Presented in AFC, But Eliminated in PSA)	Trona (Presented in AFC, But Eliminated in PSA)
To comply with provisions of the power sales agreement to develop a nominal 500-MW solar generating facility that can interconnect to the CAISO Balancing Authority with the potential of achieving a commercial online date as soon as possible, targeted for the first/second quarter of 2015	No	No	No	No	No	Yes	Yes
To provide renewable power capable of providing grid support by offering power generation that is flexible, and delivered to the grid operator through communications with a scheduling coordinator	No	Yes	Yes	No	No	Yes	Yes
To generate renewable electricity that will be qualified as meeting the RPS requirements of the California Energy Commission (CEC), California Public Utility Commission (CPUC), and the Western Renewable Energy	No	Yes	Yes	Yes	Yes	Yes	Yes



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Applicant's Basic Project Objectives	No Project Alternative	Sandy Valley Off-Site	Solar Power Tower with Energy Storage	Solar Photovoltaic	Parabolic Trough	Calvada South (Presented in AFC, But Eliminated in PSA)	Trona (Presented in AFC, But Eliminated in PSA)
Generation Information System (WREGIS) program for tradable renewable energy credits							

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<b>Alternatives Appendix 2 Updated</b>	
<b>“What Would Be Reasonably Expected To Occur In The Foreseeable Future If The Project Were Not Approved?” 170 Homesites, Wells, and Related Infrastructure Impacts</b>	
<b>NO PROJECT ALTERNATIVE</b>	
<b>Environmental Effect</b>	<b>POTENTIAL EFFECTS OF THE “NO PROJECT ALTERNATIVE”</b>
<b>Air Quality</b>	
Construction-related emissions	Air District dust control measures will apply; however, individual home builders will not have any Air District permits and no Air Quality Monitors.
Project operations emissions	Homes will have some common household emissions, but will not require Air District permits.
<b>Biological Resources</b>	
Impacts on special-status plant species and habitats	<p>Homeowners will not be required to acquire offsite mitigation lands.</p> <p>Per existing law, homeowners must simply provide CDFG with 10-day notice before removing “special status” plants.</p> <p>If 10-day notice is given to CDFG, after that period ends, plants can be eradicated without any compensation.</p>
Impacts on waters of the U.S. and waters of the state	Homeowners will not be required to acquire offsite mitigation lands.
Impacts on desert tortoise	<p>Homeowners will not be required to acquire offsite mitigation lands.</p> <p>Homeowners will not be required to construct desert tortoise fencing.</p> <p>Homesites remove 3,276 acres of potential habitat.</p>
Impacts on special-status terrestrial wildlife species (other than desert tortoise)	<p>Homeowners will not be required to acquire offsite mitigation lands.</p> <p>Homeowners will be allowed to passively haze any onsite non-threatened, non-endangered species.</p> <p>Homesites remove 3,276 acres of potential habitat.</p>
Impacts on avian species, including raptors	Homesites remove 3,276 acres of potential foraging habitat.
<b>Cultural Resources</b>	
Potential to disturb, destroy, or visually degrade significant prehistoric and historical archaeological sites <i>on</i> the site (see note)	Same as project with homesites located on the “site.”
Potential to disturb, destroy, or visually degrade significant prehistoric and historical archaeological sites <i>beyond</i> the site	Same as project with homesites located on the “site.”

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<b>Alternatives Appendix 2 Updated</b>	
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<b>NO PROJECT ALTERNATIVE</b>	
<b>Environmental Effect</b>	<b>POTENTIAL EFFECTS OF THE “NO PROJECT ALTERNATIVE”</b>
Potential impacts on significant built-environment cultural resources <i>on</i> the site	Same as project with homesites located on the “site.”
Potential impacts on significant built-environment cultural resources <i>beyond</i> the site	Same as project with homesites located on the “site.”
Potential to disturb, destroy, or visually degrade significant ethnographic resources <i>on</i> the site	Same as project with homesites located on the “site.”
Potential to disturb, destroy, or visually degrade significant ethnographic resources <i>beyond</i> the site	Same as project with homesites located on the “site.”
Note: “Site” means the facility site proper and does not include linear or ancillary infrastructure away from the facility site.	
<b>Fire Protection</b>	
Potential impacts on local fire protection resources	Additional 170 homesites requiring fire protection.
Potential impacts on emergency response services	Additional 170 homesites requiring emergency services
<b>Geology and Paleontology</b>	
Potential impacts from strong seismic shaking	Similar to the HHSEGS, though different seismic codes apply to residential.
Potential impacts from soil failure caused by liquefaction, hydrocollapse, formation of soil fissures, and/or dynamic compaction	Similar to the HHSEGS, though different seismic codes apply to residential.
Potential impacts on paleontological resources	Similar to the HHSEGS with homesites.
Potential impacts on geological or mineralogical resources	Similar to the HHSEGS with homesites.
<b>Hazardous Materials</b>	
Potential for release of hazardous materials to occur	Smaller quantities associated with homesites.

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<b>Alternatives Appendix 2 Updated</b>	
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<b>NO PROJECT ALTERNATIVE</b>	
<b>Environmental Effect</b>	<b>POTENTIAL EFFECTS OF THE “NO PROJECT ALTERNATIVE”</b>
onsite	
Potential for release of hazardous materials to occur offsite	Smaller quantities associated with homesites.
<b>Land Use</b>	
Conflicts or inconsistencies with general plan land use designations and zoning	Homesites consistent with general plan and zoning.
Conversion of agricultural land	Conversion of potential agricultural lands will occur, as evidenced by former orchard activities.
<b>Noise and Vibration</b>	
Potential for noise to impact noise-sensitive receptors	Temporary construction noise impacts less than significant; noisy construction limited to hours allowed by applicable LORS.
<b>Public Health</b>	
Potential for project operations to cause air toxics-related impacts that could affect public health	Home site construction and operations address potential for toxics-related impacts.
<b>Socioeconomic Resources</b>	
Construction employment and increased taxes and fees	Home site construction will have some beneficial socioeconomic impacts.
Displacement of existing rural residences	
Potential impacts to emergency medical and law enforcement services	Home site construction and operations will create demands for emergency, fire, and law enforcement services.
<b>Traffic and Transportation</b>	
Potential impacts on roadway infrastructure	Existing roadway system on project site can serve homesites.
Potential for glint and glare to cause safety hazards from an operator control perspective (i.e., vehicle drivers and aircraft pilots)	Homesites will not have reflective surfaces, other than windows. Residences will have night lighting, similar to night lights seen in Charleston View and Pahrump.

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<b>Environmental Effect</b>	<b>POTENTIAL EFFECTS OF THE “NO PROJECT ALTERNATIVE”</b>
<b>Transmission Line Safety and Nuisance</b>	
Potential for impacts related to aviation safety, hazardous shocks, nuisance shocks, and electric and magnetic field exposure	Homesites will require residential (distribution-level) electric service, requiring new overhead or underground lines.
<b>Visual Resources</b>	
<b>Construction-Related Impacts</b>	
Potential to substantially degrade the existing visual character or quality of the site and its surroundings	Home site construction would likely be intermittent and staggered; that is, individual homesites would be built by landowners on their own schedules, as opposed to being constructed all at once in home-builder phases.
Potential to create a new source of substantial light or glare which would adversely affect day or nighttime views in the area	Home site construction not a substantial source of daytime light or glare or nighttime construction lighting.
<b>Project Operations Impacts</b>	
Potential to substantially degrade the existing visual character or quality of the site and its surroundings	Similar to project. Residences will have night lighting, similar to night lights seen in Charleston View and Pahrump.
Potential to create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area	Residences will have night lighting, similar to night lights seen in Charleston View and Pahrump.
<b>Waste Management</b>	
Potential for disposal or diversion of project materials to cause impacts on existing waste disposal or diversion facilities	Homebuilders required to comply with applicable LORS re disposal or diversion.
Potential for impacts on human health and the environment related to past or present soil	Homebuilders required to comply with applicable LORS re disposal or diversion.

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<b>“What Would Be Reasonably Expected To Occur In The Foreseeable Future If The Project Were Not Approved?” 170 Homesites, Wells, and Related Infrastructure Impacts</b>	
<b>NO PROJECT ALTERNATIVE</b>	
<b>Environmental Effect</b>	<b>POTENTIAL EFFECTS OF THE “NO PROJECT ALTERNATIVE”</b>
or water contamination	
<b>Soil and Surface Water</b>	
Soil erosion by wind and water during project construction	Home site development of the 3,276-acre site would result in similar soil erosion by wind and water during construction, given the Air Quality Monitors and related monitoring activity for the site versus the homebuilding not subject to similar stringent monitoring.
Soil erosion by wind and water during project operations	Home site development of the 3,276-acre site would result in similar soil erosion by wind and water during operations, given the Air Quality Monitors and related monitoring activity for the site versus the homebuilding not subject to similar stringent monitoring.
Water quality impacts from contaminated storm water runoff	Home site development of the 3,276-acre site would result in similar water quality impacts. In fact, home sites may result in more impervious surfaces and more non-point sources, such as residential motor vehicles, OHVs, and agricultural equipment (tractors and alike for the 20- to 40-acre home sites). Less than significant with implementation of BMPs.
Water quality impacts from storm damage	Home site development of the 3,276-acre site would result in storm water control issues.
Water quality impacts from power plant operations	<i>(Note: This category seems redundant with others above and below.)</i>
Water quality impacts from sanitary waste	Greater than project operations. Home site development of the 3,276-acre site would result in greater needs for sanitary sewer services than project operation. Homeowners would be able to install septic systems, given the lack of available third-party sewer service in the Charleston View area.
Potential impacts from onsite and offsite flooding	Home site development of the 3,276-acre site would result in similar onsite and offsite potential flooding impacts, given the LORS requirements to match pre and post-project water flows.
Potential to impede or redirect 100-year flood flows, as shown on Federal Emergency Management Agency maps	Home site development of the 3,276-acre site would result in similar potential impacts.
<b>Water Supply</b>	
Potential impacts on local wells	The 170 homesites would each have the right to sink domestic wells as a matter of right (ministerial permit to ensure that public health is protected by property constructed wells). Assuming 1 AFY per home site (which is conservative, given the likely water uses on 20- to 40-acre desert home sites), the No project Alternative



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<p style="text-align: center;"><b>Alternatives Appendix 2 Updated</b></p> <p style="text-align: center;"><b>“What Would Be Reasonably Expected To Occur In The Foreseeable Future If The Project Were Not Approved?”</b></p> <p style="text-align: center;"><b>170 Homesites, Wells, and Related Infrastructure Impacts</b></p> <p style="text-align: center;"><b>NO PROJECT ALTERNATIVE</b></p>	
<b>Environmental Effect</b>	<b>POTENTIAL EFFECTS OF THE “NO PROJECT ALTERNATIVE”</b>
	<p>has as a reasonably foreseeable consequence an additional 170 AFY of domestic water use in the Charleston View area (WATER SUPPLY-1, -2, and -3).</p> <p>Individual homeowners would not be required to obtain offsets of water at 1:1, as proposed for the HHSEGS project. Consequently, the No Project Alternative would likely result in both (a) an additional 170 AFY of use and (b) no 140 AFY offset at 1:1 as proposed by the project, given that they would have unlimited pumping rights as overlying California landowners in an un-adjudicated basin (WATER SUPPLY-1, -2, and -3).</p> <p>Individual homeowners would not be required to do any monitoring of wells, given that they would have unlimited pumping rights as overlying California landowners in an un-adjudicated basin (WATER SUPPLY-6).</p>
Potential impacts on local wells continued	<p>Individual homeowners would not be required to reimburse additional energy costs, given that they would have unlimited pumping rights as overlying California landowners in an un-adjudicated basin (WATER SUPPLY-7).</p> <p>Individual homeowners would not be required to install water metering devices; given that they would have unlimited pumping rights as overlying California landowners in an un-adjudicated basin (WATER SUPPLY-4).</p> <p>Individual homeowners would not be required to submit a Groundwater Level Monitoring, Mitigation, and Reporting Plan or monitor water levels in Nevada, given that they would have unlimited pumping rights as overlying California landowners in an un-adjudicated basin (WATER SUPPLY-6 and -8).</p> <p>Individual homeowners would not be required to develop a Groundwater Quality Monitoring and Reporting Plan, given that they would have unlimited pumping rights as overlying California landowners in an un-adjudicated basin (WATER SUPPLY-9).</p>
Potential impacts on groundwater basin balance	<p>The 170 homesites would each have the right to sink domestic wells as a matter of right (ministerial permit to ensure that public health is protected by property constructed wells). Assuming 1 AFY per home site (which is conservative, given the likely water uses on 20- to 40-acre desert home sites), the No Project Alternative has as a reasonably foreseeable consequence an additional 170 AFY of domestic water use in the Charleston View area (WATER SUPPLY-1, -2, and -3).</p> <p>Individual homeowners would not be required to obtain offsets of water at 1:1, as proposed for the HHSEGS project. Consequently, the No Project Alternative would likely result in both (a) an additional 170 AFY of use and (b) no 140 AFY offset at 1:1 as proposed by the project, given that they would have unlimited pumping rights as overlying California landowners in an un-adjudicated basin (WATER SUPPLY-1, -2, and -3).</p>

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<p style="text-align: center;"><b>Alternatives Appendix 2 Updated</b></p> <p style="text-align: center;"><b>“What Would Be Reasonably Expected To Occur In The Foreseeable Future If The Project Were Not Approved?”</b></p> <p style="text-align: center;"><b>170 Homesites, Wells, and Related Infrastructure Impacts</b></p> <p style="text-align: center;"><b>NO PROJECT ALTERNATIVE</b></p>	
<b>Environmental Effect</b>	<b>POTENTIAL EFFECTS OF THE “NO PROJECT ALTERNATIVE”</b>
	Individual homeowners would not be required to monitor wells, given that they would have unlimited pumping rights as overlying California landowners in an un-adjudicated basin (WATER SUPPLY-6).
Potential impacts on groundwater basin balance, continued	<p>Individual homeowners would not be required to install water metering devices, given that they would have unlimited pumping rights as overlying California landowners in an un-adjudicated basin (WATER SUPPLY-4).</p> <p>Individual homeowners would not be required to submit a Groundwater Level Monitoring, Mitigation, and Reporting Plan or monitor water levels in Nevada, given that they would have unlimited pumping rights as overlying California landowners in an un-adjudicated basin (WATER SUPPLY-6 and -8).</p> <p>Individual homeowners would not be required to develop a Groundwater Quality Monitoring and Reporting Plan, given that they would have unlimited pumping rights as overlying California landowners in an un-adjudicated basin (WATER SUPPLY-9).</p>

## BIOLOGICAL RESOURCES

### General Comments

Due to the length of the Biological Resources Section of the PSA and the number of comments, the Applicant is providing comments by subject area. The subject areas are basically in the order they are addressed in the Summary of Conclusions section of the PSA. However, all botany comments, with the exception of the General Comments below, are included as a separate Botany Section following Biological Resources for ease of review.

### Significance Criteria: “Method and Threshold for Determining Significance”

1. The PSA includes a section titled, “Method and Threshold for Determining Significance.” In this section, the PSA states as follows: “Thresholds for determining CEQA significance in this section are based on Appendix G of the CEQA Guidelines (CCR 2006) and performance standards or thresholds identified by the Energy Commission staff.” (PSA, p. 4.2-61.)

First, the PSA should recognize that Appendix G is a screening tool, not a method for setting thresholds of significance. Appendix G is typically used in the Initial Study phase of the CEQA process. Appendix G asks a series of questions. The purpose of these questions is to make a “Determination,” “To be completed by the Lead Agency”. That “Determination” is whether a project requires an EIR, a Mitigated Negative Declaration or a Negative

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Declaration. (See Appendix G.) Further, as the Governor's Office of Planning and Research stated, "Appendix G of the *Guidelines* lists a variety of potentially significant effects, but does not provide a means of judging whether they are indeed significant in a given set of circumstances."<sup>10</sup>

The answers to the Appendix G questions are not determinative of whether an impact is significant or less than significant. Instead, Appendix G is used to determine the type of CEQA document that should be prepared in the Initial Study phase. Appendix G does not set any thresholds of significance. (See Remy & Thomas, *Guide to the California Environmental Quality Act*, 11<sup>th</sup> ed, pp. 239-240.) The FSA should recognize the proper use of Appendix G.

Second, the PSA notes that the "Thresholds for determining CEQA significance in this section are based on \* \* \* performance standards or thresholds identified by the Energy Commission staff." This statement is vague. Precisely what does the PSA mean by a "performance standard" or "thresholds"? What are these thresholds? In what proceedings were these thresholds established? If these thresholds were not promulgated through a public process, under what authority are they being applied?

The PSA describes "Method and Threshold for Determining Significance" at page 4.2-61. Given the vague description of standards and thresholds developed elsewhere, it is imperative that the FSA identify with specificity exactly where the significance criteria applied were developed and why they are appropriate for use in analyzing the HHSEGS project.

### **Site Habitat Quality**

2. Language in the Biology Section of the PSA uses several terms and phrases that could mistakenly lead the reader to believe the site is fairly undisturbed, or that it has a large diverse wildlife population. The section uses such terms as the site "features minimal grading", contains "good quality habitat", and "The project site also includes a small area of disturbed habitat." This is not an accurate reflection of the existing disturbance and network of graded roadways that exist on site. The PSA references "19 acres of disturbed habitat" on site, as referenced in the initial HHSEGS AFC submittal. This figure has been recalculated and there are approximately 61 acres of existing dirt roads on site and 16 acres of orchard and other disturbed areas. Beyond the existing site disturbance, the site harbors an extensive weed infestation including a minimum of 11 different weed species dispersed throughout the project site. The PSA acknowledges the variance in quality tortoise habitat with the recommendations of 1:1 in some areas; however, some of the weed infestations on site render existing conditions unsuitable for supporting desert tortoise in many areas, and thus do not warrant replacement through mitigation. A more accurate and reflective representation of the site's current condition is warranted in the FSA.

### **Nelson's Bighorn Sheep**

3. The conclusion that the project site is a corridor for bighorn sheep is not supported by any reliable evidence. The report of pellets, if correctly identified, would indicate only that an individual may have briefly passed over the site. The lack of additional pellets indicates that

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Available at <http://ceres.ca.gov/ceqa/more/tas/Threshold.html>.

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bighorn sheep presence is very rare. Otherwise, many more pellet groups would have been found on the large site since each sheep produces 13 to 15 pellet groups per day. The discovery of one pellet group on 3,932 acres supports the rarity of use rather than establishing it as a corridor.

The presence of a horn fragment raises the question of whether the individual was seriously injured, since horns are not shed like antlers. A horn fragment would be lost only by a serious injury or as remains of death. It is unclear how a horn fragment would be lost in this open area, given the lack of other remains. It is more likely that the fragment was transported to the site by humans, scavengers or water movement.

Anecdotes of bighorn sheep presence on the project site were presented in workshops without any supporting documentation. These accounts are of dubious value and credibility. They contradict the published scientific accounts of bighorn sheep behavior. Additionally, they contradict the professional advice of bighorn sheep biologists at BLM and Nevada Department of Wildlife and US Geological Survey as recorded in records of contacts in the case files.

#### **Desert Tortoise**

4. As stated in the AFC, "The HHSEGS Site has been previously disturbed and developed. The roads for the housing subdivision slated for the HHSEGS site are clearly visible on Google Earth™. The only plant or wildlife species present that is protected by either the Federal Endangered Species Act ("ESA) or the California Endangered Species Act ("CESA") is the Desert Tortoise (*Gopherus agassizii*): Only two live tortoises were observed onsite during protocol-level surveys." (AFC, P. 5.2-20.)

The facts regarding desert tortoise are not in dispute. The only remaining question concerns the appropriate compensatory mitigation ratio or ratios, given the nature and quality of the potential habitat at the HHSEGS site impacted by the proposed project.

As discussed at the June 27th PSA workshop in Bishop, CA, the Applicant has been reviewing the desert tortoise compensation ratios proposed by staff. For further discussion on this topic, the Applicant submitted its proposed approach for desert tortoise compensation in the Applicant's "Preliminary Staff Assessment Comments, Set 1," filed and served on July 13, 2012.

The Applicant understands that the Staff will review these materials and continue a productive dialogue on mitigation ratios. The Applicant appreciates the Staff's hard work to date and its willingness to review the information compiled by the Applicant's desert tortoise experts.

Regarding Desert Tortoise translocation, in response to agency comments and recommendations, the Applicant agreed to advance a proposal for the relocation of desert tortoise captured onsite to a strip of private land (which varies between 2 to 6 feet wide) between the edge of the dirt trail (generally referred to as stateline road) adjacent to the California-Nevada stateline and the actual stateline. A revised Desert Tortoise Translocation Plan will be submitted in August 2012.

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**Common Wildlife and Plants: Non-Threatened, Non-Endangered<sup>11</sup>**

5. The PSA treats non-threatened and non-endangered animals and plants as if they are listed under the Federal ESA and CESA. The PSA variously refers to certain plant and animal species as “rare,” “sensitive,” “important,” California Species of Special Concern (CSC), or, generically, as “special status” plant and animal species. These terms are imprecise and misleading. These are not species protected or “listed” under ESA or CESA (“non-listed species”).

The effect of referring to these non-listed species as “special status” improperly intermingles non-listed species mitigation with listed species mitigation. In simplest terms, while there are arguments that may be made for additional mitigation under CEQA for non-listed species, the Committee must be wary of attempts to “bundle” mitigation of (1) non-threatened, non-endangered, non-listed species with (2) federal and state endangered species act mitigation requirements. These two concepts are legally distinct.

As one example, Biological Resources Table 9, “Biological Resources Compensatory Mitigation Summary of Compensation Lands Costs,” lumps together (a) Desert Tortoise mitigation requirements with (b) non-listed species compensation requested by Staff for Burrowing Owl, state waters, and special status plants.

For non-listed species “CEQA establishes a duty for public agencies to avoid or minimize environmental damage where feasible.”<sup>12</sup> When making required findings, the agency must consider whether the proposed project with implementation of mitigation measures will “avoid or substantially lessen” the significant environmental effects of the project.<sup>13</sup> These determinations must be supported by substantial evidence in the record.<sup>14</sup> Neither ESA nor CESA legal authorities are applicable to such non-listed species of plants or animals. The FSA should clearly distinguish between listed and non-listed species and not bundle mitigation measures for both.

The net effect of bundling listed species issues with non-listed species issues is to create the impression that the project has greater potential impacts to biological resources than it will have in reality. ESA and CESA contain additional legal requirements for listed species, such as the granting of incidental take authority for permitted activities that only applies to ESA and CESA listed species. These same ESA and CESA legal obligations simply do not apply to non-listed species. By bundling listed and non-listed species into a single “special status” category, the PSA blurs the significant distinction the law draws between listed and non-listed species. This homogenization could create the erroneous impression that listed

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<sup>11</sup> As used in these comments, the term “special-status” species does not mean listed as threatened, endangered or candidate species under the federal ESA or CESA, and has no relationship to the legal status of any particular species. Instead, the term “special-status” species is a more expansive term, employed by some agencies as an administrative designation. The term “special-status” is used by Applicant to reflect the terminology used by the agencies.

<sup>14</sup> C.C.R. § 15021

<sup>14</sup> C.C.R. § 15091

<sup>14</sup> CCR 15384; See also Public Resources Code, Sections 21080, 21082.2, 21168, and 21168.5.

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species and “special status” species are one in the same. As a matter of law, listed species and non-listed species are very different. The FSA should clearly delineate between (1) listed species subject to treatment under ESA and CESA and (2) all other non-listed species, subject to treatment under CEQA.

6. Under CEQA, a species not listed as endangered, threatened or a candidate species may be considered “rare” if the species can be shown to meet the criteria in subdivision (b) of Section 15380 of the CEQA Guidelines. Specifically, Section 15380(b)(2)(A) provides that plant species may be considered rare if, “[a]lthough not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens”. Similarly, Section 15380(b)(2)(A) provides that plant species may be considered rare if “The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered “threatened” as that term is used in the Federal Endangered Species Act.”

Most importantly the PSA cannot simply assume that a species is “rare.” Instead there must be a specific showing that the species meets the criteria set for in Section 15380.

To bring the species under Section 15380, there must be substantial evidence that the species exists in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens. Without such a showing supported by substantial evidence, it is improper to merely presume that it may become endangered or to treat the unlisted species in the same manner as if it were listed. The FSA should not describe any species as endangered, threatened or rare, unless the FSA also offers substantial evidence, and not speculation, that the species is “existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens”.

### **Special-Status Plants**

7. There are no ESA and CESA listed plants on the HHSEGS site. However, the PSA states that the following plants meet the CEQA Definition of “rare”: *Acleisanthes nevadensis* [*Selinocarpus nevadensis*] (desert wing-fruit), *Androstephium breviflorum* (pink-flowered androstephium), *Astragalus nyensis* (Nye milk-vetch), *Astragalus preussii* var. *preussii* (Preuss' milk-vetch), *Astragalus sabulonum* (gravel milk-vetch), *Astragalus tidestromii* (Tidestrom's milk-vetch), *Chaetadelpa wheeleri* (Wheeler's skeletonweed), *Cymopterus multinervatus* (purple-nerve spring parsley), *Ephedra torreyana* (Torrey's Mormon-tea), *Eriogonum bifurcatum* (Pahrump Valley buckwheat), *Phacelia pulchella* var. *gooddingii* (Goodding's phacelia). As discussed below, the Applicant does not agree that these plants necessarily meet the CEQA definition of “rare”.

Plants that are not rare as defined by CEQA are subject to the general provisions of CEQA, but they enjoy no “special status” in the eyes of the law; these plants are neither endangered, threatened, rare, listed under the federal or state endangered species acts, nor are they candidates for such lists. The FSA's analyses of plant issues should focus on the legal definition of “rare,” as set forth in CEQA Guideline 15830, and not the non-legal colloquialisms sometimes assigned by other parties. “Special status,” “Species of Special Concern Species,” and often just “sensitive” species are all terms without legal significance.



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To the extent that such terms are used in the PSA to suggest that non-listed species should be accorded listed species treatment, such use is arbitrary, capricious, misleads the public and the decisionmakers and should not be used in the FSA.

“Rare” plants are not protected by CESA which focuses on endangered, threatened, and candidate species. The designation of a species as “rare” has legal significance under CEQA; however, to be afforded this additional protection, the plant species must meet the legal definition of “rare” under CEQA on the basis of substantial evidence. As discussed herein, under CEQA, a species not listed as endangered, threatened or a candidate species may be considered rare only if the species can be shown to meet the criteria in subdivision (b) of Section 15380 of the CEQA Guidelines.

Specifically, Sections 15380(b)(2)(A)&(B) provide that plant species may be considered rare under limited circumstances: the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens or is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered “threatened” as that term is used in ESA.

Thus, by definition, for a plant to be considered “rare” under CEQA, it must, among other things, be potentially adversely affected throughout all or a significant portion of its range. However, the PSA cannot simply assume that the criteria in Section 15380 are satisfied. There must be a demonstration based on substantial evidence that the required showing has been made to categorize the species as rare. The PSA does not make such a showing.

8. The PSA lists two “Significance Criteria” applicable to “special status plants”:
- a substantial adverse effect to plant species considered by the California Native Plant Society (CNPS), CDFG, or USFWS to be rare, threatened, or endangered in California or with strict habitat requirements and narrow distributions; a substantial impact to a sensitive natural community (i.e., a community that is especially diverse; regionally uncommon; or of special concern to local, state, and federal agencies);
  - a substantial adverse effect to wildlife species that are federally-listed or state-listed or proposed to be listed; a substantial adverse effect to wildlife species of special concern to CDFG, candidates for state listing, or animals fully protected in California (PSA, p. 4.2-61.)

However, the PSA does not cite to any authorities for these significance criteria. The FSA should identify with specificity and citation to authority the legal basis for these criteria related to special status plants.

CEQA requires more than an assumption that a non-listed species may have a “narrow distribution” or that it may be of “concern”. There must be a specific and express finding, supported by substantial evidence in the record that “the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens.” The FSA should analyze the plant species found on the HHSEGS

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site against these criteria, rather than relying on (1) CNDDDB (NatureServe) Global Rank/State Rank and (2) California Native Plant Society list, as discussed next below.

9. The PSA lists certain plants as “special status” in Biological Resources Table 3, “Special-status Plant Species Known to Occur or Potentially Occurring in the HHSEGS Area.”

It appears that the PSA is using two different data sources to make its determination that a plant is “rare.” Biological Resources Table 15, “Special-status Plant Species in the Project Area and Offsite,” appears to rely on two resources: (1) CNDDDB (NatureServe) Global Rank/State Rank and (2) California Native Plant Society list.

The CNDDDB process is well-documented in the PSA, though the reliance on NatureServe to access CNDDDB information is new. In marked contrast, the California Native Plant Society list process is not well-described.

According to the California Native Plant Society web site, “In the spring of 2011, CNPS officially changed the name “CNPS List” to “California Rare Plant Rank.” The definitions of the ranks and the ranking system have not changed, and the ranks are still used to categorize the same degrees of concern, which are described as follows:...”<sup>15</sup>

The California Rare Plant Rank itself includes the following footnote explanation: “In March, 2010, DFG changed the name of ‘CNPS List’ or ‘CNPS Ranks’ to ‘California Rare Plant Rank’ (or CRPR). This was done to reduce confusion over the fact that CNPS and DFG jointly manage the Rare Plant Status Review groups (300+ botanical experts from government, academia, NGOs and the private sector) and that the rank assignments are the product of a collaborative effort and not solely a CNPS assignment. The old name gave the false impression that CNPS solely assigned the ranks and had excessive influence on the regulatory process. \* \* \*”<sup>16</sup>

The California Rare Plant Rank decision making and plant ranking process is not transparent, and the Applicant has not been afforded a reasonable opportunity to assess whether the ranking and decisions are supported by sufficient evidence.

The FSA needs to explain to the public exactly how plants are nominated, placed upon these listed, ranked, and sometimes re-ranked on the California Rare Plant Rank. The FSA should provide a detailed explanation of the California Rare Plant Rank:

- Who participates in the California Rare Plant Rank process? What qualifications, if any, are required? Can the general public participate?
- How do they participate? What is the public process for creation of the California Rare Plant Rank? How are plants submitted for consideration? What are botanists’ obligations, if any, to participate?

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<sup>15</sup> <http://www.cnps.org/cnps/rareplants/ranking.php>.

<sup>16</sup> <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPPlants.pdf>

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- Public review and comment: is public review and comment allowed? Are there public comment periods for listing a plant? Changing the rank of a plant?
- Must plants listed as “rare” in the California Rare Plant Bank meet the criteria for “rare plants in Section 15380(b)(2)(A) of the CEQA guidelines?

Given the PSA’s heavy reliance on the California Rare Plant Rank, CEQA requires that the FSA inform the public and the decision makers as to how the list is created.

10. Condition BIO-19 requires protections for special status plants that occur off-site: “BIO-19 requires avoidance and minimization measures during life of project to protect occurrences in close proximity to the project.” (PSA. P. 4.2-64; emphasis added.)

This Condition attempts to control events and actions that will occur in off-site areas. The Commission’s jurisdiction is limited to the site and related facilities (Public Resources Code Section 25500 *et seq.*) As a matter of law, the Commission cannot condition activities beyond the boundaries of the project site and or the site of the related facilities. As a practical matter, “off-site” would be either in Nevada, on BLM lands to the north or on private lands in California which are not under the control of the Project Owner. Neither the Applicant nor the Commission can control activities off-site. This Condition should be deleted.

11. Condition BIO-20 requires compensatory mitigation for special status plants: “BIO 20 requires compensatory mitigation for onsite occurrences through acquisition and preservation offsite at a ratio of 3:1 and 2:1. Pending results of the spring 2012 surveys, onsite avoidance may be recommended if there are insufficient opportunities for offsite mitigation If avoidance is infeasible, a conclusion of significant and immitigable impacts may be made.” (PSA, p. 4.2-64.)

The Condition includes mitigation ratios as high as 3:1, but does not explain the bases for such ratios. Instead, BIO-20 references NatureServe Ranks, requiring “a ratio of 3:1, based on the number of occurrences affected, for NatureServe state rank 1 plants (S1), and a 2:1 ratio for state rank 2 plants (S2).” No explanation is provided as to why NatureServe Rankings are used, and no explanation is given for why an S1 ranking merits a 3:1 ratio. The FSA should explain the legal basis for the mitigation compensation ratios

12. Condition BIO-21 calls for the creation of a wholly new on-site staff position, the “Designated Botanist”. To begin, there is no showing of any need for a wholly new staff oversight function dedicated solely to Botany. As the experience at Ivanpah has shown, to the extent botany issues arise on site, the Applicant and Staff’s trained Biologists are equipped and available to address botanical issues. Moreover, the HHSEGS project will not employ rings or “haloes” around certain plants. There is no need for a designate Botanist, given these facts. This Condition should be deleted.

## **Burrowing Owl**

13. Consistent with the concerns expressed above about elevating non-listed species to be on-par with listed species, the PSA treats Burrowing Owl as if they are protected by CESA or ESA. They are not.

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As discussed above, under CEQA, a species not listed as endangered, threatened or a candidate species may be considered “rare” if the species can be shown to meet the criteria in subdivision (b) of Section 15380 of the CEQA Guidelines. To bring the species under Section 15380, there must be substantial evidence that the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens.

Without such a showing based on substantial evidence, it is improper to treat non-listed species such as the Burrowing Owl as if it was a listed species. In this case, there is no substantial evidence to support the conclusion that the Burrowing Owl species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens.

As just one indicator of the health of Burrowing Owl across its range, the Commission need only look to the number of cases before the Commission where Burrowing Owl have been encountered. Burrowing Owl have been encountered in Commission certified projects in northern California, southern California, the California coast, the Central Valley, the coastal foothills, the valley foothills and in the desert. Indeed, it is highly probable that the Burrowing Owl has not become a candidate species under CESA precisely because of the abundance and the great range, as evidenced by Burrowing Owl activities at CEC-approved project.

The 600 acres of Burrowing Owl mitigation lands requested by the PSA is unprecedented. The PSA does not cite any precedent for this type or level of mitigation in other siting proceedings.

## **Groundwater Dependent Vegetation**

14. As a threshold matter, the PSA needs to define exactly what it means by “groundwater dependent vegetation”. The PSA does not specify precisely which plants and vegetation are considered “groundwater dependent vegetation.” The FSA should state with specificity the groundwater dependent species at issue and also reflect the Applicant’s information on the lack of significant groundwater effects associated with the minimal water usage by the HHSEGS project.

15. The PSA focuses on potential impacts on Groundwater Dependent Vegetation in Nevada: “Project-related groundwater pumping during construction and operation would result in a drawdown of the water table , which may adversely affect nearby mesquite woodlands , mesquite dune scrub, and active springs, including the Nevada Bureau of Land Management Stump Spring Area of Critical Environmental Concern (ACEC) .” (PSA, p. 4.2-7)

Any discussion of the impact on resources in Nevada should be deleted from the PSA, because these impacts are outside the scope of CEQA, as discussed above. (14 CCR 15380).

16. The PSA requires the HHSEGS’s project to both monitor groundwater levels with precision that is not possible and, ultimately, to shutdown if groundwater modeling shows a decline in groundwater levels. This requirement is unprecedented and will make the project unfinanceable and thus unbuildable.

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17. Condition BIO-23 requires groundwater monitoring at a scale that is astounding. The Applicant is required to monitor (a) east of the project site, which is wholly in Nevada; (b) in Nevada at the BLM Stump Spring ACEC; and (c) at other locations at “offsite reference plots.” BIO-23 includes a purported new significance threshold that is both new and facially arbitrary: “‘Less-than-significant effect’ shall be defined as less than 20 percent change from the baseline condition or values in any of the vegetation attributes monitored that indicates a decline in the health of the mesquite and other groundwater-dependent species.” Further, the Condition requires, “remedial action” if water levels drop by six inches (0.5 feet) in an area where the water table can vary by several feet annually due to normal variations in seasonal rainfall. BIO-23 continues on for six full pages, adding prescriptive layer upon prescriptive layer of out-of-state monitoring related requirements.
18. Condition BIO-23 is to be coordinated with Condition BIO-24. Bio-24 calls for “Remedial Action.” Remedial Action is synonymous for “shut down” of the project. BIO-24 includes two separate requirements for shutting down the project in the space of two paragraphs:

If monitoring detects project-related impacts to any groundwater dependent ecosystems (GDEs) that meet or exceed the [6-inch] thresholds, the project owner shall determine which project well(s) are the source of the impact and stop pumping, modify or reduce pumping at that well(s) as necessary to restore the groundwater elevation to pre-threshold levels. (BIO-24, p. 4.2-39.)

Accordingly, the project will be required to shutdown if there is a 6-inch drop in water levels in a water table that can vary – naturally – more than 6 feet.

Similarly, BIO-24 calls for both the further acquisition of Nevada-based water rights and the shutdown of the project, for a second time:

If monitoring, as described in WATER SUPPLY-6, indicates that project-related groundwater elevations continue to decline before they begin to rise back to pre-threshold levels, even after pumping has stopped, the project owner shall compensate for the temporal decline in ecosystem health by a Water Use Offset Plan, and according to the guidelines and performance standards for offsets described in WATER SUPPLY-2. The acquisition of water rights is required in addition to –not as an alternative to–stopping, reducing or modifying pumping. (BIO-24, p. 4.2-39.)

The shutting down of the project for a 6-inch drop in regional water levels – all measured in Nevada – is both contrary to CEQA’s exemption related to Nevada’s based resources and will result in the project being un-financeable and thus un-buildable. These conditions should be deleted.

## **Desert Washes/State Waters**

19. The acreages of State Waters, including Waters of the United States are incorrect throughout the document. According to the Preliminary Delineation of Jurisdictional waters of the State (URS, 2012), a total of 23.82 acres of jurisdictional waters of the State, were delineated. Of these, 0.42 acres are also waters of the United States. Based on discussions with CDFG and RWQCB staff, it is expected that the total acreage of onsite Waters of the

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State will be revised to eliminate drainage features mapped within maintained roads. After removing drainage features and a pooling area within maintained roads, the revised Waters of the State acreage on the HHSEGS site is estimated at 20.08 acres, which represents less than 1 percent of the total project acreage. Most onsite ephemeral drainages are shallow and less than 5 feet wide, thereby providing little if any wildlife habitat functions.

There is a significant factual error in Condition BIO-22 related to acreages of waters of the State. (For other incorrect citations to the acreages, see also, for example, PSA, p. 4.2-6; Biological Resources Table 2, p. 4.2-18; p. 4.2-45, and p. 4.2-63.) As stated above, Condition BIO-22's numbers are incorrect. Assuming the Condition is not deleted, the correct acreages should be applied.

20. In general, the PSA overstates the HHSEGS project's potential effects on desert washes and the mitigation requested by the PSA is inappropriate. The requested mitigation and the high mitigation ratios are not supported by the record and must be rejected.

As a factual matter, the Waters of the State that exist on site will continue to exist once the project is constructed. Specifically, the Applicant's design, utilizing pylons to support heliostat as opposed to grading and leveling of more earth-moving intensive construction techniques means these acres of state water are not "lost." Outside the permanent structures within the power blocks, no acre will be "lost" or need to be replaced because they still exist and function as a result of the project's design.

The Lake and Streambed Alteration (LSAA) process is intended to protect "fish and wildlife resources." Indeed, Section 1600 of the Fish & Game Code begins with this statement: "The Legislature finds and declares that the protection and conservation of the fish and wildlife resources of this state are of utmost public interest." (Emphasis added.) The phrase "fish and wildlife resources" is repeated in Sections 1600, 1602, 1603, 1605, 1614, and 1615. Clearly, the LSAA process is focused on impacts to "fish and wildlife resources."

There must be a link to fish and wildlife resources. In this case, it is undisputed that there are no fish on the HHSEGS site. In fact, these are desert washes; there is only occasionally water on site as a result of precipitation – rain. Since there are no fish, the only possible jurisdictional connection to the HHSEGS site with regards to the LSAA Agreement Process would be "wildlife."

However, contrary to the focus on "fish and wildlife" resources in the Fish & Game Code, Staff has instead focused the recommendation on plants:

BIO-22 requires acquisition of compensation lands within Pahrump Hydrologic Unit at a 2:1 ratio for vegetated washes. Indirect effects to 4.51 acres shall be mitigated at 0.5:1 ratio. The rare desert wash community, creosote bush-galleta grass association, if present would be mitigated at a 2:1 ratio. (PSA, p. 4.2-63; emphasis added,)

The PSA states that the biological value it seeks to protect via its proposed BIO-22 is plant life. Instead of focusing on "fish and wildlife", the PSA focuses on plants. Active desert washes here are often devoid of any plant life; washes that have not channeled flow in the recent past seldom evidence any plant growth in excess of the areas around them. Botany



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does not fall within the LSAA requirements related to protection of “fish and wildlife resources.” The PSA’s reliance on botanical values in desert washes is not based in law and must be rejected. BIO-22 should be deleted in its entirety.

**Migratory/Special Status Resident Avian Species/Golden Eagles**

21. The PSA correctly notes the “ongoing coordination with CDFG and USFWS, and receipt of data responses for the Rio Mesa Project will inform conclusions presented in the FSA.” (PSA, p. 4.2-64.) A joint HHSEGS-Rio Mesa workshop has been scheduled for August 8, 2012.

While some parties to this proceeding are particularly interested in the new additional information that will be forthcoming and the dialogue between the parties at the August 8<sup>th</sup> Staff workshop, it is important that the FSA catalogue and properly note the substantial evidence that is already in the record on Avian issues.

Applicant notes that it submitted a Golden Eagle Survey plan in November 2011, which contained proposed survey lengths, procedures, and protocols for golden eagle surveys.

None of the agencies requested any changes to the Golden Eagle Survey plan. In addition, Applicant submitted a summary of the bird surveys conducted to date, including golden eagle surveys, to USFWS in January 2012. Applicant also submitted in March 2012, avian point count and golden eagle survey results from December 2011 and January 2012. To date, the Applicant has not received any agency comments on either submittal.

22. As Staff has noted, the Rio Mesa project filed the “Golden Eagle And Avian Risk Characterization Of The Rio Mesa Solar Electric Generating Facility, Riverside County, CA” (the “Avian Risk Characterization” or “ARC”) <sup>17</sup> While Rio Mesa is a separate proceeding, it is the Applicant’s understanding that the CEC Staff received the study and is relying upon that study’s information for the PSA and the FSA.

The ARC closely analyzes the “McCrary Study” related to the Solar One facility near Daggett, California: McCrary, M.D., P.H. Bloom, and M.J. Gibson. 1992. Observations on the behavior of surplus adults in a Red-shouldered Hawk population. J. Raptor Res. 26:10-12. The ultimate finding of the McCrary Study was that the potential effects on avian species associated with the Solar One power tower facility were considered was that “the impact on the local bird population is considered minimal.” (Id., p. 140.)

The ARC also notes substantial difference between the older Solar One facility design and the Power Tower technology employed at HHSEGS. First, Solar One used several types of heliostats, most of which were large and had multiple mirrors (510ft<sup>2</sup>) and reached as high as 26.5’ above grade. These heliostats are substantially larger than the heliostat mirrors proposed for HHSEGS: “Each heliostat array is composed of two mirrors approximately 12 feet high by 8.53 feet wide with a reflecting surface of 204.7 square feet.” (AFC, p. 5.13-20.) According to the McCrary study, over eighty percent of avian mortalities were from collisions with these large tall mirrors. Given the substantially smaller heliostats for HHSEGS

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See the Rio Mesa Docket Log, Docket Number 64161, dated 03 / 14 / 2012. Available on the CEC website at the following link: [http://www.energy.ca.gov/sitingcases/riomesa/documents/applicant/2012-03-14 Applicants Reply Brief for March 19 Status Conference TN-64161.pdf](http://www.energy.ca.gov/sitingcases/riomesa/documents/applicant/2012-03-14%20Applicants%20Reply%20Brief%20for%20March%2019%20Status%20Conference%20TN-64161.pdf)

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as compared to Solar One, the collision impacts, found to have a “minimal” effect on the local bird population at Solar One, will be even smaller with HHSEGS’s smaller mirror design.

Similarly, Solar One was situated directly adjacent to irrigated farm land and had approximately 126 acres of un-netted (open) evaporation ponds directly adjacent to the solar field. According to the McCrary study, these ponds and the adjacent irrigated farm land attracted significant avian activity to the Solar One project site. (ARC, p. 5-4.) In marked contrast, HHSEGS is not located near plenary irrigated agricultural lands, and the HHSEGS project will not have any evaporation ponds. Thus, HHSEGS’s design avoids this contributor to the avian risk at Solar One that was, nevertheless, determined to be minimal at a population level.

As the ARC concluded: “Solar One was an early application of the tower technology and accordingly was a research and development project as well as an operating plant. When not directed at the boiler, Solar One’s heliostats focused on two fairly small standby points, creating two high-concentration solar flux points that, according to McCrary, were responsible for the singeing of small birds. Our current control technology is much more sophisticated and efficient, which allows us to focus heliostats in a ring consisting of a much lower concentration flux standby zone when not focusing on the SRSR. This significantly reduces the amount of energy in any one point, decreasing the likelihood of harm to birds. This low flux ring has not resulted in any documented bird mortality to date (see Photos Section of this report).” (ARC, p. 7-2.)

At one-third the intensity of Solar One’s standby points, the potential effects of HHSEGS’ low flux ring will be less than the minimal impact seen at Solar One.

The ARC includes this important conclusion:

Based on observations at working power tower facilities around the world, it is unlikely that BrightSource’s facilities employing its current version of concentrating solar power technology will have a substantial impact on birds. Solar boilers are designed to absorb energy, not to reflect it, and that while the boiler shines bright, it is designed to significantly reduce heat loss, which results in elevated temperatures across only a small air space close the SRSR surface. The area of significant solar flux concentration, where reflected sunbeams converge, is also a very small. Portion of the total airspace above the developed area of the project from ground level to 760’(the tallest part of the towers). Finally, while heliostats at Solar One extended over 26 feet above the ground, the mirrors at [HHSEGS and] Rio Mesa SEGF will reach approximately half that height.” (ARC, p. 7-1.)

23. In addition to the ARC, there are a number of HHSEGS’s Data Responses on Avian issues. These Data Responses also provide substantial; evidence related to the lack of significant impacts associated with the HHSEGS solar tower technology, in general, and avian flux elated issues, in particular.<sup>18</sup>

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Applicant's Data Responses Set 1B and Set 2D-2 are available on the CEC's website at the following:  
<http://www.energy.ca.gov/sitingcases/hiddenhills/documents/index.html#applicant>

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- a. Data Response 57, Set 1B: Please provide staff data (developed using Pro E, Solid Works or other equivalent 3D modeling package) showing ambient temperature data for heat emitted from each tower over a 24-hour period. The data should reflect the average temperature of each quarter day, and factoring in seasonal weather changes (4 Models) over a 24-hour period at specific heights and distances from the tower. Example: Q1 if average temperature is a high of 80 and a low of 34. Based on 1-hour intervals, state the temperature at the top of the tower, and extending outward at reasonable, regularly occurring heights and distances. Please provide staff both a model and to-scale renderings shown in top down and side view.
- b. Data Response 158 , Set 2D-2: Please provide a discussion of the operating profile on a seasonal and daily basis. Information provided should detail: a. the amount of time spent in each of the three operating positions for both daily and seasonal operation; b. a description of the location of heliostats expected to be in each position (for example in the eastern region of solar field 1), represented by sample maps (for both daily and seasonal operations); and, c. the number of heliostats projected to be in each position (both daily and seasonal operation).
- c. Data Response 159, Set 2D-2: Please describe the height of focused reflectance by heliostats during stand-by position and factors used in determining the position of the stand-by positions.
- d. Data Response 160 , Set 2D-2: Describe the operating parameters in altering the number, location, or duration of heliostats in stand-by position relative to the likely seasonality of use of stand-by position. Staff believes that reduced solar insolation during winter and spring may coincide with avian migration, and understands that the stand-by position is utilized more often during periods of diminished solar insolation. Please describe the feasibility of implementing an adaptive management approach to minimize potential adverse affects to birds from solar energy, and the measures that might be employed as part of an adaptive management program.
- e. Data Response 161 , Set 2D-2: Please provide four diagrams in profile view of reflected solar flux, each should be modeled at 100% of project output. The diagrams must depict clearly, in kW/m<sup>2</sup>, solar flux from power tower to heliostats. Please provide a diagram for reflected solar flux from heliostats at the following four locations: closest to power tower 1, furthest from power tower 1 (approximately 7,700 feet), closest to power tower 2, and furthest from power tower 2 (approximately 6,500 feet). Please also clearly indicate linear distance encompassed by each zone of flux, in meters.
- f. Data Response 162 , Set 2D-2: The plan view of the flux map prepared for the proposed Rio Mesa Solar Project (BrightSource Energy presentation at January 6, 2012 staff workshop, tn 63357, page 26), specifies a flux pattern at a certain wind condition, *e.g.*, 7 m/sec (15 mph). Shape indicates that wind effect acts to compress the area of influence. Conversely, still air conditions would extend the area of influence. Please confirm that the plan and elevation views represent the same wind conditions and provide the respective profiles for still air. Please indicate if these profiles represent conditions

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consistent with Applicant's attachments [figures] DR57-2, DR57-3 and DR57-4 (provided as part of applicant's response to Data Request #57) discussed below.

- g. Data Response 163 , Set 2D-2: Please discuss the possibility of preventing bird collisions with heliostats by randomizing the angle of heliostats during sleep position. Discuss any glint/glare effects this operational approach might have on other sensitive human or wildlife receptors, and whether (and how) identified impacts could be mitigated or minimized, and in what fashion.
- h. Data Response 164 , Set 2D-2: Please provide the name of the model used to generate data outlined in Data Response #57 (part of Applicant's Data Responses, Set 1B, tn 63056, filed on 12/5/2011).
- i. Data Response 165 , Set 2D-2: Please confirm the accuracy of the data presented in Attachment DR57-4. Please also provide a description of assumptions used in creating this data, and explain the X axis variables, "Eva panels" and "SH panels". The steam cycle in AFC Figure No: 2-4-1 specifies a requirement for generating steam to a superheat of 585°C (1,085°F) and Figure DR57-4 shows a surface temperature of 425°C (887°F) at the SH panels and 325°C (617°F) at the Eva panels. Recognizing that the saturated steam temperature at 100 bar (1,460 psia) is 311°C (592°F), please demonstrate how heat transfer up to the superheated condition is attained. Please consider performing a heat balance on the solar cycle similar to the conventional steam cycle heat balance. Include absorbance, transmittance and reflectance factors for the heliostats and tower receiver, effective collector and receiver areas, and design basis solar insolation and intensities that deliver 270 MW to the steam generator.
- j. Data Response 167, Set 2D-2: Please identify the solar flux tolerance thresholds where birds may be injured or singed in any capacity (vision, skin, plumage damage, or other impact).
- k. Data Response 168, Set 2D-2: Provide a discussion of predicted fatality rates for each species or species group over the life of the project, based on determined tolerance thresholds. Provide predicted fatality rates for each special status species potentially occurring in the area, as well as for passerines and raptors. Describe how flight speed, surface area-to-volume ratio, and plumage color would affect avian species known to occur and/or migrate over the site, as well as any other variables that could affect fatality rates. Please also describe the predicted rates of non-fatal injuries for each special status species potentially occurring in the area, as well as for passerines and raptors.
- l. Data Response 169, Set 2D-2: Provide a discussion of how seasonal variation and weather conditions might affect fatality rates. Discuss how seasonal variations and weather conditions could affect these non-fatal injury rates.
- m. Data Response 170, Set 2D-2: Provide a discussion of fatality rates compared between breeding and non-breeding seasons, and discuss the degree of accuracy in the predicted fatality rates. Please also provide a discussion of how non-fatal injury rates would be

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expected to compare between breeding and nonbreeding seasons, and discuss the degree of accuracy in the predicted non-fatal injury rates.

24. It is important to put potential avian issues in context. The technology used at HHSEGS would have far lower avian issues than those associated with wind turbines, for example. A recent study by the U.S. Department of Energy's National Renewable Energy Laboratory includes the following conclusions related to anthropomorphic, or human causes of bird mortality:

"As Figure 5-2 shows, anthropogenic causes of bird fatalities range from 100 million to 1 billion annually. Currently, it is estimated that for every 10,000 birds killed by all human activity, less than one death is caused by wind turbines. In fact, a recent National Research Council (NRC 2007) study concluded that current wind energy generation is responsible for 0.003% of human-caused avian mortality. Even with 20% wind energy, turbines are not expected to be responsible for a significant percentage of avian mortality as long as proper precautions are taken in siting and design." ("20% Wind Energy by 2030, Increasing Wind Energy's Contribution to U.S. Electricity Supply," DOE/GO-102008-2567, July 2008.)<sup>19</sup>

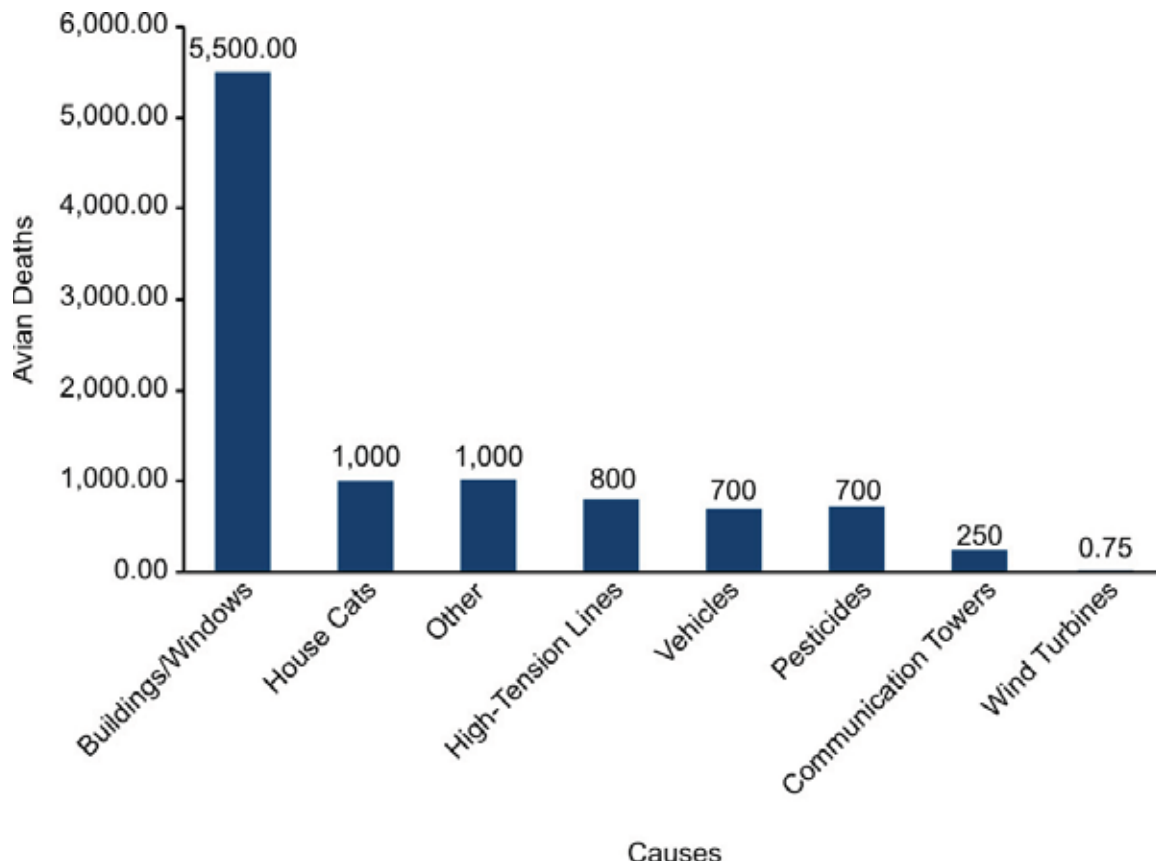
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Available at: <http://www.nrel.gov/docs/fy08osti/41869.pdf>.

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Figure 5-2 from that same report provides some perspective:

**Figure 5-2. Anthropogenic causes of bird mortality**  
(per 10,000 avian deaths)



**Desert Kit Fox:**

25. The Desert Kit fox is a common species that is not listed as threatened or endangered under either ESA or CESA. (The Desert Kit Fox is not the same species as the San Joaquin Kit Fox, which is a listed species.)

The Desert Kit Fox is subject to a fur-trapping prohibition. Fur trapping activities are irrelevant to any activities at the HHSEGS site. Of course, the Applicant will abide by reasonable, CEQA-based avoidance and mitigation measures associated with the Desert Kit Fox; however, any suggestion of “full protection” or CESA protection for the non-listed Desert Kit Fox should be deleted.

The FSA should reflect the fact that given that HHSEGS will not be engaged in any fur trapping activities or trade, Section 460 of the California Code of Regulations (14 CCR 460) does not provide any protections related to Desert Kit Fox.

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**Specific Comments**

**LORS**

26. Page 4.2-10, Northern and Eastern Mojave Desert Management Plan (NEMO): The Project is not located within the NEMO and is located on private lands.
27. Page 4.2-10, California Desert Conservation Area Plan, The Northern and Eastern Colorado Desert Coordinated Management Plan amends the 1980 California Desert Conservation Area Plan. However, it applies only to public lands and therefore it does not apply to HHSEGS.
28. Page 4.2.10, Wild and Scenic Rivers Act (Public Law 90-542; 16 U.S.C. 1271 et seq.): There are no Wild and Scenic Rivers within the Project Area.
29. Page 4.2-11, Protected furbearing mammals (California Code of Regulations, Title 14, section 460), Badger is identified as a furbearing mammal; however Section 461 provides that badger may be “taken”, without limit, between Nov- Feb. Also, please refer to Applicant’s General Comments regarding applicability of this code section to Kit Fox.
30. Page 4.2-11, Fully Protected Species, (Fish and Game Code sections 3511, 4700, 5050, and 5515), the description to these code sections states: “Designates certain species as fully protected and prohibits the take of such species or their habitat unless for scientific purposes (see also California Code of Regulations Title 14, section 670.7).” The statute does not speak to habitats; therefore, that reference should be deleted.
31. Page 4.2-11, Nest or Eggs (Fish and Game Code section 3503), please add the following language to the description of this code section: Protects California’s birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by code or regulation.
32. Page 4.2-11, Birds of Prey (Fish and Game Code section 3503.5), please add the following language to the description of this code section: Unlawful to take, possess, or destroy any birds in the orders *Falconiformes* and *Strigiformes* or to take, possess, or destroy the nest or eggs of any such bird, except as otherwise provided by code or regulation.
33. Page 4.2-11, Migratory Birds (Fish and Game Code section 355-357), please add the following language to the description of this code section: The commission may, annually, adopt regulations pertaining to migratory birds to conform with or to further restrict the rules and regulations prescribed pursuant to the Migratory Bird Treaty Act, except as otherwise provided by code or regulation.
34. Page 4.2-12, California Desert Native Plants Act of 1981 (Food and Agricultural Code section 80001 and following and California Fish and Game Code sections 1925-1926), please add the following language to the description of this code section: Protects non-listed California desert native plants from unlawful harvesting on both public and private lands in Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego counties. Unless issued a valid permit, wood receipt, tag, and seal by the commissioner or sheriff, harvesting, transporting, selling, or possessing specific desert plants is prohibited, unless the activity is an activity exempted from this Act



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**Proposed Project Facilities**

35. Page 4.2-14, Please refer to the comment in the General Document Comments section of the Applicant's PSA comments which addresses acreages associated with the HHSEGS. The 180 acre temporary laydown area should be subtracted from the 3,277.
36. Page 4.2-15, Natural Gas Pipeline: Please refer to the comment in the General Document Comments section of the Applicant's PSA comments which provides the correct description of the natural gas pipeline.
37. Page 4.2-15, Transmission System Interconnection and Upgrades: Please refer to the comment in the General Document Comment section of the Applicant's PSA comments which provide the correct description of the transmission system interconnection.
38. Page 4.2-15, Water Supply and Discharge: This section needs to reflect that a temporary construction well will also be constructed on-site.
39. Page 4.2-16, Regional Setting: The ACEC is actually 2.5 miles east of the project's southeastern corner.
40. Page 4.2-17, Regional Setting, 1st full paragraph: It is not accurate to state that the residential subdivision on the land on which the HHSEGS site is located, is abandoned. The subdivision project has been delayed. Lots have been sold in recent history and could be develop, if the HHSEGS is not approved. . The St. Therese Mission is an example.
41. Page 4.2-17, Regional Setting, 2nd full paragraph, 3rd sent: The number of disturbed acres is incorrect. There are 77 disturbed acres on the site, 61 acres of existing roads and 16 acres of orchard and other disturbed areas.
42. Page 4.10-19, Disturbed, 1st paragraph, 1st sent.: The number of disturbed acres is incorrect. There are 77 disturbed acres on the site, 61 acres of existing roads and 16 acres of orchard and other disturbed areas.

**Common Wildlife and Nesting Birds**

43. Page 4.10-24, Common Wildlife, 2nd paragraph, 3rd sent.: Please revise this sentence as follows: "Areas characterized by more intact native plant communities such as the northern and eastern western portions of the site appear to support increased densities of native species."
44. Page 4.2-71, General Construction Impacts to Common Wildlife, 3rd full paragraph, last sent., "Although the project utilizes a "low impact design" which substitutes mowing for grading wherever possible, and maintains natural drainage features as possible; functional habitat values on the project site for most species of wildlife will be lost." Please provide the scientific evidence to support this statement.
45. Page 4.2-71, General Construction Impacts to Common Wildlife, 3rd full paragraph, second to last sent.: Impacts on nest failure have not been established. The FSA should include information to support this claim.

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46. Page 4.2 – 72, 1st paragraph, General Construction Impacts to Common Wildlife: The PSA states, “Construction-related effects to common wildlife are typically not considered significant under the CEQA. However, the large scale of the construction, the fact that many species of wildlife will remain trapped within the perimeter fence and the multi-year schedule would result in potential significant effects to common species without implementation of the mitigation measures.” The Applicant disagrees with this assessment which does not meet any of the significance criteria listed on page 4.2-61. There are no significance criteria based on the scale of construction. The relevant criteria is, “substantial adverse effects on habitats that serve as breeding, foraging, nesting, or migrating grounds and are limited in availability or that serve as core habitats for regional plant and wildlife populations.” The project site does not remove land that has “limited availability” or that serves as a “core habitat” for regional wildlife populations. The FSA should reflect these facts.
47. Page 4.2-181, Item 5, Staff’s Proposed Findings of Fact: The PSA states, “The diverse plant communities and landscape features in and around the HHSEGS site provide suitable foraging breeding, and/or facilitate wildlife movement throughout the greater region.” This is incorrect. The site has only two plant communities. The diversity of the Mojave Desert scrub is typical and the diversity of the shadscale community is low. It has been established that this area is not an important corridor. It has no features that are more conducive to animal movements than surrounding areas.

***Mammals***

48. Page 4.2-25, Mammals, 1st paragraph: The statement, “Mammals were well represented on the HHSEGS project site...,” is a subjective and unquantifiable descriptor that should be removed or revised.
49. Page 4.2-26, 1st paragraph: The PSA states that “bobcat (*Felis rufus*) also use the site.” There is no evidence to support this statement. It should be deleted in the FSA.

***Bats***

50. Page 4.2-26, 2nd paragraph: Townsend’s big-eared bat (*Corynorhinus townsendii*) and long-legged myotis (*Myotis volans*) were not detected in the ANABAT™ survey report covering December 2011 through March 2012 or in the report covering April 1 through June 22, 2012, which will be submitted in August 2012. These statements should be corrected in the FSA. Similar changes should also be made at page 4.2-56, 2nd paragraph and “Long-legged myotis” 1st paragraph; page 4.2-102, Special-status Bats, 1st paragraph, 3rd sent.
51. Page 4.2-55, Pallid Bat, last sent.: The PSA states, “Pallid bat is known to occur on the project site, and was detected using Anabat acoustic technology during winter monitoring from December, 2011 to March, 2012.” This paragraph should clarify that a single call was detected on the site in March and one in April and that there is no evidence of roosting or foraging habitat on the site for this species.
52. Page 4.2-103, 1st paragraph: The PSA states, “In order to reduce these impacts staff has developed pre-construction monitoring and impact avoidance measures for bats to reduce impacts to potential day roosts. Conditions of certification required to reduce impacts to

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sensitive bats is described below.” There is no evidence that bats will be attracted to roost on solar facility structures. Based on the ANABAT™ surveys, bat use at the site is very low.

53. Page 4.2-103, Indirect Impacts to Special-status Bats, 1st paragraph: The PSA states, “Indirect impacts to the Stump Spring ACEC and associated mesquite thickets in Nevada, as well as to the Amargosa River in California, may also occur (see also the Water Supply section for more information).” However, The PSA water section states that the project will not have an impact on the Amargosa Wild and Scenic River. The FSA should reflect the Water Resource’s section’s conclusion that the project will not have an impact on the Amargosa Wild and Scenic River.
54. Page 4.2-103, Habitat Loss for Special-status Bats: This paragraph assumes that all of the area within the site will be lost as bat foraging habitat but also states that bats will be attracted to the site by lighting for mirror washing at night. However, if night lighting attracts insects, and bats that prey on them, then bats would benefit from increased prey availability. The HHSEGS project’s structures and operations present no threat because bats forage at night and use echolocation, which allows them to easily avoid stationary structures.

**Reptiles**

55. Pages 4.2-46 through 51, Special-status Wildlife Species – Reptiles, Desert Tortoise: This section should clearly differentiate between desert tortoise found in California and those found in Nevada.

**Avian Species**

56. Page 4.2-27, 2nd full paragraph: The PSA states, “The system of mesquite thickets along the state border in Nevada are believed to crucially important to the greater ecosystem.” The Applicant is unaware of any scientific basis for this statement. There is no scientific information in the record to support this statement.

The number of species detected was typical of Mojave Desert communities (Tomoff, 1974). The number of species recorded in point counts is 28. Including incidental sightings, 41 species were recorded. These are low values that can be expected in the Mojave Desert at a location without open water, with sparse vegetation and with little physical structure. Areas with open water and greater forage have much greater numbers of species, 5 to 6 times more in some cases. In comparison, avian point counts at the Marine Corps Air Ground Combat Center, Twenty-nine Palms, California, ranged from 1 to 25 species per survey and recorded a total of 210 species (Cutler et al., 1999). Avian point counts conducted in 1994 and 1995 at the same facility reported observations of more than 200 species of birds, approximately half of which were neotropical migrants (McKernan, 1998). In the case of the HHSEGS Project site, environmental subsidies (water and forage) are not present, and they are the likely reason for the low avian species richness at the project site.

**References**

Cutler, T. L., D. J. Griffin, and P. R. Krausman. 1999. A wildlife inventory and management recommendations for the Marine Corps Air Ground Combat Center, Twentynine Palms, California. United States Department of the Navy Contract N68711-96-LT-60025. 142pp.

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McKernan, R. L. 1998. Draft: Neotropical bird use at the U.S. Marine Corps Air Ground Combat Center, Twentynine Palms, California, 1994 and 1995. 21pp.

Tomoff, Carl S., 1974. Avian Species Diversity in Desert Scrub. Ecology. Vol. 55, No. 2 (Mar., 1974), pp. 396-403.

57. Page 4.2-104, 2nd full paragraph, first two sentences: The PSA states, "Operation of the project may also have the potential to alter the abundance of insect prey for both bats and birds. The abundance of insect prey on the project site and the effect to them from collision and thermal exposure is poorly understood." There is no abundance of insect prey on the site as evidenced by the low bat usage levels. For those insects that may be onsite, they would have to reach elevations of 600 feet to 750 feet to be affected by "thermal exposure." The FSA should be revised to reflect these facts.
58. Page 4.2-114 and 115, Roads, 2<sup>nd</sup> paragraph, last sent.: Access to the project site will be from Tecopa Road. Tecopa Road should not be included as an access road requiring desert tortoise fencing.
59. Page 4.2-120, Lighting and Collisions, 4<sup>th</sup> full paragraph, last sent.: The PSA states, "While the project would not have evaporation ponds that could attract birds to the site, it would contain a large stormwater retention pond that would hold water for limited time after seasonal rainfall." This is not correct. The sentence should be revised as follows:

"While the project would not have evaporation ponds that could attract birds to the site, it would contain a large stormwater retention ~~area pond~~ that would hold water for limited time after significant flood events ~~seasonal rainfall~~."

60. Page 4.2-121, Glare and Collisions, 5th sent.: The PSA states, "Operation of the solar panels could also cause an increase in Polarized Light Pollution (PLP) which occurs from light reflecting off of dark colored anthropogenic structures." This statement is highly speculative and has not been established for solar heliostats. Furthermore, neither the solar power towers nor the heliostats will be dark colored. On page 4.2-104, 2nd full paragraph, 3rd sent. a similar statement is made. However, in this context it appears to be referencing solar photovoltaic panels, which are often dark. The common artificial polarizers the article references are: "black plastic sheets (used in agriculture), asphalt roads, oil spills and open-air waste oil reservoirs, dark-colored paintwork (eg [sic] of automobiles), black gravestones, and glass panes – share important physical characteristics of the most common natural polarizer, the surface of dark waters, and polarize light strongly.." None of those items, other than a limited amount of paved roads and parking lots, will be onsite. No other project features except the stormwater detention area after a large rain event would appear like the surface of "dark waters." Therefore, PLP is not a valid concern and it's discussion should be removed.

### **Desert Tortoise**

61. Page 4.2-2, Desert Tortoise, 1st paragraph; page 4.2-62 to 67. Table 8 (and other locations in the section): The calculation of disturbance acreage in Biological Resources Table 8 (and elsewhere) is not correct. It should credit areas that are not suitable habitat, areas of roads

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and previous disturbances for residential development, and account for areas of temporary disturbance. The correct numbers are shown in the table below.

Breakdown of Disturbed Area in Acres and by Impact Category

Facility	Distance (miles)	Temporary Impacts	Long-term Impacts	TOTAL
Solar Plant 1			1,483.1	1,483.1
Solar Plant 2			1,510.1	1,510.1
Subtotal Solar Plants			2,993.2	
<b>Common Area</b>				
Administration/Warehouse			4.8	4.8
Substation			3.0	3.0
Gas metering Station			0.7	0.7
Remaining Construction Area			94.5	94.5
<b>Temporary Construction Laydown Area</b>		180.1		180.1
<b>TOTAL PROJECT AREA</b>		180.1	3,096.2	3,276.3
Credit for Existing Dirt Roads Onsite <sup>a</sup>	18.7			(61.0)
Credit for Orchard & Disturbed Areas Onsite				(16.0)
<b>NET DISTURBED AREA</b>				<b>3,199.3</b>

<sup>a</sup> Based on GIS data from aerial photos

62. Page 4.2-47, 1<sup>st</sup> paragraph, 1<sup>st</sup> sent.: this sentence reads: "Based on genetic differences there are two recognized populations of desert tortoise in the United States." This sentence should be updated to reflect that there are two species recognized, not two populations.
63. Page 4.2-46, Desert Tortoise: With regard to the estimated number of desert tortoise on the project site, please see Applicant's PSA Comments, Set 1, filed on July 13, 2012.
64. Page 4.2-85 and 6, Habitat Loss and Compensatory Mitigation: With regards to the acreages of habitat calculated and the mitigation ratios proposed, please see Applicant's PSA Comments, Set 1, filed on July 13, 2012.

### Desert Tortoise Translocation

65. Page 4.2-82, Translocation, 1st paragraph, last sent.: The PSA states, "The translocation of animals to privately held lands is not recommended, given the threat of future development and other inherent risks to desert tortoise associated with private land."

In response to agency comments and recommendations, the Applicant has agreed to advance a proposal for the relocation of desert tortoise captured onsite to a strip of private land (which varies between 2 to 6 feet wide) between the edge of the dirt trail (generally referred to as stateline road) adjacent to the California-Nevada stateline and the actual stateline. A revised Translocation Plan describing this proposal will be submitted in August 2012.

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66. Page 4.2-82, Desert Tortoise, Table 12: With regard to the desert tortoise density estimates, please see Applicant's PSA Comments, Set 1, filed on July 13, 2012.
67. Page 4.2-92, Ravens, Coyotes, and Other Predators, 1st paragraph, 1st sent.: This section fails to recognize that Charleston View already provides subsidies (water, garbage, pets, pet food, etc.) for coyotes and ravens. Consequently, the solar site will not represent a new significant attractant.

**Burrowing Owl**

68. Page 4.2-58, 1st full paragraph: The 6<sup>th</sup> sentence states, "Conflictingly, the phase III report also states that no observations of burrowing owls have ever been made on site." This paragraph refers to a Survey for Winter Residents (non-breeding owls) conducted in early 2012. The winter survey only reported the survey findings from the 2012 winter survey, during which no owls were observed, and did not provide an overall summary of burrowing owl sitings. However, in Section 4 of the Draft Burrowing Owl Mitigation and Monitoring Plan (Data Response, Set 2E, cited in the paragraph as CH2 2012y), which provides a historic summary, it states, "During botany surveys conducted in 2010 by GANDA biologists, burrowing owls were incidentally observed on the project site (in the northwest quarter-section of Section 16) using an old kit fox natal den, and immediately west of the project site. This observation was included as an incidental report in the AFC (AFC Section 5.2.6.7.1) for the onsite observation. The general location of the incidental observation was revisited during the 2012 winter burrowing owl surveys."

The paragraph concludes with the statement, "However, the information provided by the applicant cannot determine if use of the site is limited to short term occupation, e.g. cannot determine based on the information provided whether the site supports breeding residents or is used as a migratory stopover." Surveys for desert tortoise, which examined all burrows, were conducted between April 13, 2011 and May 18, 2011 during the peak of the burrowing owl breeding season (April 15 to July 15). The presence of burrowing owl sign was documented but no burrowing owl individual was seen on the site. Burrowing owl has not been observed using the site during the breeding season. Moreover, the winter survey report found neither burrowing owls nor burrowing owl sign, which would indicate that there is no long-term occupation of the site.

Survey results are consistent with a sparse winter (non-breeding) population, and the FSA should reflect the survey reports. Although BUOW is a year-round resident throughout much of California, migrants from other parts of western North America may augment resident lowland populations in winter (Shuford and Gardali, 2008). Garrett and Dunn (1981) described the species as "quite scarce" from Inyo County south through the eastern Mojave Desert. Overall, regional numbers are low and occupied areas are widely scattered, which is likely typical for this species in desert systems (Shuford and Gardali, 2008).

**References:**

Garrett, K., and Dunn, J. 1981. The Birds of Southern California: Status and Distribution. Los Angeles Audubon Soc., Los Angeles.



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Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

The California Burrowing Owl Consortium (CBOC). 1993. Burrowing owl survey protocol and mitigation guidelines. Tech. Rep. Burrowing Owl Consortium, Alviso, California.

**Golden Eagle & Migratory Birds**

69. Page 4.2-4, Golden Eagle & Migratory Birds, 3<sup>rd</sup> sent.: The PSA states, “The large scale land use conversion for the HHSEGS project would remove approximately 3,277 acres of foraging habitat for golden eagle and migratory birds.” It is incorrect to say that all of the area is removed as habitat since some functionality is maintained and the actual disturbance acreage is different. In addition, the 3,277 acres includes the 180 construction laydown area which will be restored after construction. Therefore, the laydown area acreage should not be included.
70. Page 4.2-4, Golden Eagle & Migratory Birds, 4th sent.: The PSA states, “New golden eagle regulations proposed by the USFWS indicate [that] the USFWS may consider this loss to constitute substantial interference with normal breeding, feeding, or sheltering behavior, which would be considered a “take”. It is inappropriate to establish COC or base an impact assessment based on speculation (“may”) related to a proposed regulation. The quoted sentence is also an inaccurate statement of applicable law and is thus misleading and prejudicial. The quoted sentence should be deleted.
71. Page 4.2-4, Golden Eagle & Migratory Birds, last sent.: The PSA states, “However, staff believes significant residual impacts to avian species would remain after implementation of conditions of certification.” The Applicant disagrees that residual impacts would be significant after actions that reduce threats to eagles in the region, such as placing anti perching devices and reducing existing risks to known nest sites.
72. Page 4.2-57, 2nd paragraph, last sent.: The PSA states, “This species is present in the region and although applicant indicated the nests were not active, a single survey alone cannot be used to make this determination.” This paragraph should be updated with the information below, from the spring 2012 nest surveys (submitted as Attachment DR 51-3, Data Response Set 1B-7).

In April of 2012, three biologists conducted pedestrian Golden Eagle surveys located in the Nopah and Kingston ranges in California overlooking the Pahrump Valley. The terrain is very steep and rugged offering an abundance of potential nesting substrate. Pedestrian surveys were conducted in order to avoid the potential impacts of helicopter surveys on bighorn sheep lambs in the area.

The pedestrian surveys followed the 2010 Interim Golden Eagle Technical Guidance; Inventory and Monitoring Protocols and Other Recommendation in Support of Golden Eagle Management and Permit Issuance (Pagel -USFWS 2010). Each nest site, roost, or territory was observed for a minimum of 4 hours by a qualified observer. Each area inventory was conducted looking for numbers, locations and distributions of golden



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eagles and their breeding area habitats. The surveys conducted during this effort comprise one of the two recommended site visits during a single breeding season (Pagel 2010). GPS locations for these nests were approximated using the topographical map features of Garmin Map 76CSx GPS units.

Nine breeding areas were identified based on the spacing of nest clusters. The survey found four occupied golden eagle breeding areas, two of which contained nests with young. Two additional breeding areas displayed signs of occupancy by eagles, but no eagles were observed there during the surveys. An eagle vocalization was heard at NE Kingston, but no eagles were seen there. No signs of occupancy by eagles at the remaining three sites were observed.

Reference: Pagel, J.E., D.M. Whittington, and G.T. Allen. 2010. Interim golden eagle technical guidance: inventory and monitoring protocols; and other recommendations in support of eagle management and permit issuance. Division of Migratory Bird Management, U.S. Fish and Wildlife Service.

73. Page 4.2-105 & 106, Indirect Impacts to Special-status Birds, 2nd paragraph 2nd, sent.: The PSA states, "Weed abatement through grazing or mechanized tools and maintenance of the evaporation pond could also affect nesting." The project design does not include an evaporation pond or grazing activities (see also page 4.2-120, last paragraph, 4<sup>th</sup> sent.). Please remove this sentence.
74. Page 4.2-109, Conclusions and Discussion of Mitigation for Golden Eagles, 2nd paragraph 1st sent.: The PSA states, "Up to 19 nests have been located in the vicinity of the project, and as many as five eagles have been observed on the site in a day." This statement is inaccurate. No more than 3 eagles can be confirmed by the 5 sightings. Only 3 were seen at the same time. This information is presented in Attachment DR52-1, Data Responses. Set 1B-4.
75. Page 4.2-110, 1st partial paragraph, last sent.: The PSA states, "Because large-scale solar projects would result in the loss of large amounts of golden eagle foraging habitat, there are concerns about the cumulative impacts to golden eagles resulting from loss of foraging habitat." The amount of foraging habitat taken by solar projects is minuscule compared to the total amount of forage habitat available in the area. The amount of habitat taken from a 10 mile radius is less than 2 percent, and even less considering the large foraging area of this species.
76. Page 4.2-110, 1<sup>st</sup> and 2<sup>nd</sup> paragraphs: The PSA states, "... BIO-24 (Remedial Action for Adverse Effects to Groundwater-dependent Biological Resources), would reduce direct loss of golden eagle habitat and minimize indirect impacts of the project to less than significant levels under CEQA." and states in the next paragraph, "...washes (BIO-22) would reduce potential impacts to golden eagles but may not reduce these impacts to less-than-significant levels under CEQA." These statements conflict with each other. Please clarify.

**Nelson's Bighorn Sheep**

77. Page 4.2-4, Nelson's Bighorn Sheep, 2<sup>nd</sup> paragraph, 1<sup>st</sup> sent. (and other locations throughout the document): There is no evidence in the record documenting that Nelson's Bighorn Sheep use the stump springs as a seasonal watering hole. Furthermore, this suggestion is

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contradicted by information from other sources, which the applicant has previously provided. This information is presented in Data Responses Set 1C #79 and 80, December 19, 2011.

78. Page 4.2-55, 2nd paragraph, 1st sent., the bighorn sheep horn fragment reported on the site may have been transported to the site by scavengers or by stormwater flow. This is not evidence that this is a viable corridor for bighorn sheep movement.
79. Page 4.2-100, 2nd paragraph 1st sent.: The PSA states, "The most likely risk to bighorn sheep would be increased road traffic during spring lambing or during periods of intermountain movement." This is incorrect. Bighorn sheep lambing occurs in the surrounding mountains, miles from the project site. Those areas are parts of the National Wilderness Preservation System (NWPS), which are roadless and where mechanized travel is prohibited. The majority of traffic during project construction will be on Tecopa Road, which is not a corridor for bighorn sheep during intermountain movement.

**American Badger and Desert Kit Fox**

80. Page 4.2-97, Indirect Impact to American Badger and Desert Kit Fox: First, the Applicant has provided all information gathered on Desert Kit Fox dens and sign identified in surveys. Secondly, the 2nd paragraph is referring to circumstances at the Genesis project, for which staff admits, there is no known connection to the project. It is unreasonable to attribute desert kit fox deaths to the project. Death may be due to trauma from non-project activities or predation. Distemper antibodies have been found in California populations of kit fox, indicating survival of previous outbreaks. This indicates that members of the population have survived previous outbreaks and that it has not been introduced by the project. Domestic dogs from Calvada Springs and Pahrump which are known to carry distemper and currently may use the unfenced project site in an uncontrolled manner, may carry distemper to desert kit fox. There is a condition that prohibits domestic dogs being brought to the jobsite. The project owner should not pay for necropsy unless the death is directly attributable to the project. The FSA should reflect these facts.
81. Pages 4.2-97 and 98, Conclusions and Discussion of Mitigation for American Badger and Desert Kit Fox, 2nd paragraph, last sent.: Please identify adjacent BLM lands that are protected onto which American badger and desert kit fox could be evicted.

In California, Morrell (1972) reported home ranges of 2.6-5.2 km<sup>2</sup> (1.0-2.0 mi<sup>2</sup>) for the San Joaquin kit fox.

Kit fox activity peaks during crepuscular periods but occurs nocturnally and somewhat in the daytime year round. However, daytime hours are generally reserved for resting in or near the den. Nightly movements vary seasonally (Cypher, 2003), but nightly forays in California were 10.7 km (6.6 miles) during pup-rearing (mid February to May), 9.4 km (5.8 miles) during pup dispersal (May to September), and 14.6 km (9.1 miles) during the breeding season (December to mid-February) (Zoellick et al., 2002). Home range sizes of males and females usually do not differ (Cypher, 2003) but males generally forage over greater distances nightly than do females (Zoellick et al., 1989; Koopman, 1995 in Cypher, 2003). Home range estimates range from 251 to 1,160 ha (620 to 2,866 acres) (Cypher, 2003).

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Home range size probably depends on food availability (Spiegel, 1996; Zoellick et al., 2002). Home ranges overlap, and territorial behavior is rare.

Dispersal timing and proportion of the population depend on mortality rates and annual food availability (Cypher, 2003). Juvenile males disperse more than females, but adult kit foxes of both sexes are known to disperse on occasion (O'Neal et al., 1987; Koopman et al., 2000). Among kit foxes on the Naval Petroleum Reserves, California, 33 percent of 209 of juveniles left their natal home range (44 percent of males and 21 percent of females (Koopman et al., 2000). Regardless of gender, within 10 days of dispersal, 65 percent died (Koopman et al., 2000). Predators were the primary cause of mortality. Survival was similar among dispersing males and females.

Mean dispersal distance was 7.8 km (4.8 miles) for males and females (Scrivner et al., 1987 in Cypher, 2003). Juvenile dispersal rates were lower for family groups receiving supplemental food (Warrick et al., 1999 in Cypher, 2003). Kit foxes tagged as kits in Utah have been recaptured as far as 32 km (20 miles) from their original point of capture, and one adult female kept as a pet was recaptured in her original den approximately 32 km (20 miles) from where she escaped (Egoscue, 1956).

**References:**

- Cypher, B.L., P.A. Kelly, and D.F. Williams. 2003. Factors influencing populations of endangered San Joaquin kit foxes. Pages 125-137 in M.S. Sovada and L. Carbyn, editors. The swift fox: ecology and conservation of swift foxes in a changing world. Canadian Plains Research Center, University of Regina, Saskatchewan, Canada.
- Egoscue, H.J. 1956. Preliminary studies of the kit fox in Utah. *Journal of Mammalogy* 37:351-357.
- Koopman, M.E. 1995. Food habits, space use, and movements of the San Joaquin kit fox on the Elk Hills Naval Petroleum reserves in California. Thesis, University of California, Berkeley, CA.
- Koopman, M.E., B.L. Cypher, and J.H. Scrivner. 2000. Dispersal patterns of San Joaquin kit foxes (*Vulpes macrotis mutica*). *Journal of Mammalogy* 81:213-222.
- Morrell, S. 1972. Life history of the San Joaquin kit fox. *Calif. Fish and Game*. 58:162-174.
- O'Neal, G.T., J.T. Flinders, and R.P. Clary. 1987. Behavioral ecology of the Nevada kit fox (*Vulpes macrotis nevadensis*) on a managed desert rangeland. Pages 443-481 in H. H. Genoways, editor, *Current mammalogy* 1:1-519. Plenum Press, New York, NY.
- Scrivner, J.H., T.P. O'Farrell, and T.T. Kato. 1987. Dispersal of San Joaquin kit foxes, *Vulpes macrotis mutica*, on Naval Petroleum Reserve #1, Kern County, California (Topical Report EGG 10282-2190). U.S. Department of Energy, Washington, D.C.
- Spiegel, L.K., editor. 1996. Studies of San Joaquin kit fox in undeveloped and oil-developed areas. California Energy Commission, Sacramento, CA.

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Warrick G.D., J.H. Scrivner, and T.P. O'Farrell. 1999. Demographic responses of kit foxes to supplemental feeding. *Southwestern Naturalist* 44:367-374.

Zoellick B.W., N.S. Smith, and R.S. Henry. 1989. Habitat use and movements of desert kit foxes in western Arizona. *Journal of Wildlife Management* 53:955-961.

Zoellick, B.W., C.E. Harris, B.T. Kelly, T.P. O'Farrell, T.T. Kato, and M.E. Koopman. 2002. Movements and home ranges of San Joaquin kit foxes relative to oil-field development. *Western North American Naturalist* 62:151-159.

82. Page 4.2-98, 2nd full paragraph: The Applicant disagrees with the PSA's conclusions about the protections afforded American badgers and Desert Kit Fox as fur-bearing mammals. See the general comments above regarding Desert Kit fox. Further, The badger is identified as a furbearing mammal; however, 14 CCR 461 provides that badger may be "taken," without limit, between November 16<sup>th</sup> and the end of February.
83. Page 4.2-99; 2<sup>nd</sup> full paragraph. The second sentence says that Desert Kit fox subject to "Take" provisions of CESA. This is incorrect. Section 86 take provision apply only to species listed as threatened, endangered, or candidate species under CESA. The Desert Kit Fox is not a CESA listed or candidate species. Moreover, the "protection" afforded by Section 460 relates to fur trapping activities, which are inapplicable to the HHSEGS project. Accordingly, the references to "protection should be modified and reference to Section 86 Take should be deleted as follows: "California Code of Regulations, section 460, designates kit fox as "protected" in the context of fur trapping activities, which are not relevant to the HHSEGS project, and they are further protected by CDFG Game Code (section 86) prohibition against take, defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"."
84. Page 4.2-100, 3<sup>rd</sup> paragraph, 2<sup>nd</sup> to the last sentence: This sentence reads: "Based on the number of pocket gopher burrows and small rodent burrows observed by staff, prey densities appear high on the project site." Please provide the record of quantified observations that support this statement.
85. Page 4.2-100, 2<sup>nd</sup> paragraph, last sent.: The Applicant has provided all information on desert kit fox dens and sign identified in surveys. It is unclear what additional information Staff is expecting to be provided.

**Desert Washes**

86. Page 4.2-6, Desert Washes, 1st paragraph: Please revise the paragraph as follows:

**Desert Washes:** According to the Preliminary Delineation of Jurisdictional Waters of the State (URS, 2012), a total of 28.3323.82 acres of jurisdictional wWaters of the State, including single-thread and braided, compound channels, were delineated on the proposed project site. Stream features totaling 4.51 acres were mapped within the 250-foot buffer area, but are not categorized as waters of the State since they are located in Nevada. Of these 28.3323.82 acres of waters of the State, 0.42 acres are also Waters of the United States. Six of the features are also depicted as blue line features on the U.S. Geological Survey (USGS) topographic maps. The U.S. Army Corps of Engineers issued a jurisdictional

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determination on December 14, 2011 (CH2 2011f). The state waters delineation is currently under review but has not been field-verified. Based on discussions with CDFG and RWQCB staff, it is expected that the total acreage of onsite waters of the State will be revised to eliminate drainage features mapped within maintained roads. After removing drainage features and a pooling area within maintained roads, the revised waters of the State acreage on the HHSEGS site is estimated at 20.08 acres, which represents less than 1 percent of the total project acreage. Most onsite ephemeral drainages are shallow and less than 5 feet wide, thereby providing little if any wildlife habitat functions.

87. Page 4.2-6, last paragraph: The poorly expressed, narrow, ephemeral drainages provide little if any substantial wildlife habitat functions. The Lake and Streambed Alteration (LSA) program set forth in Section 1600 of the Fish & Game Code is intended to protect “fish and wildlife resources.” Indeed, Section 1600 of the Fish & Game Code begins with this statement: “The Legislature finds and declares that the protection and conservation of the fish and wildlife resources of this state are of utmost public interest.” (Emphasis added.) The phrase “fish and wildlife resources” is repeated in Sections 1600, 1602, 1603, 1605, 1614, and 1615. Clearly, the LSAA process is focused on impacts to “fish and wildlife resources.”

It is undisputed that there are no fish on the HHSEGS site. In fact, these are desert washes; there is only occasionally water on site as a result of precipitation – rain. Since there are no fish, the Section 1600 jurisdictional connection to project site with regards to the LSAA Agreement Process, if any, must be “wildlife.” However, contrary to the focus on “fish and wildlife” resources, the PSA does not directly address the question of what fish and wildlife resources are potentially affected. By implication (because it is not expressly stated), the PSA it appears that the biological values the PSA seeks to protect via mitigation as proposed BIO-22 is plant life. If this is the case, then the PSA lacks the appropriate showing of potential impacts to “fish and wildlife” resources. As discussed below, given the lack of this showing of linkage to fish and wildlife resources, no mitigation can be imposed and BIO-22 must be deleted.

Further, as a factual matter, it should also be noted that washes have been previously disturbed through roadway construction, in particular along the state line and graded roads that criss-cross the project site. The assertion that these drainages provide habitat value to fish or wildlife species is an assumption. Please revise page 4.2-6, last paragraph as follows: “These impacts are could be significant because they would cause a loss of the if these streams provide beneficial fish and wildlife habitat functions and values that these state waters provide to wildlife.”

88. Page 4.2-6, last paragraph The PSA states, “Potential indirect impacts to the 4.51 acres of washes delineated upstream of the project’s eastern boundary due to underground and overhead transmission construction, potential erosion (head-cutting), on-going human disturbance, glare, lighting, and road maintenance would also diminish the function and value of washes in close proximity.” This statement regarding indirect effects should be deleted here. First, the 4.51 acres of “waters” are not “Waters of the State” because they are out of State; they are located in Nevada. As a matter of law, California law (the Fish & Game Code) does not apply to these Nevada resources. Second, as a matter of fact, these

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upstream resources will not be affected by the project. They are located wholly outside the project's footprint. Third, the project's design will match pre- and post-project water flows on and off site such that both the upstream resources (in Nevada) and the downstream resources to the west of the project site will be unaffected, especially since there are only flows during rain events. These are not "indirect effects," and the FSA should delete reference to indirect effects on Nevada ephemeral waters.

89. Page 4.2-8, Field Verification of State Waters Delineation, 1st sent.: Please revise as follows:

**Field Verification of State Waters Delineation:** CDFG and RWQCB staff have ~~has~~ reviewed the applicant's state waters delineation report but have ~~has~~ not yet conducted a field verification of features delineated as "jurisdictional" and "non-jurisdictional features". RWQCB staff have provided written verification of waters of the State, and have concurred with the state waters delineation (URS 2012), with the exception that drainage features and pooling areas located within maintained roadways are not considered waters of the State.

90. Page 4.2-9, Biological Resources Table 1, Clean Water Act row. Please revise the 1st sentence of the Description column as follows:

Requires the permitting and monitoring of all discharges to waters of the U.S. ~~surface water bodies~~

91. Page 4.2-12, Biological Resources Table 1, Porter-Cologne Water Quality Control Act Please revise the Description column as follows:

Defines waters of the State, and r~~Regulates~~ discharges of waste and fill material to ~~waters of the State including these waters, which include~~ "isolated" waters and wetlands.

92. Page 4.15, Drainage, Erosion, and Sediment Control, 1st paragraph last two sent.: Please delete the last two sentences because the statement is not consistent with construction of a raised western perimeter road that serves to retain storm water.

~~If needed, stone filters and check dams would be strategically placed throughout the project site to provide areas for sediment deposition and to promote the sheet flow of stormwater prior to leaving the project site boundary. Stone filters and check dams are not intended to alter drainage patterns but to minimize soil erosion and promote sheet flow.~~

93. Page 4.2-18, Biological Resources Table 2, last 2 rows. Please correct the table as follows and add the footnote:

Desert Washes/Waters of the US	0.42*
Desert Washes/Waters of the State	<del>28.20.08</del>

\*Waters of the U.S. are also waters of the State

94. Page 4.2-20, 1st paragraph following bullets. The desert washes also may be regulated under the Clean Water Act and/or Porter-Cologne. Regulation is not limited to CDFG. Please revise as follows:



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The desert washes on the project site, sometimes referred to as ephemeral or episodic streams, all or a portion of which are regulated under the Clean Water Act, Porter-Cologne Water Quality Act, and California Fish and Game Code, are described in the subsection “Desert Washes”, following the discussion of mesquite ~~woodlands~~ thickets and dune scrubs, invasive weeds, special-status plants, and groundwater-dependent ecosystems.

95. Page 4.2-44 & 45, Desert Washes, 1st paragraph Please note that streams are regulated by the Fish and Game Code – a subset of waters of the State. Therefore, please revise as shown below.

The U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board-Lahontan Region, and the California Department of Fish and Game (CDFG) have a shared, and somewhat overlapping, regulatory responsibility for the protection of surface waters on the project site. The Clean Water Act regulates discharges of waste into dDesert washes that are classified as waters of the U.S.; the lateral limit of jurisdiction under Section 404 of the CWA have more limited protection under Section 404 of the Federal Clean Water Act, and where the lateral limit of a jurisdictional stream ends at the ordinary high water mark (OHWM) of the stream. Waters of the State are defined by and regulated under the Porter-Cologne Water Quality Control Act. In addition, some waters of the State are regulated under California Fish and Game Code (FGC), Sections 1600-1616 and implemented by CDFG through its Lake and Streambed Alteration (LSA) Program.”

For the remainder of the paragraph (not reproduced) this “operationally defined” approach is not consistent with the California Code of Regulations definition of “stream.” Under the approach described by the PSA in this section, the 100-year floodplain would be regulated, but this is usually not the case. It could be argued that drainage features that terminate within the valley floor have no substantial contribution to the chemical, biological or physical integrity of downstream waters, since there are no downstream waters. In this case, CDFG regulatory authority should be limited to features which, themselves, exhibit aquatic life and wildlife habitat functions; the PSA does not provide a description of the aquatic life and wildlife habitat or benefit functions provided by the onsite ephemeral drainages.

96. Page 4.2-45, 1st full paragraph, last sent.: Note the determination did not specify 0.42 acre – only that the two streams were waters of the U.S. to the extent they contain OHWM indicators. Please revise as follows:

In a December 14, 2011 correspondence from the USACE Ventura Regulatory Field Office, the Corps determined that only two of the 69 features, ~~totaling 0.42 acre, were~~ are subject to USACE jurisdiction (CH2 2011f).

97. Page 4.2-45, 3rd full paragraph, 1st sent. Please revise the paragraph as follows:

On March 23, 2012, the applicant submitted a Preliminary Delineation of Jurisdictional Waters of the State (URS 2012, CH2 2012g) regulated under Fish and Game Code Section 1600 *et seq.* The delineation report concluded that ~~28.33~~ 23.82 acres of state jurisdictional waters are located within the project boundary, including 80 single-thread



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streams ~~totaling 23.82 acres and an additional 5.85 acres of~~ braided streams. A total of 4.51 acres of state waters were delineated within the 250-foot buffer surrounding the project boundary. At the western edge of the project site, the slope gradient flattens out and the streams dissipate and lose definition; no features were delineated downstream of the project except for one drainage adjacent to Avenue D.

98. Page 4.2-45, 3rd full paragraph, 1st sent. Please revise the citation at the end of the paragraph as follows: (URS 2012, CH2 2012g).
99. Page 4.2-45, last paragraph: The 401 Certification will be issued only for Waters of the U.S. – not nonfederal waters of the State. Requirements for nonfederal waters would be coordinated with CEC. Please revise the paragraph as follows:

The delineation has not yet been field verified by ~~the RWQCB and CDFG Bishop field office staff~~, although RWQCB staff provided written concurrence. Features delineated as “non-jurisdictional” features may be subject to regulation by the Regional Water Quality Control Board (RWQCB) under the Porter-Cologne Water Quality Act. Waters of the State defined in Porter-Cologne include “any surface water or ground water, including saline waters, within the boundaries of the state.” Water quality issues for waters of the U.S. are will be addressed in the Clean Water Act Section 401 Water Quality Certification; RWQCB will coordinate with CEC to address ~~and would apply for~~ placement of fill in any non-federal waters regardless of size or properties of the drainage (see **Water Resources** section of this PSA).

100. Page 4.2-46, 1<sup>st</sup> paragraph, 4<sup>th</sup> line: Please revise the citation at the end of the sentence as follows: (URS 2012, CH2 2012g)
101. Page 4.2-64, Biological Resources Table 8, Waters of the State/Waters of the US row. Applicant disagrees that there will be “Permanent loss of habitat function and values for ~~28-20.08~~ acres of state waters (including 0.42 acres Waters of the US).” (Note the corrected acreage). The PSA assumes the loss of fish and wildlife resource values for these washes. The assumption of loss of habitat function – for fish and wildlife – is at this point an assumption. Moreover, there is no evidence showing that these functions will be “lost”, given the project’s construction methods, which do not require grading of the entire site. Please see Applicant’s General Comments and comments above regarding the focus on fish and wildlife values. Applicant would delete this statement.
102. Pages 4.2-150 & 151, Construction Impacts to Desert Washes, Ephemeral Streams, 1st paragraph. Please revise as follows:

A total of ~~28.33~~ 23.82 acres of jurisdictional Waters of the State, including single-thread and braided ephemeral streams, were delineated on the proposed project site (URS 2012). Of these ~~28.33~~ 23.82 acres, 0.42 ~~acres are is~~ also Waters of the United States. Six of the features are depicted as blue line features on the U.S. Geological Survey (USGS) topographic maps. Of the 23.82 acres, 3.74 acres are ephemeral drainages (0.46 acre) and/or pooling area (3.28 acres) located within maintained roads, and are, thus, not considered waters of the State.

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103. Page 4.2-151, Impacts to Ephemeral Streams, 2<sup>nd</sup> paragraph, 2<sup>nd</sup> sent.: Please revise as follows: “~~The~~Some drainages may also provide wildlife....” However any such wildlife functions have not been established for specific streams on the site, and it is likely that many streams have little, if any, aquatic life or wildlife function.
104. Page 4.2-152, 1<sup>st</sup> paragraph.: Please revise as follows: The BIO-22 mitigation ratio assumes that all State waters on the site have equal aquatic life and wildlife functions and values, which is not the case. A functional assessment has not been performed. Regardless, a 2:1 mitigation for any lands that may be shown to have fish or wildlife resource values would be excessive. Regarding the 0.5:1 mitigation ratio for indirect impacts upstream in Nevada due to underground and overhead transmission construction, potential erosion (head-cutting), on-going human disturbance, glare, lighting, and road maintenance in California, the PSA cannot prescribe mitigation for impacts that may occur in Nevada. There will be no indirect adverse effects in Nevada, given the match of pre- and post-project stream flows. The paragraph should be revised as follows:
- Until potential fish and wildlife values, if any, associated with these features are determined, through the CDFG staff’s recommendations to the CEC and pending field verification of the state waters delineation by CDFG Condition of Certification **BIO-22** requires the project owner to acquire, preserve, and enhance property that compensates at a 2:1 mitigation ratio for the ~~28.33 acres of state waters that would be directly and indirectly impacted onsite (56.66 acres total).~~ The 2:1 ratio is necessary to compensate for the net loss of desert washes; the importance of the washes as a dispersal agent for special status plants; the loss of habitat along the washes that is distinct from the adjacent uplands in cover density and, in some cases, in species composition; and the proximity of the washes to rare and sensitive mesquite dune scrub and area springs, which increases their value to area wildlife. A 0.5:1 mitigation ratio is proposed for indirect impacts to the 4.51 acres of streams that extend upstream of the project and in close proximity to the project boundary. Construction of the pipeline along the eastern boundary would require trenching through many of these washes. Significant indirect impacts to adjacent streams during operation are expected from human disturbance, glare, lighting, and potential head-cutting or erosion above the gas pipeline trench that cuts through the washes at the eastern boundary. These indirect effects, although individually minor, are ~~could be~~ cumulatively considerable. This mitigation could be integrated with the desert tortoise mitigation requirement for acquisition and enhancement of suitable desert tortoise habitat if the desert tortoise mitigation lands meet the selection criteria for state waters compensation described in **BIO-22**. With implementation of this proposed condition of certification, direct and indirect impacts to the project’s state waters would be reduced to less than significant levels, and the project’s contribution to significant cumulative effects would be rendered less than cumulatively considerable. **BIO-22** may need to be updated based upon the results of CDFG’s verification of the applicant’s waters delineation. potential direct and indirect effects cannot be determined.
105. Page 4.2-170, Cumulative Impacts – Desert Washes, 3rd paragraph, 1st sent.: Please revise as follows: “In addition to the project’s potential contribution to the loss of surface waters by filling, diversion and/or channelization,...”

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106. Page 4.2-170, Cumulative Impacts – Desert Washes, 2<sup>nd</sup> paragraph: The PSA identifies the basis for the assumption that 100% of existing wildlife functions and values associated with onsite drainages will be lost, including the seed dispersal function. Because the PSA has not established that there are wildlife functions or benefits, including seed dispersal, associated with onsite ephemeral drainages, or the geographic extent of any such functions (i.e., do they apply to all delineated stream features), impacts to these functions cannot be quantified and mitigation is not appropriate.
107. Page 4.2-174, Streambed Alteration Agreement: California Fish and Game Code §§ 1600-1607, 1st paragraph: This statement of the regulatory authority under the Fish and Game Code is not an accurate description of CDFG's regulatory authority but for the CEC's exclusive jurisdiction. In fact, it is not likely that 100 percent of the ephemeral streams on the site or downstream of the site support fish or wildlife resources. This purported loss is an assumption without a showing of loss of fish and wildlife resource functions and values. Applicant does not concur with and would strike the statements that the project will result in "direct impacts to approximately ~~28.33~~20.08 acres of jurisdictional state waters," as this is an assumption. (Note the acreage correction.) Moreover, the Applicant disagrees with the assertion that the project will have indirect impacts to 4.51 acres of upstream drainages, given that those up-stream, off-site resources will not be impacted by the project; the pre-project and post project lows will be matched by the stormwater design; and that these unaffected resources are also in Nevada. This statement should also be deleted.
108. Pages 4.2-176 & 177, Porter-Cologne Water Quality Control Act, 1st paragraph: Regarding BIO-7, Given that CEC is the state permitting authority, there should be no state permits to submit. Please revise as follows:
- Porter-Cologne Water Quality Control Act.** This ~~a~~Act is administered by the State Water Resources Control Board and nine Regional Water Quality Control Boards ~~state regional water quality control boards (RWQCB)~~, which regulates discharges of waste, ~~and including~~ fill material, to waters of the State, including "isolated" waters and wetlands. For projects under the jurisdiction of the Energy Commission, applicants file a waste discharge report to the RWQCB, ~~who~~ which then ~~issues~~ submits recommended waste discharge requirements (WDRs) for inclusion in the Energy Commission's license. For HHSEGS, the Lahontan RWQCB will issue ~~the recommended~~ WDRs applicable to nonfederal waters of the State, which will be incorporated into the conditions of certification recommended by **Water Resources** staff to ensure compliance with the Porter-Cologne Water Quality Control Act. These recommendations have yet to be issued (see the **Water Quality** section of this document). The Lahontan RWQCB will separately issue a Clean Water Act Section 401 Water Quality Certification for the project discharges of dredged or fill material to waters of the U.S. Condition of Certification **BIO-7** (Biological Resources Mitigation Implementation & Monitoring Plan) requires the project owner provide a copy of all ~~state and~~ federal permits.
109. Page 4.2-178, Clean Water Act: The determination did not specifically quantify the acreage, so delete the 0.42 acres. It should also be noted that compensatory mitigation is required for permanent fill effects only. Please revise as follows:

Clean Water Act (Title 33, United States Code, sections 1251 through 1376, and Code of Federal Regulations, part 30, section 330.5(a)(26)) Section 404 of the federal Clean Water

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Act (CWA) requires permitting and monitoring of all discharges to waters of the U.S. On March 19, 2012, a new Nationwide Permit (NWP 51) was issued for "Land-Based Renewable Energy Generation Facilities" affecting 1/2 acre or less of non-tidal waters of the U.S., or 300 linear feet of streambed. In a December 14, 2011 correspondence to the applicant, the Corps verified the applicant's delineation of Waters of the U.S and determined that only two streams, ~~totaling 0.42 acre,~~ were subject to USACE jurisdiction. Because the acreage of Waters of the U.S. on the site is less than the one-half acre threshold, it is likely that dredge/fill impacts associated with the proposed project can be authorized under NWP 51, although a waiver of the 300 linear foot impact threshold may be required. \* \* \*

110. Page 4.2-180, Field Verification of State Waters Delineation and Desert Wash Plant Communities, 1st sent.: Please revise as follows:

**Field Verification of State Waters Delineation and Desert Wash Plant Communities.**

The total acres of state waters is undetermined at this time; the applicant proposes there are ~~28.33~~20.08 acres of state waters in the project boundaries but RWQCB and CDFG have not yet field-verified the delineation.

111. Page 4.2-271, Please insert the following reference:

URS. 2012. BrightSource Energy Hidden Hills Solar Project, Inyo County, CA Preliminary Delineation of Jurisdictional Waters of the State. March 20, 2012. (Submitted as Attachment DR8-1, Data Response, Set 1C-2)

## Findings of Fact

The Applicant requests that the following modifications be made to the Findings of Fact listed below:

112. Fact 1: Fact 1 should be revised as follows: Construction and operation of HHSEGS will disturb approximately 3,276 acres of desert habitat, of which approximately 77 ~~19~~ acres has previously been developed or significantly disturbed, and some degree of degradation (grading, noxious weed infestation) is present across portions of the site.
113. Fact 2: The correct acres of jurisdictional waters of the state is 20.08 acres.
- ~~114. Fact 5: Fact 5 should be revised as follows: The diverse plant communities and landscape features in and around the HHSEGS site provide suitable foraging breeding, and/or facilitate wildlife movement throughout the greater region.~~
115. Fact 7: There is no documentation that the HHSEGS site provides occasional forage and dispersal movement for the fully protected Nelson's bighorn sheep.
116. Fact 10: Without mitigation the HHSEGS project would lower groundwater levels within the project area. However, there is no evidence that use of groundwater at the site would potentially affect groundwater-dependent ecosystems and springs, including the Stump Spring Area of Critical Environmental Concern, a protected area under management by BLM.

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**Conditions of Certification**

117. Page 4.2-182 and 183, BIO-1. Please consider adding the following text which was used at Ivanpah SEGS("ISEGS").

**DESIGNATED BIOLOGIST SELECTION AND QUALIFICATIONS<sup>20</sup>**

**BIO-1** The project owner shall submit the resume of the proposed Designated Biologist, with at least three references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval. The Designated Biologist must meet all qualifications as stated within the U.S. Fish and Wildlife Service's (USFWS's) Biological Opinion (BO) for the HHSEGS project. Those qualifications at a minimum shall include at least three references and contact information.

**Verification:** The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;
3. Have at least one year of field experience with biological resources found in or near the project area;
4. Meet the current USFWS Authorized Biologist qualifications criteria (USFWS 2008), demonstrate familiarity with protocols and guidelines for the desert tortoise, and be approved by the USFWS; and
5. Possess a California ESA Memorandum of Understanding pursuant to Section 2081(a) for desert tortoise.
6. In lieu of the above requirements, the resume shall demonstrate to the satisfaction of BLM's Authorized Officer and the CPM, in consultation with CDFG and USFWS, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the conditions of certification.

**Verification:** —No less than 90 days prior to the start of any project-related ground disturbing activity, the project owner shall provide the CPM and CDFG a copy of the Commission Designated Biologist (= USFWS Authorized Biologist(s)) selection for the

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<sup>20</sup> USFWS <[www.fws.gov/ventura/speciesinfo/protocols\\_guidelines/docs/dt](http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt)> designates biologists who are approved to handle tortoises as "Authorized Biologists." Such biologists have demonstrated to USFWS that they possess sufficient desert tortoise knowledge and experience to handle and move tortoises appropriately, and have received USFWS approval. Authorized Biologists are permitted to then approve specific monitors to handle tortoises, at their discretion. The California Department of Fish and Game (CDFG) must also approve such biologists, potentially including individual approvals for monitors approved by the Authorized Biologist. Designated Biologists are the equivalent of Authorized Biologists. Only Designated Biologists and certain Biological Monitors who have been approved by the Designated Biologist would be allowed to handle desert tortoises.

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HHSEGS project and a copy of the above specified qualifications or the qualifications as required by the federal Biological Opinion. The project owner shall submit the specified information to the CPM and CDFG within 1 (one) week of receipt from the USFWS. No site or related ground disturbing activities shall commence until the appropriate number of approved Designated Biologist(s) is/are available to be on site.

If a Designated Biologist needs to be replaced, copies of the above specified information of the proposed replacement, as well as the USFWS new designated Authorized Biologists (= Commission title of Designated Biologist) for the HHSEGS project must be submitted to the CPM and CDFG within 48 hours of receipt of USFWS's authorization of a new Designated Biologist for the HHSEGS project site. In an emergency, the project owner shall immediately notify the CPM, CDFG, and USFWS to discuss the qualifications and approval of a short-term replacement, and/or enact any emergency provisions as specified in the USFWS Biological Opinion for the HHSEGS project.

118. Page 4.2-183 through 185, BIO-2. Please consider the following changes. Remove items 6 and 7 since they are a SWPPP responsibility not a DB responsibility. Remove items 8 and 9 because they are covered in the BRMIMP.

**DESIGNATED BIOLOGIST DUTIES**

**BIO-2** The project owner shall ensure that the Designated Biologist performs the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, or other activities as otherwise directed by the CPM. The Designated Biologist may be assisted by the approved Biological Monitor(s) but remains the contact for the project owner and the CPM.

**Verification:** The Designated Biologist Duties shall include the following:

1. Advise the project owner's Construction and Operation Managers on the implementation of the biological resources conditions of certification;
2. Approve and submit the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to the CPM;
3. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special-status species or their habitat;
4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way;



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- ~~6. Inspect heliostat fields after rain events for presence of standing water in planned retention area and document the intensity and duration of the rain event via rain collectors. At least two collectors shall be placed within the project boundaries, one in each solar field, and marked on all project planning maps. The perimeter of the ponded area shall be mapped with GPS, and all above information, including readings of rain collectors and photographic documentation must be included within Monthly Compliance Reports;~~
- ~~7. Determine and oversee implementation of remedial actions any time water has been observed standing onsite for 24 hours. The Designated Biologist shall initiate remedial methods no later than 24 hours after standing water has been observed on the project site. Remedial methods may include grading, pumping, spraying, tilling, or any other means to disperse or ensure evaporation and/or absorption of standing water. Other remedial efforts may be determined in conjunction with CPM review and approval. Descriptions of remedial efforts, including photo documentation, and discussion of results of remedial efforts must be included in the Monthly Compliance Report;~~
8. Notify the project owner and the CPM of any non-compliance with any biological resources condition of certification;
9. Respond directly to inquiries of the CPM and Biological Resources Staff regarding biological resource issues;
- ~~10. Respond immediately to reports of onsite kit fox mortality or injury, and to the extent possible, reports of dead or injured kit fox offsite and immediately adjacent the project boundaries or on access roads, notify the CDFG and CPM within 24 hours, and undertake restorative and/or disease prevention actions as specified within the American Badger and Kit Fox Management Plan, or as directed by the CDFG, with copies of all CDFG guidance provided to the CPM within 24 hours of receipt;~~
- ~~11. Maintain compliance with the provisions of the Avian, Bat, and Golden Eagle Protection Plan, USFWS Golden Eagle Incidental Take Permit (if issued), and/or any other directions from the USFWS, CDFG, or CPM with respect to golden eagle, and special status birds and bats.~~
12. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Compliance Report;
13. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and USFWS guidelines on desert tortoise surveys and handling procedures  
<[www.fws.gov/ventura/speciesinfo/protocols\\_guidelines](http://www.fws.gov/ventura/speciesinfo/protocols_guidelines)>, and; and
14. Maintain the ability to be in regular, direct communication with the CPM and representatives of CDFG and USFWS including notifying these agencies of dead or



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injured listed species and reporting special-status species observations to the California Natural Diversity Data Base.

**Verification:**—The Designated Biologist shall submit in the Monthly Compliance Report to the CPM and copies of all written reports and summaries that document biological resources compliance activities. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his/her duties cease, as approved by the CPM.

119. Page 4.2-185, BIO-3. Please consider the following changes to BIO-3. Please remove the last sentence in the verification section because USFWS does not approve wildlife monitors.

**BIOLOGICAL MONITOR(S) SELECTION AND QUALIFICATIONS**

**BIO-3** The project owner's approved Designated Biologist shall submit the ~~resume, at least three references, and contact information~~ USFWS Desert Tortoise Authorized Biologist Request Forms of the proposed Biological Monitor(s) to the CPM. The ~~resume~~ Forms shall demonstrate, to the satisfaction of the CPM the appropriate education and experience to accomplish the assigned biological resource tasks. The Biological Monitor is the equivalent of the USFWS designated Desert Tortoise Monitor (USFWS 2008).

**Verification:** For those Biological Monitor(s) who have previously not worked on Commission approved projects, training by the Designated Biologist shall include familiarity with the conditions of certification, BRMIMP, WEAP, and USFWS guidelines on desert tortoise surveys and handling procedures  
[www.fws.gov/ventura/speciesinfo/protocols\\_guidelines](http://www.fws.gov/ventura/speciesinfo/protocols_guidelines)

**Verification:**—The project owner shall submit the specified information to the CPM for approval at least 30 days prior to the start of any project-related site disturbance activities. The Designated Biologist shall submit a written statement to the CPM confirming that individual Biological Monitor(s) has been trained including the date when training was completed. If additional biological monitors are needed during construction the specified information shall be submitted to the CPM and for approval at least 10 days prior to their first day of monitoring activities, ~~or within 24 hours of receipt of USFWS decision approving acceptability as tortoise monitors, whichever comes sooner.~~

120. Page 4.2-185 and 186, BIO-4: The Applicant has no proposed changes to BIO-4.
121. Page 4.2-186, BIO-5. Please consider making the following changes to BIO-5.

**DESIGNATED BIOLOGIST AND BIOLOGICAL MONITOR AUTHORITY**

**BIO-5** The project owner's construction/operation manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources conditions of certification.

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The Designated Biologist shall have the authority to immediately stop any activity that is not in compliance with these conditions and/or order any reasonable measure to avoid unauthorized take of an individual of a listed species. If required by the Designated Biologist and Biological Monitor(s) the project owner's construction/operation manager shall halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist.

**Verification:** The Designated Biologist shall:

1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;
2. Inform the project owner and the construction/operation manager when to resume activities; and
3. Notify the CPM and CDFG within 24 hours if there is a halt of any activities at the direction of the Designated Biologist pursuant to this Condition of Certification and advise them of any corrective actions that have been taken or will be instituted as a result of the work stoppage.

If the Designated Biologist is unavailable ~~for direct consultation~~, the Biological Monitor shall act on behalf of the Designated Biologist.

The project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM immediately (and no later than the morning following the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the project owner, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

122. Page 4.2-186 through 188, BIO-6: Please consider making the following changes to BIO-6. First paragraph., this is the responsibility of the project owner especially since the WEAP covers several discipline areas. In addition the WEAP does not need to be given to delivery personnel who stay on paved roads that have been tortoise fenced. Item 5 can be deleted because flux impacts will be incorporated into the WEAP and not just given to operations personnel. The proposed revisions to item 6 are consistent with the way smoking is handled at Ivanpah SEGS.

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**WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)**

**BIO-6** The ~~Designated Biologist~~ project owner shall develop and implement project-site-specific Worker Environmental Awareness Program (WEAP). The WEAP shall be administered to all onsite personnel and agency staff including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, and subcontractors, ~~and delivery personnel~~. The WEAP shall be implemented during site mobilization, ground disturbance, grading, construction, operation, and closure.

**Verification:** The WEAP shall:

1. Be developed by or in consultation with the Designated Biologist, be responsive of timely CPM, CDFG and/or input, and consist of an on-site or training center presentation in which supporting written material and electronic media, including photographs of protected species, is made available to all participants. The training presentation shall be made available in Spanish and English; ~~the language best understood by the participants~~;
2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that no snakes, reptiles, or other wildlife shall be intentionally harmed (unless posing a reasonable and immediate threat to humans);
3. Place special emphasis on desert tortoise, including information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;
4. Provide pictures of desert tortoise, golden eagles, ~~nesting bird~~, American badger, kit fox, and burrowing owl, provide information on sensitivity to human activities, legal protection, reporting requirements, and how to identify construction avoidance zones for these species as marked by flagging, staking, or other means, also describe the protections for bird nests and provide information as described above;
5. ~~Provide overview [for operational staff] of potential impacts to avian species from energy flux created during operations phase, reporting requirements, and protection measures;~~
6. Include a discussion of fire prevention measures to be implemented by workers during Project activities and request workers to : a) use designated smoking areas and dispose of cigarettes and cigars in appropriate containers ~~and not leave them on the ground or buried;~~ b) keep vehicles on graveled or well maintained roads at all times to prevent vehicle exhaust systems from coming in contact with roadside weeds; ~~c) use and maintain approved spark arresters on all power equipment, and d) keep a fire extinguisher on hand at all times;~~

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7. Present the meaning of various temporary and permanent habitat protection measures;
8. Identify whom to contact if there are further comments and questions about the material discussed in the program; and
9. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist, and documented within the Monthly Compliance Report.

At least 60 days prior to the start of any project-related site disturbance activities, the project owner shall provide to the CPM ~~(for review and approval, and to the CDFG and/or USFWS for review and comment)~~, electronic copies of the WEAP and all supporting written materials and/or electronic media prepared by the project owner. Designated Biologist and a resume of the person(s) administering the program. ~~At least 30 days prior to the start of any project-related ground-disturbing activities, Within 30 days of approval of the WEAP by the CPM,~~ the project owner will provide two copies of the final WEAP to the CPM and implement the training for all workers.

The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date.

Training acknowledgement forms signed during construction shall be kept on file by the project owner for at least six months after the start of commercial operation.

Throughout the life of the project, the worker education program shall be repeated annually for permanent employees, and shall be routinely administered within one week of arrival to any new construction personnel, foremen, contractors, subcontractors, and other personnel potentially working within the project area. Upon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection measures. These forms shall be maintained by the project owner and shall be made available to the CPM upon request. Workers shall receive and be required to visibly display a hardhat sticker or certificate that they have completed the training.

During project operation, signed statements for operational personnel shall be kept on file for six months following the termination of an individual's employment.

123. Page 4.2-188 through 190, BIO-7: Please consider making the following changes to BIO-7. Part of item 3 has been deleted because it is redundant. Item 5 has been deleted because it is redundant. Item 6 has been deleted because the individual resource maps will include that information. Items 8, 9, 10 have been deleted because individual resource plans will provide monitoring methodology and frequency as required. Item 11 was deleted because that information will be included in the Facility Closure Plan.

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**BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION AND MONITORING PLAN  
(BRMIMP)**

**BIO-7** The project owner shall develop and implement a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) for the project. The BRMIMP shall incorporate avoidance and minimization measures described in final versions of the Desert Tortoise Translocation Plan, the USFWS Biological Opinion for the HHSEGS project, the Raven Management Plan, ~~the American Badger and Kit Fox Management Plan~~, the Avian, Bat Protection Plan, and Golden Eagle Protection Plan, Burrowing Owl Mitigation and Monitoring Plan, ~~Impact Avoidance and Minimization Measures~~, and Closure, Revegetation, and Reclamation Plan.

**Verification:** The BRMIMP shall be prepared in consultation with the Designated Biologist and include the following:

1. All biological resources mitigation, monitoring, and compliance measures proposed by the project owner and approved by the Commission;
2. All biological resources mitigation, monitoring, and compliance measures specified in the conditions of certification;
3. All biological resource mitigation, monitoring and compliance measures required in state and federal agency terms and conditions ~~including but not limited to: USFWS Biological Opinion, USFWS Golden Eagle Conservation Permit (if issued), U.S. Army Corps of Engineers 404 Certification, 401 Certification from the Lahontan Regional Water Quality Control Board, California Department of Fish and Game Lake and Streambed Alteration Agreement, and a Food and Agricultural Code Section 80001 native plant harvesting permit~~;
4. Procedures for collapsing inactive dens, monitoring active dens, and strategies for passive relocation for any badger and kit fox animals or dens identified during construction as a result of surveys conducted pursuant to Condition BIO-14;
5. ~~All~~ A description and maps of sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation, and closure;
6. ~~All required mitigation measures for each sensitive biological resource and remedial actions for standing water onsite, including known or suspected disease outbreaks on the project site;~~
7. ~~All locations on a map, at an approved scale, of sensitive biological resource areas and two rain collectors subject to disturbance and areas requiring temporary protection and avoidance during construction and operation;~~
8. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities; include one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project

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construction. Provide planned timing of aerial photography and a description of why times were chosen. Provide a final accounting of the before/after acreages and a determination of whether additional habitat compensation is necessary in the Construction Termination Report;

~~9. Duration for each type of monitoring and a description of monitoring methodologies and frequency;~~

~~10. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;~~

~~11. All performance standards and remedial measures to be implemented if performance standards are not met;~~

~~12. A discussion of biological resources related facility closure measures; and~~

13. A process for proposing plan modifications to the CPM.

**Verification:** —The project owner shall submit two copies of the draft BRMIMP to the CPM for review and approval at least 60 days prior to start of any project-related site disturbance activities. Within 30 days of receipt, the CPM will notify the project owner of the BRMIMP's acceptability. No less than 30 days prior to any project-related ground disturbing activities, the final revised BRMIMP shall be submitted to the CPM. No ground disturbance may occur prior to approval of the final BRMIMP by the CPM. The project owner shall have 14 days to address CPM's comments and provide the CPM with 2 hard copies of the revised BRMIMP.

If there are any federal permits that have not yet been received when the BRMIMP is first submitted, these federal permits shall be submitted to the CPM within five days of their receipt, and the BRMIMP shall be ~~revised or~~ supplemented to reflect the federal permit condition within at least 10 days of their receipt by the project owner.

The project owner shall notify the CPM no less than five working days before implementing any modifications to the approved BRMIMP.

Any changes to the ~~approved~~ BRMIMP must be approved by the CPM ~~and~~ in consultation with appropriate agencies to ensure no conflicts exist.

Implementation of BRMIMP measures (construction activities that were monitored, species observed) will be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's site mobilization, ground disturbance, grading, and construction phases, and which mitigation and monitoring items are still outstanding.

124. Pages 4.2-190 through 195, BIO-8: Much of BIO-8 is redundant and can be deleted. Item 1, has been revised to make it more workable. Spoil placement restrictions limit placement

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of topsoil into areas without native vegetation. This will not be practical or feasible given that there is native vegetation throughout almost the entire site (although there are many noxious weeds). It is therefore not feasible to limit spoil placement to areas without native vegetation. Item 4 is redundant with the Desert Tortoise Plan and conditions BIO-1, 2, and 9. Having the DB or BM walk in front of equipment should only be required for activities outside of fenced and cleared areas. The DB should be on hand when grubbing and grading is initially done on surveyed/cleared/fenced areas, but doesn't have to be with the equipment. Item 5 was dropped because there will be separate plans for removing all sensitive species. Salvage is primarily a BLM requirement. There is no requirement to salvage common wildlife species. Item 6 was deleted because there is no roosting bat habitat onsite. Any extent that bats would be affected would be addressed in the Avian and Bat Protection Plan (BIO-15). Item 7 has been deleted because all construction activities in California on the transmission line and gas pipeline will be on the plant site. Item 8 has been deleted because it is redundant with BIO-18 and HAZ-1. Item 9 has been deleted because it is redundant with VIS-3 and 6. Item 10 has been deleted. It should be moved to BIO-7 and should relate to all wildlife. The PSA says that pipes will be capped but does not specify any other details. This is an insufficient level of detail and is not possible to implement for a project of this scale. Item 11 is also redundant and covered by BIO-1, 2, 9 and 10. Item 12 should be moved to BIO-7 and covered as part of the BRMIMP. Items 13 and 14 are redundant and covered in BIO-13, AQ-SC2, and SOILS-1, 2, 3 and 4. Item 15 is also addressed in AQ-SC5, HAZ-3, and WASTE-6. Item 16 is covered in the Desert Tortoise plan, Raven Management Plan (BIO-13) and the Avian and Bat Protection Plan (BIO-15). Item 17 is covered in the Desert Tortoise plan, Raven Management Plan (BIO-13) and the WEAP. It should be noted that rather than having "all trash and food-related waste [i.e., garbage] shall be placed in self-closing containers and removed daily from the site." it should only be required that garbage is placed in containers with lids and that it need only be removed weekly. Item 18 is not needed because it is covered in the Weed Management Plan and AQ-SC3. As we discussed at the workshop, the project owner should only be responsible that vehicles entering the worksite be clean. Item 19 should be deleted because it is not practical for this site. Most of seeds and microbial activity are in the first 2 inches and much of the topsoil in portions of the site is infested with noxious weeds. Stockpiling may do more harm than good with salvaging and resspreading weed seeds. Item 20 is covered in SOILS-1 to 4 and the SWPPPs. Remove Item 21 since these activities are not considered construction and are permitted under the Warren Alquist Act Section 25105. Item 22 should be removed because it is covered in AQ-SC2, 3, and 4. Item 22d, requires the establishment of a vegetative ground cover or creation of stabilized surfaces on all unpaved areas at each of the construction sites within 21 days after active construction operations have ceased. The 21-day requirement is not a feasible timeframe within which to commence restoration. This could also require that restoration occur in a less than optimum time frame, for example. The last sentence of the last paragraph is not needed because that information will be provided in the monthly compliance report.



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**GENERAL IMPACT AVOIDANCE AND MINIMIZATION MEASURES**

**BIO-8** The project owner shall undertake the following measures to manage the construction site and related facilities in California in a manner to avoid or minimize impacts to biological resources.

**Verification:** The project owner shall undertake the following measures:

1. Limit Disturbance Area. ~~The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) To clearly delineate the project footprint, boundaries shall be delineated with stakes and flagging prior to construction activities in consultation with the Designated Biologist. Spoils shall be stockpiled in disturbed areas lacking native vegetation and which do not provide habitat for special-status species. Parking areas, staging and disposal site locations shall also be located in areas without native vegetation or special-status species habitat.~~ All disturbances, vehicles, and equipment shall be confined to the flagged areas.
2. Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around will do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads (e.g. new spur roads) or the construction zone, the route will be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.
3. Minimize Traffic Impacts. Vehicular traffic during project construction and operation shall be confined to existing routes of travel to and from the project site, and cross country vehicle and equipment use outside designated work areas shall be prohibited. With the exception of the dirt roads that run between Tecopa Road and the project site, overland vehicle traffic shall be prohibited. The speed limit shall not exceed 25 miles per hour within the project area, on maintenance roads for linear facilities, or on dirt access roads to the HHSEGS site. Vehicles shall abide by posted speed limits on paved roads.
4. ~~Monitor During Construction. The Designated Biologist or Biological Monitor shall be present at the construction site during all project activities that have potential to disturb soil, vegetation, and wildlife. In areas that could support desert tortoise or any other sensitive wildlife species, the USFWS approved Designated Biologist or Biological Monitor shall walk immediately ahead of equipment during brushing and grading activities.~~
5. ~~Salvage Wildlife during Clearing and Grubbing. The Designated Biologist or Biological Monitor shall salvage and relocate sensitive wildlife during clearing and grading operations. The species shall be salvaged when conditions will not jeopardize the health and safety of the monitor and relocated off site habitat.~~
6. ~~Avoid Roosting Bats. The project owner shall minimize disturbance to roosting bats. If night or day roosting bats are identified in project structures they shall not be disturbed and a 100 foot non-disturbance buffer shall be placed around~~

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the bats. If the Designated Biologist, in consultation with a qualified bat biologist, determines roosting bats consist of a non-breeding roost the individuals shall be safely evicted, under the direction of a qualified bat biologist. The CPM and CDFG shall be notified of any bat evictions within 48 hours. Maternity colonies shall not be disturbed. The CPM shall be notified within 48 hours of any active nurseries that are identified within the construction area.

7. ~~Minimize Impacts of Transmission/Pipeline Alignments, Roads, and Staging Areas.~~ For construction activities outside of the plant site (transmission line, pipeline alignments) access roads, pulling sites, and storage and parking areas shall be designed, installed, and maintained with the goal of minimizing impacts to native plant communities and sensitive biological resources. Transmission lines and all electrical components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) *Suggested Practices for Avian Protection on Power Lines* (APLIC 2006) and *Mitigating Bird Collisions with Power Lines* (APLIC 2004) to reduce the likelihood of bird electrocutions and collisions.
8. ~~Avoid Use of Toxic Substances.~~ Road surfacing and sealants as well as soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants. Anticoagulants shall not be used for rodent control. Pre-emergents and other herbicides with documented residual toxicity shall not be used. Herbicides shall be applied in conformance with federal, State, and local laws and according to the guidelines for wildlife safe use of herbicides in **BIO-18** (Weed Management Plan).
9. ~~Minimize Lighting Impacts.~~ Facility lighting shall be designed, installed, and maintained to prevent side casting of light towards wildlife habitat.
10. Cap Vertical Pipes. All vertical pipes greater than 4 inches in diameter shall be capped to prevent the entrapment of birds.
11. Avoid Vehicle Impacts to Desert Tortoise. Parking and storage shall occur within the area enclosed by desert tortoise exclusion fencing to the extent feasible. No vehicles or construction equipment parked outside the fenced area shall be moved prior to an inspection of the ground beneath the vehicle for the presence of desert tortoise. If a desert tortoise is observed, it shall be left to move on its own. If it does not move within 15 minutes, a Designated Biologist or Biological Monitor under the Designated Biologist's direct supervision may remove and relocate the animal to a safe location if temperatures are within the range described in the USFWS' 2009 Desert Tortoise Field Manual ([http://www.fws.gov/ventura/speciesinfo/protocols\\_guidelines](http://www.fws.gov/ventura/speciesinfo/protocols_guidelines)). All access roads outside of the fenced project footprint shall be delineated with temporary desert tortoise exclusion fencing on either side of the access road, unless otherwise authorized by the CPM.

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~~12. Avoid Wildlife Pitfalls.~~

- ~~a. Backfill Trenches. At the end of each work day, the Designated Biologist shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled. If backfilling is not feasible, all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with desert tortoise exclusion fencing. All trenches, bores, and other excavations outside the areas permanently fenced with desert tortoise exclusion fencing shall be inspected periodically, but no less than three times, throughout the day and at the end of each workday by the Designated Biologist or a Biological Monitor. Should a tortoise or other wildlife become trapped, the Designated Biologist or Biological Monitor shall remove and relocate the individual as described in the Desert Tortoise Relocation/Translocation Plan. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.~~
- ~~b. Avoid Entrapment of Desert Tortoise. Any construction pipe, culvert, or similar structure with a diameter greater than 3 inches, stored less than 8 inches aboveground, and within desert tortoise habitat (i.e., outside the permanently fenced area) for one or more nights, shall be inspected for tortoises before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on pipe racks. These materials would not need to be inspected or capped if they are stored within the permanently fenced area after the clearance surveys have been completed.~~

~~13. Minimize Standing Water. Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement shall use the minimal amount needed to meet safety and air quality standards in an effort to prevent the formation of puddles, which could attract desert tortoises and common ravens to construction sites. A Biological Monitor shall patrol these areas to ensure water does not puddle and attract desert tortoise, common ravens, and other wildlife to the site and shall take appropriate action to reduce water application where necessary.~~

~~14. Minimize Standing Water in the Retention Basin. Water shall be prohibited from collecting or pooling for more than 24 hours after a storm event within the project retention basin. Standing water within the retention basin shall be removed, pumped, raked, or covered. Alternative methods or the time water is allowed to pool may be approved with the approval of the CPM.~~

~~15. Minimize Spills of Hazardous Materials. All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Designated Biologist shall be informed of any hazardous spills immediately as directed in the project Hazardous Materials Plan. Hazardous spills shall be immediately cleaned up and the contaminated soil properly~~

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disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.

- ~~16. Dispose of Road-killed Animals. Road-killed animals or other carcasses detected on Tecopa Road and other project roads within one mile of the project site shall be picked up immediately and delivered to the Biological Monitor. For special-status species roadkill, the Biological Monitor shall contact USFWS and CDFG within 1 working day of receipt of the carcass for guidance on disposal or storage of the carcass. The Biological Monitor shall report the special-status species record as described in Condition of Certification BIO-2.~~
- ~~17. Worker Guidelines. During construction all trash and food related waste shall be placed in self-closing containers and removed daily from the site. Workers shall not feed wildlife or bring pets to the project site. Except for law enforcement or security personnel, no workers or visitors to the site shall bring firearms or weapons.~~
- ~~18. Avoid Spread of Noxious Weeds. The project owner shall implement the following Best Management Practices during construction and operation to prevent the spread and propagation of noxious weeds:~~
  - ~~a. Limit the size of any vegetation and/or ground disturbance to the absolute minimum and limit ingress and egress to defined routes;~~
  - ~~b. Prevent spread of non-native plants via vehicular sources by implementing Trackclean™ or other methods of vehicle cleaning for vehicles coming and going from construction sites. Earth-moving equipment shall be cleaned prior to transport to the construction site;~~
  - ~~c. Use only weed free straw, hay bales, and seed for erosion control and sediment barrier installations, and~~
  - ~~d. Avoid using invasive non-native species in landscaping plans and erosion control.~~
- ~~19. Stockpile Topsoil. To increase chances for revegetation success, topsoil shall be stockpiled from the project site and along project linear features for use in revegetation. The top six (6) to eight (8) inches of native topsoil from the least disturbed locations and only areas that are relatively free of noxious weeds shall be used as a source of topsoil. All other elements of topsoil use shall be as described in Rehabilitation of Disturbed Lands in California (Newton and Claassen 2003, pp. 39-40).~~
- ~~20. Implement Erosion Control Measures. Standard erosion control measures shall be implemented for all phases of construction and operation where sediment run-off from exposed slopes threatens to enter "Waters of the State". Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream. All disturbed soils and roads within the project site shall be stabilized to reduce erosion potential, both during and~~

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~~following construction. Areas of disturbed soils (access and staging areas) with slopes toward a drainage shall be stabilized to reduce erosion potential.~~

- ~~21. Monitor Ground Disturbing Activities Prior to Site Mobilization. If ground-disturbing activities are required prior to site mobilization, such as for geotechnical borings or hazardous waste evaluations, a Designated Biologist or Biological Monitor shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.~~
- ~~22. Control and Regulate Fugitive Dust. To reduce the potential for the transmission of fugitive dust the owner shall implement dust control measures. These shall include:~~
- ~~a. The owner shall apply non-toxic soil binders, equivalent or better in efficiencies than the CARB-approved soil binders, to active unpaved roadways, unpaved staging areas, and unpaved parking area(s) throughout construction to reduce fugitive dust emissions.~~
  - ~~b. Water the disturbed areas of the active construction sites at least three times per day and more often if uncontrolled fugitive dust is noted.~~
  - ~~c. Enclose, cover, water twice daily, and/or apply non-toxic soil binders according to manufacturer's specifications to exposed piles with a 5% or greater silt content. Agents with known toxicity to wildlife shall not be used unless approved by the CPM.~~
  - ~~d. Establish a vegetative ground cover (in compliance with biological resources impact mitigation measures above) or otherwise create stabilized surfaces on all unpaved areas at each of the construction sites within 21 days after active construction operations have ceased.~~
  - ~~e. Increase the frequency of watering, if water is used as a soil binder for disturbed surfaces, or implement other additional fugitive dust mitigation measures, to all active disturbed fugitive dust emission sources when wind speeds (as instantaneous wind gusts) exceed 25 mph.~~

**Verification:** All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. ~~Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.~~

125. Pages 4.2-195 through 198. Please consider the following edits. Most were based on ISEGS. For example, Item 2 has been revised to allow areas smaller than the entire solar field to be cleared. It also provides flexibility, which is important for at thorough clearance. The last sentence in #3 is redundant with #2.

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**DESERT TORTOISE CLEARANCE SURVEYS AND EXCLUSION FENCING**

**BIO-9** The project owner shall undertake appropriate measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to desert tortoise. Methods for clearance surveys, fence specification and installation, tortoise handling, artificial burrow construction, egg handling and other procedures shall be consistent with those described in the USFWS' 2009 *Desert Tortoise Field Manual* [http://www.fws.gov/ventura/speciesinfo/protocols\\_guidelines](http://www.fws.gov/ventura/speciesinfo/protocols_guidelines) or more current guidance provided by CDFG and USFWS.

**Verification:** The project owner shall also implement all terms and conditions described in the Biological Opinion for the project prepared by USFWS. These measures include, but are not limited to, the following:

1. Desert Tortoise Exclusion Fence Installation. To avoid impacts to desert tortoises, ~~permanent~~ desert tortoise exclusion fencing shall be installed along the permanent perimeter which may or may not be combined with the security fence. Temporary tortoise fencing may be installed or monitoring may be used prior to the installation of permanent fencing subject to the approval of the CPM. and temporarily installed along the underground utility corridors in California. The proposed alignments for the permanent perimeter fence and utility rights-of-way fencing shall be flagged and surveyed within 24 hours prior to the initiation of fence construction. Clearance surveys of the perimeter fence and utility rights-of-way alignments shall be conducted by the Designated Biologist(s) using techniques approved by the USFWS and CDFG and may be conducted in any season with USFWS and CDFG approval. Biological Monitors may assist the Designated Biologist under his or her supervision with the approval of the CPM and USFWS. These fence clearance surveys shall provide 100 percent coverage of all areas to be disturbed and an additional transect along both sides of the fence line. This fence line transect shall cover an area approximately ~~60~~ 90 feet wide centered on the fence alignment. Transects for fence installation shall be no greater than ~~15-30~~ feet apart. All desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, shall be examined to assess occupancy of each burrow by desert tortoises and handled in accordance with the USFWS' 2009 *Desert Tortoise Field Manual*, or the most recent agency guidance with the approval of the CPM. Any desert tortoise located during fence clearance surveys shall be handled by the Designated Biologist(s) in accordance with the USFWS' 2009 *Desert Tortoise Field Manual* or the most recent agency guidance with the approval of the CPM.
- a. Timing, Supervision of Fence Installation. The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. Fencing may be installed during any time of the year. Fencing shall also be placed on the proposed temporary access roads in tortoise habitat unless otherwise approved by the CPM. The fence installation shall be supervised by the Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present. The CPM shall be notified within 48 hours of fence completion. If the project is constructed in

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phases, prior to the initiation of construction activities for each solar plant, the project owner shall enclose the boundary of the affected solar plant with permanent chain link fencing for security purposes and permanent desert tortoise exclusion fencing.

- b. Fence Material and Installation. The permanent tortoise exclusionary fencing shall be constructed in accordance with the USFWS' 2009 *Desert Tortoise Field Manual* (Chapter 8 – Desert Tortoise Exclusion Fence) or the most recent agency guidance with the approval of the CPM.
- c. Temporary Construction Activities: Temporary construction activities outside of the permanent fencing shall be temporarily fenced to fully encompass work area prior to ground disturbing activities to prevent desert tortoise entry during construction unless biological monitoring is more beneficial to desert tortoise or other wildlife. Temporary fencing must be capable of preventing desert tortoises from entering the work area, with supporting stakes sufficiently spaced to maintain fence integrity. The Designated Biologist or Biological Monitor shall be present to supervise all construction activities occurring within areas bounded by temporary fencing.
- d. Security Gates. Security gates shall be designed with minimal ground clearance to deter ingress by tortoises. The gates may be electronically activated to open and close immediately after the vehicle(s) have entered or exited to prevent the gates from being kept open for long periods of time. ~~Cattle grating~~ Tortoise guards designed to safely exclude desert tortoise shall be installed at the gated entries to discourage tortoises from gaining entry.
- e. Fence Inspections. Following installation of the desert tortoise exclusion fencing for both the permanent site fencing and temporary fencing in the utility corridors, the fencing shall be regularly inspected. Any fencing, whether temporary or permanent, that is installed when tortoises are active, will be checked 2 to 3 times daily for 2 weeks to ensure that no tortoise is fence-walking to the point of exhaustion or overexposure. If midday temperatures are above thresholds at which tortoises must go underground to escape heat (approximately 42°C ground temperature), then one of the fence checks should occur prior to this threshold being reached. This same process should occur for the first 2 to 3 weeks of the activity season if the fence is installed in winter, when tortoises are underground. ~~If tortoise were moved out of harm's way during fence construction, permanent and temporary fencing shall be inspected at least two times a day for the first 7 days to ensure a recently moved tortoise has not been trapped within the fence.~~ Thereafter, permanent fencing shall be inspected monthly and during and within 24 hours following all major rainfall events. A major rainfall event is defined as one for which flow is detectable within the fenced drainage. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within 48 hours of observing damage. Inspections of permanent site fencing shall occur for the life of the project. Temporary fencing shall be inspected weekly and; more often, as needed, where activities are



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occurring in the vicinity that could damage the fence. (e.g., parking areas).  
Where drainages intersect the fencing, temporary fencing shall be inspected  
during and within 24 hours following major rainfall events. All temporary fencing  
shall be repaired immediately upon discovery and, if the fence may have  
permitted tortoise entry while damaged, the Designated Biologist shall inspect the  
area for tortoise.

2. Desert Tortoise Clearance Surveys within the Plant Site. Following construction of the ~~permanent perimeter security fence and the attached tortoise exclusion fence~~, the ~~permanently fenced power plant site area~~ shall be cleared of tortoises by the Designated Biologist, who may be assisted by the Biological Monitors. Clearance surveys shall be conducted in accordance with the USFWS' 2009 Desert Tortoise Field Manual (Chapter 6 – Clearance Survey Protocol for the Desert Tortoise – Mojave Population) ~~or the most recent agency guidance with the approval of the CPM and~~ shall consist of two surveys covering 100% the project area by walking transects no more than 15-feet apart. If a desert tortoise is located on the second survey, a third survey shall be conducted. Each separate survey shall be walked in a different direction to allow opposing angles of observation. Clearance, or parallel, but offset and, if possible, from the opposing direction. Clearance surveys of the power plant site may only be conducted when tortoises are most active ~~(April through May or September through October).~~ Surveys outside of these time periods require approval by USFWS and CDFG. Any tortoise located during clearance surveys of the power plant site shall be relocated ~~and monitored~~ in accordance with the Desert Tortoise Relocation/Translocation Plan (Condition of Certification BIO-10).
3. Burrow Searches. During clearance surveys all desert tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, shall be examined by the Designated Biologist, who may be assisted by the Biological Monitors, to assess occupancy of each burrow by desert tortoises and handled in accordance with the USFWS' 2009 Desert Tortoise Field Manual. ~~To prevent reentry by a tortoise or other wildlife, all confirmed non-active burrows shall be collapsed, once absence has been determined. Tortoises taken from burrows and from elsewhere on the power plant site shall be relocated or translocated as described in the Desert Tortoise Relocation/Translocation Plan.~~
4. Burrow Excavation/Handling. All potential desert tortoise burrows located during clearance surveys shall be excavated by hand (unless authorized by the CPM and USFWS), tortoises removed, and the burrows collapsed or blocked to prevent occupation by desert tortoises. All desert tortoise handling and removal, and burrow excavations, including nests, would be conducted by the Designated Biologist, who may be assisted by a Biological Monitor in accordance with the USFWS' 2009 Desert Tortoise Field Manual.
5. Monitoring Following Clearing. Following the desert tortoise clearance and removal from the power plant site ~~and utility corridors~~, workers and heavy equipment shall be allowed to enter the project site to perform clearing, grubbing, leveling, and trenching. A ~~Designated Biological Monitor~~ shall monitor clearing and grading

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activities to find and move tortoises missed during the initial tortoise clearance survey. Should a tortoise be discovered, it shall be relocated or translocated as described in the Desert Tortoise Relocation/Translocation Plan, ~~to an area approved by the Designated Biologist.~~

6. Reporting. The Designated Biologist shall record the following information for any desert tortoises handled: a) the locations (narrative and maps) and dates of observation; b) general condition and health, including injuries, state of healing and whether desert tortoise voided their bladders; c) location moved from and location moved to (using GPS technology); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled desert tortoise as described in the paragraph below. ~~Desert tortoise moved from within project areas shall be marked and monitored in accordance with the Desert Tortoise Relocation/Translocation Plan.~~

**Verification:** All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented during project construction and operation. Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of desert tortoise clearance surveys the Designated Biologist shall submit a report to the CPM, USFWS, and CDFG describing implementation of each of the mitigation measures listed above. The report shall include the desert tortoise survey results, capture, and release locations of any relocated desert tortoises, and any other information needed to demonstrate compliance with the measures described above. All of these measures will be done in accordance with the approved Desert Tortoise Relocation Plan (see Condition of Certification **BIO-10**, below).

126. Pages 4.2-198 through 4.23-200, BIO-10: Please move the Verification up and revise BIO-10 as follows:

**DESERT TORTOISE RELOCATION/TRANSLOCATION PLAN**

**BIO-10** The project owner shall develop and implement a Desert Tortoise Relocation/Translocation Plan (Pplan) that is consistent with current USFWS approved guidelines. The goal of the plan shall be to safely exclude desert tortoises from within the fenced project area and relocate/translocate them to suitable habitat capable of supporting them, while minimizing stress and potential for disease transmission. The plan shall be developed in consultation with the USFWS to ensure the document does not conflict with conditions issued under an Incidental Take Statement.

**Verification:** The plan shall include but not be limited to:

1. Translocation and Control Locations. The plan shall identify the proposed translocation recipient sites and control area. Sites shall be ranked based on the distance from the project site; distance from known hazards such as off highway vehicle locations, busy

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roads, or other known treats; proximity to existing populations; and known linkage areas. Translocation sites shall consider the value for recovery of local populations. The plan shall utilize the most recent USFWS guidance on translocation that includes ~~seven~~ required siting criteria. If moved outside their home range, t~~The current~~ translocation criteria include:

- a. The translocation site supports desert tortoise habitat suitable for all life stages.
  - b. Disease prevalence within the resident desert tortoise population is less than 20 percent.
  - c. The site is at least 10 km from major unfenced roads or highways. Distance from roads may be reduced if the proposed action includes provisions to install and maintain desert tortoise exclusion fencing as a minimization measure.
  - d. The site is within 40 km of the project site, with no natural barriers to movement between them, to ensure that the desert tortoises at the two sites were likely part of a larger mixing population and similar genetically.
  - e. The site occurs on lands where desert tortoise populations have been depleted or extirpated yet still support suitable habitat. Depleted areas may include lands adjacent to highways.
  - f. The site has no detrimental rights-of-way (ROWs) or other encumbrances.
  - g. The site will be managed for conservation so that potential threats from future impacts are precluded. In the project region, DWMAs, designated critical habitat units (CHUs), areas of critical environmental concern (ACECs), National Park Service lands, and BLM Wilderness Areas are managed for conservation.
2. Control Site. If moved outside their home range, t~~The plan shall consider the following~~ USFWS guidelines for the control site.
- a. be similar in habitat type/quality, desert tortoise population size/structure, and disease status to the recipient sites;
  - b. not have been previously used as a recipient site for other projects (unless the site has demonstrated carrying capacity); and
  - c. be a minimum distance of 10 km (6 miles) from an unfenced recipient site that has no substantial anthropogenic or natural barriers to prevent the interaction of control, resident, and translocated desert tortoises.
3. Host Population. If moved outside their home range, t~~The plan shall provide an~~ evaluation of the habitat quality on the translocation and control sites; provide a determination of existing tortoise density, and an assessment of the sites' ability to accommodate additional tortoises above baseline conditions.

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4. Holding Pens. If moved outside their home range, tThe plan shall provide information on the type of holding pens for quarantined translocated tortoises prior to their release into host populations. Pens shall be located on the project site in an area capable of ensuring the protection of the tortoises. The size of the pen shall be designed based on the expected number of desert tortoise that occur on the project site or in an area approved by the CPM. The pen shall contain adequate cover and be in an area supporting suitable soils for burrowing.
5. Tracking, Monitoring, Disease Testing, and Reporting. If moved outside their home range, tThe plan shall provide information on the use of tracking units (GPS) on tortoises from the project site, translocation site, and control site; provide information on the short and long term monitoring and reporting of control, translocated and host populations; provide information on disease testing for long distance translocated tortoises, host, and control sites; and, identify remedial actions should excessive predation or mortality be observed. The plan shall also include provisions for removing diseased tortoises; the development of quarantine pens; accommodating eggs hatchlings or juvenile tortoise and shall be consistent with the requirements of the Biological Opinion.

**Verification:**—At least 90 days prior to the start of any project-ground disturbing activity, the project owner shall submit the draft Desert Tortoise Relocation/Translocation Plan to the CPM for review and approval and to USFWS and CDFG for review and comment. No less than 30 days prior to the start of any project-ground disturbing activity, the project owner shall provide the CPM with the final version of a Desert Tortoise Relocation/Translocation Plan. No relocation/translocation activities may occur prior to approval of the final plan by the CPM. Any modifications to the approved plan shall be made only after approval by the CPM and in consultation with USFWS and CDFG.

Within 30 days after initiation of relocation and/or translocation activities, the Designated Biologist shall provide to the CPM for review and approval, a written report identifying which items of the plan have been completed, and a summary of all modifications to measures made during implementation of the plan. Written monthly progress reports shall be provided to the CPM for the duration of the plan implementation.

127. Page 4.2-200, BIO-11: This condition has been deleted by CEC Staff.
128. Pages 4.2-200 through 205, BIO-12: It has not been determined what mitigation will be required, and the level of specificity contained in the PSA is premature, given that the impacts analysis is still ongoing. Appropriate mitigation and mitigation ratios will be determined in coordination with the CEC. In addition, Applicant requests that justification or examples of precedent presented for ratios be provided. Therefore, those item have been deleted in this condition. The Applicant provided an analysis of the desert tortoise habitat as PSA Comments Set 1. A copy of the analysis is provided at the end of these comments for convenience.

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**DESERT TORTOISE COMPENSATORY MITIGATION**

**BIO-12** To fully mitigate for habitat loss and potential take of desert tortoise, the project owner shall provide compensatory mitigation for impacts to ~~3,258-3277~~ acres of habitat or whatever acreage is actually permanently impacted and included within ~~by~~ the project footprint. Impacts to areas supporting Mojave Desert scrub shall be mitigated at ratio of ~~TBD 3:1 ratio (1,611 acres) for and areas that support~~ shadscale scrub communities at a ratio of 1:1 (1,647 acres). The total compensatory land acquisition required to mitigate impacts to desert tortoise shall be ~~6,480~~ TBD acres or the ratio of lands actually impacted by the project footprint.

**Verification:**          The requirements for acquisition of the ~~6,480~~ TBD acres of compensation lands shall include the following:

1. Responsibility for Acquisition of Lands: The responsibility for acquisition of lands may be delegated by written agreement from the CPM to a third party, such as a non-governmental organization supportive of habitat conservation. Such delegation shall be subject to approval by the CPM, in consultation with USFWS and CDFG, prior to land acquisition, enhancement, or management activities. If habitat disturbance exceeds that described in this analysis, the project owner shall be responsible for funding acquisition, habitat improvements, and long-term management of additional compensation lands or additional funds required to compensate for any additional habitat disturbances. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat. ~~Water and mineral rights shall be included as part of the land acquisition.~~ Agreements to delegate land acquisition to CDFG or an approved third party and to manage compensation lands shall be implemented within ~~29~~ 18 months of the Energy Commission's License Decision.
2. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition to meet Energy Commission and CESA requirements shall:
  - a. be of equal or better habitat quality for desert tortoise and within the Eastern Mojave Recovery Unit or other location approved by the CPM in consultation with the CDFG and USFWS, ~~with potential to contribute to desert tortoise habitat connectivity and build linkages between desert tortoise designated critical habitat, known populations of desert tortoise, and/or other preserve lands;~~
  - b. provide habitat for desert tortoise with capacity to regenerate naturally when disturbances are removed;
  - c. ~~be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long term by a public resource agency or a non-governmental organization dedicated to habitat preservation;~~

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- d. be connected to lands currently occupied by desert tortoise, ideally with populations that are stable, recovering, or likely to recover;
  - e. ~~not have a history of intensive recreational use or other disturbance that might make habitat recovery and restoration infeasible;~~
  - f. ~~not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration; and~~
  - g. not contain hazardous wastes.
3. Review and Approval of Compensation Lands Prior to Acquisition. A minimum of 30 days ~~three months~~ prior to acquisition of the property, the project owner shall submit a formal acquisition proposal to the CPM, CDFG, and USFWS describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for desert tortoise in relation to the criteria listed above. Approval from the CPM, in consultation with CDFG and the USFWS, shall be required for acquisition of all parcels comprising the compensation acres.
4. Commission Mitigation Security: The project owner shall provide written verification to the CPM ~~and CDFG~~ with copies of the document(s) to the USFWS, to guarantee that an adequate level of funding is available to implement the Energy Commission Complementary Mitigation Measures described in this condition. These funds shall be used solely for implementation of the measures associated with the project. Alternatively, financial assurance can be provided to the CPM ~~and CDFG~~ in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("security") prior to initiating ground-disturbing project activities. Prior to submittal to the CPM, the security shall be approved by ~~CDFG and the CPM~~, in consultation with the CDFG and the USFWS, to ensure funding in the amount of \$TBD. This security amount was calculated as follows and may be revised upon completion of a Property Analysis Record (PAR) or PAR-like analysis of the proposed compensation lands:
- a. land acquisition costs for compensation lands, calculated at \$1,000/acre = ~~\$6,480,000~~ TBD;
  - b. costs of initial habitat improvements to compensation lands, calculated at \$250/acre = ~~\$1,620,000~~ TBD;
  - c. costs of establishing an endowment for long-term management of compensation lands, calculated at \$1,450/acre = ~~\$9,396,000~~ TBD;
  - d. costs associated with conducting required surveys, assessments for hazardous materials, escrow fees, third party administrative costs and agency costs to accept the parcel; calculated at ~~\$4,701,240.00~~ TBD (See Biological resource Table 9 for a breakdown of these costs).

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5. Unused or Restored Project Areas: The project owner shall receive a credit or refund of commission mitigation securities for all unused or restored project areas.
6. Compensation Lands Acquisition Conditions: The project owner shall comply with the following conditions relating to acquisition of the compensation lands after the CPM, in consultation with CDFG and the USFWS, has approved the proposed compensation lands and received security as applicable and as described above.
  - a. Preliminary Report: The project owner, or approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary documents for the proposed acquisition acres. All documents conveying or conserving compensation lands and all conditions of title/easement are subject to a field review and approval by CDFG and the CPM, in consultation with the USFWS, California Department of General Services and, if applicable, the Fish and Game Commission and/or the Wildlife Conservation Board.
  - b. Title/Conveyance: The project owner shall transfer fee title or a conservation easement to the compensation lands to CDFG under terms approved by CDFG. Alternatively, a non-profit organization qualified to manage compensation lands (pursuant to California Government Code section 65965) and approved by CDFG and the CPM may hold fee title or a conservation easement over the habitat mitigation lands. If the approved non-profit organization holds title, a conservation easement shall be recorded in favor of CDFG in a form approved by CDFG. If the approved non-profit holds a conservation easement, CDFG shall be named a third party beneficiary. If a Security is provided, the project owner or an approved third party shall complete the proposed compensation lands acquisition within 18 months of the start of project ground-disturbing activities.
  - c. Initial Habitat Improvement Fund. The project owner shall fund the initial protection and habitat improvement of the compensation lands. Alternatively, a non-profit organization may hold the habitat improvement funds if they are qualified to manage the compensation lands (pursuant to California Government Code section 65965) and if they meet the approval of CDFG and the CPM. If CDFG takes fee title to the compensation lands, the habitat improvement fund must go to CDFG.
  - d. Long-Term Management Endowment Fund. Prior to ground-disturbing project activities, the project owner shall provide to CDFG a capital endowment in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis that would be conducted for the compensation acres. Alternatively, a non-profit organization may hold the endowment fees if they are qualified to manage the compensation lands (pursuant to California Government Code section 65965) and if they meet the approval of CDFG and the CPM. If CDFG takes fee title to the compensation lands, the endowment must go to CDFG, where it would be held in the special deposit fund established pursuant to California Government Code section 16370. If the special deposit fund is not used to manage the endowment,



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the California Wildlife Foundation or similarly approved entity identified by CDFG shall manage the endowment for CDFG and with CDFG supervision.

- e. Interest, Principal, and Pooling of Funds. The project owner, CDFG and the CPM shall ensure that an agreement is in place with the endowment holder/manager to ensure the following conditions:
- i. Interest. Interest generated from the initial capital endowment shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFG designed to protect or improve the habitat values of the compensation lands.
  - ii. Withdrawal of Principal. The endowment principal shall not be drawn upon unless such withdrawal is deemed necessary by the CDFG or the approved third-party endowment manager to ensure the continued viability of the species on the compensation lands. If CDFG takes fee title to the compensation lands, monies received by CDFG pursuant to this provision shall be deposited in a special deposit fund established pursuant to Government Code section 16370. If the special deposit fund is not used to manage the endowment, the California Wildlife Foundation or similarly approved entity identified by CDFG would manage the endowment for CDFG with CDFG supervision.
  - iii. Pooling Endowment Funds. CDFG, or a CPM and CDFG approved non-profit organization qualified to hold endowments pursuant to California Government Code section 65965, may pool the endowment with other endowments for the operation, management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the endowment fund must be tracked and reported individually to the CDFG and CPM.
  - iv. Reimbursement Fund. The project owner shall provide reimbursement to CDFG or an approved third party for reasonable expenses incurred during title, easement, and documentation review; expenses incurred from other State or State-approved federal agency reviews; and overhead related to providing compensation lands.

The project owner is responsible for all compensation lands acquisition/costs, including but not limited to, title and document review costs, as well as expenses incurred from other State agency reviews and overhead related to providing compensation lands to the department or approved third party; escrow fees or costs; environmental contaminants clearance; and other site cleanup measures.

**Verification:** \_\_\_\_\_ No less than 30 days prior to beginning project ground-disturbing activities, the project owner shall provide written verification to the CPM that the security has been established in accordance with this condition of certification. No less than 90 days

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prior to acquisition of the property, the project owner shall submit a formal acquisition proposal to the CPM, CDFG, and USFWS describing the parcels intended for purchase.

The project owner, or an approved third party, shall complete and provide written verification of the proposed compensation lands acquisition within 18 months of the start of project ground-disturbing activities. Within 180 days of the land or easement purchase, as determined by the date on the title, the project owner, or an approved third party, shall provide the CPM, CDFG, and USFWS with a management plan for the compensation lands and associated funds. The CPM shall review and approve the management plan, in consultation with CDFG and the USFWS.

Within 90 days after completion of project construction, the project owner shall provide to the CPM and CDFG an analysis with the final accounting of the amount of habitat disturbed during project construction.

129. Pages 4.2-205 and 206: BIO-13: Please make the following edits: The 2<sup>nd</sup> paragraph of #2 and the last paragraph are unnecessary since they are included in the monthly compliance report. The due dates in the verification language have been made consistent with Ivanpah SEGS.

**RAVEN MONITORING, MANAGEMENT, CONTROL PLAN and FEE**

**BIO-13** The project owner shall design and implement a Raven Monitoring, Management, and Control Plan (Raven Plan) that is consistent with the most current USFWS-approved raven management guidelines. The goal of the Raven Plan shall be to minimize predation on desert tortoises by minimizing project-related increases in raven abundance.

**Verification:** The Raven Plan shall include but not be limited to:

1. Prepare and Implement a Raven Management Plan that includes the following:
  - a. Identify conditions associated with the project that might provide raven subsidies or attractants;
  - b. Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities;
  - c. Describe control practices for ravens;
  - d. Address monitoring and nest removal during construction and for the life of the project, and;
  - e. Discuss reporting requirements.
2. Contribute to the REAT Regional Raven Management Program. The project owner shall submit payment to the project sub-account of the REAT Account held by the National Fish and Wildlife Foundation (NFWF) to support the REAT Regional Raven Management Program. The amount shall be a one-time payment of \$105 per acre (~~3,258-3,096~~ acres = \$325,080) for a total of permanent disturbance plus a two percent fund management fee for a total of \$348,932.00~~\$331,582.00~~.

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~~For the first year of reporting the project owner shall provide quarterly reports describing implementation of the Raven Plan. Thereafter the reports shall be submitted annually for the life of the project.~~

**Verification:** ~~\_\_\_\_\_~~ At least 60 days prior to any project-related ground disturbance activities, the project owner shall submit the draft Raven Plan to the CPM for review and approval and CDFG and USFWS for review and comment. At least 30 days prior to start of any project-related ground disturbance activities, the project owner shall provide the CPM the ~~final~~ version of the Raven Plan. The CPM will determine the plans acceptability within 15 days of receipt of the plan. No ground disturbing activities may occur until the ~~final~~ plan is approved by the CPM. Any modifications to the approved Raven Plan must be approved by the CPM in consultation with USFWS and CDFG. The project owner shall notify the CPM no less than five working days before implementing any CPM approved modifications to the Raven Plan.

No fewer than ~~10-30~~ days prior to the start of any project-related ground disturbing activity, the project owner shall provide written verification to the CPM that the Raven Management Fee has been paid to NFWF.

~~Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval a report identifying which items of the Raven Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which items are still outstanding.~~

130. Pages 4.2-206 and 207, BIO-14: Detailed management plans for American Badger and Desert Kit Fox are not appropriate as the species are not protected under CESA or ESA, and the project would be engaged in activities regulated under California's mammal hunting regulations. This condition has also been revised to be consistent with Ivanpah SEGS.

**AMERICAN BADGER AND DESERT KIT FOX MANAGEMENT-PLANSURVEYS**

**BIO-14** Concurrent with the desert tortoise clearance survey, the Designated Biologist or Biological Monitors shall perform a preconstruction survey for badger and kit fox dens in the project area, including areas within 250 feet of all project facilities, utility corridors, and access roads. If badger and kit fox dens are found, each den shall be classified as inactive, potentially active, or definitely active. Inactive dens shall be excavated by hand and backfilled to prevent reuse by badgers. Potentially and definitely active dens shall be monitored by the Designated Biologist or Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) at the entrance. If no tracks are observed in the tracking medium after 3 nights, the den shall be excavated and backfilled by hand. If tracks are observed, the applicant shall develop and implement a trapping and relocation plan in consultation with the Designated Biologist and CDFG. BLM approval may be required prior to release of badgers on public lands.

~~The owner shall prepare and implement an American Badger and Desert Kit Fox Management Plan. The plan shall be prepared in accordance with the most current CDFG guidelines for these species. The Management Plan must be approved by the CPM prior to implementation, and shall contain the following provisions:~~

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~~Preconstruction surveys and mapping efforts: biological monitors shall perform pre-construction surveys for badger and kit fox dens in the project area, including areas within 250 feet of all project facilities, utility corridors, and access roads. If dens are detected, each den shall be classified as inactive, potentially active, or definitely active, including characterization of den type for kit fox (natal, pupping, likely satellite, atypical) per CDFG and/or CPM guidance, and mapped along with major project design elements.~~

~~Directions for collapse of inactive dens. Inactive dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badgers or kit fox. Potentially and definitely active dens shall not be disturbed during the whelping/pupping season (February 1—September 30).~~

~~Monitoring requirements. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights (during weather conditions favorable for detection) using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den shall be excavated and backfilled by hand. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger or kit fox from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers or kit fox are trapped in the den.~~

~~Passive relocation strategies. The management plan shall contain, at a minimum, several strategies to passively relocate animals from the site. These methods may entail strategic mowing, fencing, or other feasible construction methods to assist in moving animals offsite toward desirable land. Plan shall address location of preferred offsite movement of animals, based on CDFG data and land ownership. Private land is to be avoided to the maximum extent practicable.~~

~~Placement of escape dens along perimeter fencing to reduce predation risk.~~

~~Kit fox disease prevention measures. The Designated Biologist shall notify the CDFG and CPM within 24 hours if a dead kit fox is found or appears sick. The plan must also detail a response to a kit fox injury, including a necropsy plan, reporting methods, and scope of adaptive methods in the event of a known or suspected outbreak. The project owner will pay for any necropsy work.~~

**Verification:**        Implementation of the measures shall be reported in the Monthly Compliance Reports by the Designated Biologist. At least 60 days prior to any project related ground-disturbing activity, the project owner shall submit an American badger and desert kit fox management plan to the CPM for review and approval and to CDFG for review and comment. No less than 30 days prior to any ground-disturbing activity, the project owner shall provide one copy of the final approved plan to the CPM and implement the plan.

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~~The project owner shall submit a report to the CPM and CDFG within 30 days of completion of badger and kit fox surveys. The report shall describe survey methods, results, mitigation measures implemented, and the results of the mitigation.~~

131. Pages 4.2-207 and 208, BIO-15: It is our experience at ISEGS that the ABPP and the Golden Eagle Protection Plan need to be separated into two reports because the reviewers are different.

**AVIAN AND, BAT, AND GOLDEN EAGLE PROTECTION PLAN**

**BIO-15A** The project owner shall prepare and implement an Avian, ~~and Bat, and Golden Eagle~~ Protection Plan to monitor the death and injury of birds/bats from collisions with facility features such as reflective mirror-like surfaces and from heat, and bright light from concentrating sunlight. The study design shall be approved by the CPM in consultation with CDFG and USFWS, and shall be incorporated into the project's BRMIMP and implemented.

**Verification:** ~~\_\_\_\_\_~~ The Plan shall include plans to conduct visual biweekly surveys for special birds, raptors, and bat mortalities throughout the project site for a period of five years unless otherwise requested by the CPM or CDFG. In addition to the photo documentation of bird mortalities, mortalities and injuries to bats and other wildlife shall be photo documented. Additionally, data would document any overt signs of injury resulting in death (e.g., scorched feathers). This information would be compiled and provided to the CDFG and CPM ~~on quarterly intervals for the first two years of project operation, then annually thereafter~~ in the monthly compliance report, unless otherwise requested directed by the CPM or CDFG. Adaptive management thresholds will be set and clearly defined, including potential response to significantly large avian or bat kills, or raptor kills, ~~, or if a golden eagle is injured or killed as a result of the project. The plan will require the immediate implementation of remedial actions should one golden eagle be killed on the project site by project activities or facilities. The study shall also include seasonal trials to assess bias from carcass removal by scavengers as well as searcher bias.~~

**Verification:** ~~\_\_\_\_\_~~ Prior to the start of power plant operation, the project owner shall submit to the CPM for approval and the USFWS and CDFG for review and comment, a final draft Avian and, Bat, ~~and Golden Eagle~~ Protection Plan and agree to implement the plan. Modifications to the plan shall be made only after approval from the CPM.

~~For one year following the beginning of power plant operation, the Designated Biologist shall submit quarterly reports to CPM, CDFG, and USFWS describing the dates, durations, and results of monitoring. The quarterly reports shall provide a detailed description of any project related bird or wildlife deaths or injuries detected during the monitoring study or at any other time.~~

Following the completion of the fourth quarter of monitoring for the first year, the Designated Biologist shall prepare an Annual Report (as part of the annual compliance report) that summarizes the year's data, identifies any project-related bird fatalities or injuries detected, and provides recommendations for future monitoring and any adaptive management actions needed. The Annual Report shall be provided to the CPM, CDFG, and

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USFWS. ~~Quarterly~~ Reporting shall continue until the CPM, in consultation with CDFG and USFWS, determines whether more years of monitoring are needed, and whether mitigation and adaptive management measures are necessary.

~~The Designated Biologist shall provide to the CPM, CDFG, and USFWS an annual report summarizing all available data (species of carcass, date and location collected, and cause of death) describing bird and other carcasses collected within the project site each year.~~

**GOLDEN EAGLE PROTECTION PLAN**

**BIO-15B** The project owner shall prepare and implement an ~~Avian, Bat, and~~ Golden Eagle Protection Plan to monitor the death and injury of ~~birds~~ eagles from collisions with facility features such as reflective mirror-like surfaces and from heat, and bright light from concentrating sunlight. The study design shall be approved by the CPM in consultation with CDFG and USFWS, and shall be incorporated into the project's BRMIMP and implemented.

**Verification:** ~~The Plan shall include plans to conduct visual biweekly surveys for special birds, raptors, and bat golden eagle mortalities throughout the project site for a period of five years unless otherwise requested by the CPM or CDFG. In addition to the photo documentation of bird mortalities, m~~Mortalities and injuries to ~~bats and other wildlife eagles~~ shall be photo documented. Additionally, data would document any overt signs of injury resulting in death (e.g., scorched feathers). This information would be compiled and provided to the CDFG and CPM ~~on quarterly intervals for the first two years of project operation, then annually thereafter,~~ in the monthly compliance report, unless otherwise requested directed by the CPM or CDFG. Adaptive management thresholds will be set and clearly defined, including potential response ~~to significantly large avian or bat kills, raptor kills, or if a golden eagle is injured or killed as a result of the project.~~ The plan will require the immediate implementation of remedial actions should one golden eagle be killed on the project site by project activities or facilities. ~~The study shall also include seasonal trials to assess bias from carcass removal by scavengers as well as searcher bias.~~

**Verification:** ~~Prior to the start of power plant operation, the project owner shall submit to the CPM for approval and the USFWS and CDFG for review and comment, a final Avian, Bat, and draft~~ Golden Eagle Protection Plan and agree to implement the plan. Modifications to the plan shall be made only after approval from the CPM.

~~For one year following the beginning of power plant operation, the Designated Biologist shall submit quarterly reports to CPM, CDFG, and USFWS describing the dates, durations, and results of monitoring. The quarterly reports shall provide a detailed description of any project related bird or wildlife deaths or injuries detected during the monitoring study or at any other time.~~

Following the completion of the fourth quarter of monitoring for the first year, the Designated Biologist shall prepare an Annual Report (as part of the annual compliance report) that summarizes the year's data, identifies any project-related bird fatalities or injuries detected, and provides recommendations for future monitoring and any adaptive



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management actions needed. The Annual Report shall be provided to the CPM, CDFG, and USFWS. ~~Quarterly~~ Reporting shall continue until the CPM, in consultation with CDFG and USFWS, determines whether more years of monitoring are needed, and whether mitigation and adaptive management measures are necessary.

~~The Designated Biologist shall provide to the CPM, CDFG, and USFWS an annual report summarizing all available data (species of carcass, date and location collected, and cause of death) describing bird and other carcasses collected within the project site each year.~~

132. Pages 4.2-208 and 209, BIO-16: Please make the following edits to BIO-16. Reference to the linears has been dropped since they are located in Nevada. Other language changes have been made to conform this condition to the language used for Ivanpah SEGS.

**PRE-CONSTRUCTION NESTING BIRD SURVEYS**

**BIO-16** Pre-construction nest surveys shall be conducted if construction activities will occur from February 1 through August 15. The Designated Biologist or Biological Monitor conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques.

**Verification:** Surveys shall be conducted in accordance with the following guidelines:

1. Surveys shall cover all potential nesting habitat in the project site and within 500 feet of the boundaries of the plant site ~~and linear facilities~~;
2. At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. One of the surveys shall to be conducted within the 10 days preceding initiation of construction activity. Additional follow-up surveys may be required if periods of construction inactivity exceed one three weeks ~~in any given area~~, an interval during which birds may establish a nesting territory and initiate egg laying and incubation;
3. If active nests of a protected species are detected during the survey, a no-disturbance buffer zone (protected area surrounding the nest, the size of which is to be determined by the Designated Biologist in consultation with CDFG, USFWS, and CPM) and a monitoring plan shall be developed. ~~The nesting bird plan shall identify the types of birds that may nest in the project area, the proposed buffers, monitoring requirements, and reporting standards that will be implemented to ensure compliance with the Migratory Bird Treaty Act and Fish and Game Codes 3505 and 3505.3.~~ Nest locations requiring avoidance buffers shall be mapped using GPS technology and ~~submitted~~ reported to the CPM in the Biological Monthly Compliance Report; ~~along with a weekly report stating the survey results, to the CPM~~; and
4. The Designated Biologist shall monitor the nest until he or she determines that nestlings have fledged and dispersed. Activities that might, in the opinion of the Designated Biologist and in consultation with the CPM, disturb nesting activities shall be prohibited within the buffer zone until such a determination is made.



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**Verification:** At least 10 days prior to the start of any project-related ground disturbance activities, the project owner shall provide the CPM a letter-report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity and qualifications of the surveyor(s); and a list of species observed. If active nests of a protected species are detected during the survey, the report shall include a map or aerial photo identifying the location of the nest and shall depict the boundaries of the no-disturbance buffer zone around the nest. All nest avoidance measures will be implemented and reported in the Monthly Compliance Report.

133. Pages 4.2-209 through 213, BIO-17. Please make the following changes to BIO-17.

**BURROWING OWL IMPACT AVOIDANCE, MINIMIZATION, AND COMPENSATION MEASURES**

**BIO-17** The project owner shall implement the following measures to avoid and offset impacts to burrowing owls:

**Verification:**

1. Pre-Construction Surveys. Concurrent with desert tortoise clearance surveys the Designated Biologist shall conduct pre-construction surveys for burrowing owls within the project site ~~and along all linear facilities~~ in accordance with CDFG guidelines (CDFG 2012). ~~Pre-construction surveys for burrowing owls shall occur no more than 30 days prior to initiation of ground disturbance or site mobilization activities.~~ The survey area shall include the Project Disturbance Area (the Project Disturbance Area means all lands to be disturbed in the construction and operation of the HHSEGS Project) and surrounding 500-foot survey buffer where access is legally available.
2. Implement Impact Avoidance Measures. If an active burrowing owl burrow is detected within 500 feet from the Project Disturbance Area the following avoidance and minimization measures shall be implemented:
  - a. Establish Non-Disturbance Buffer. Fencing shall be installed at a 250-foot radius from the occupied burrow to create a non-disturbance buffer around the burrow. The non-disturbance buffer and fence line may be reduced to 160 feet if all project-related activities that might disturb burrowing owls would be conducted during the non-breeding season (September 1st through January 31st). Signs shall be posted in English and Spanish at the fence line indicating no entry or disturbance is permitted within the fenced buffer.
  - b. Monitoring: If construction activities would occur within ~~500~~ 250 feet of the occupied burrow during the nesting season (February 1 – August 31st) the Designated Biologist or Biological Monitor shall monitor to determine if these activities have potential to adversely affect nesting efforts, and shall implement measures to minimize or avoid such disturbance.
3. Prepare Burrowing Owl Relocation and Mitigation Plan. The project owner shall prepare and implement a Burrowing Owl Relocation and Mitigation Plan, in addition

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to the avoidance measures described above. The final Burrowing Owl Relocation and Mitigation Plan shall be approved by the CPM, in consultation with USFWS and CDFG, and shall:

- a. Identify and describe potential relocation sites on lands controlled by the applicant and describe measures to ensure that burrow installation or improvements would not affect sensitive species habitat or existing burrowing owl colonies in the relocation area;
  - b. Provide guidelines for creation or enhancement of at least two natural or artificial burrows per relocated owl, including a discussion of timing of burrow improvements, specific location of burrow installation, and burrow design. Design of the artificial burrows shall be consistent with CDFG guidelines (CDFG 2012) and shall be approved by the CPM in consultation with CDFG and USFWS;
  - c. Passive relocation sites shall be in areas of suitable habitat for burrowing owl nesting, and be characterized by minimal human disturbance and access. Relative cover of non-native plants within the proposed relocation sites shall not exceed the relative cover of non-native plants in the adjacent habitats;
  - d. Provide detailed methods and guidance for passive relocation of burrowing owls occurring within the Project Disturbance Area; ~~and~~
4. ~~Acquire Compensatory Mitigation Lands for Burrowing Owls. Staff is working with the CDFG to assess the acquisition requirements for compensatory mitigation lands in consideration of recent guidance provided in the 2012 Staff Report on Burrowing Owls. For the purposes of the PSA staff is assuming that a minimum of two burrowing owl territories would be lost on the project site. Assuming the project will result in the loss of two territories (each with a territory of 300 acres (CDFG 2012) the Project owner shall acquire, in fee or in easement, 600 acres of land the total compensatory requirements for this project will be based on the number of burrowing owls determined during pre-construction surveys but shall be no less than two territories described in this condition.~~

~~The project owner shall provide funding for the enhancement and long-term management of these compensation lands. The acquisition and management of the compensation lands may be delegated by written agreement to CDFG or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the CPM, in consultation with CDFG and USFWS prior to land acquisition or management activities. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat. In lieu of acquiring lands itself, the Project owner may satisfy the requirements of this condition by depositing funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as described in Section 3.i. of Condition of Certification **BIO-12**.~~

~~Criteria for Burrowing Owl Mitigation Lands. The terms and conditions of this acquisition or easement shall be as described in Paragraph 1 of **BIO-12** [Desert Tortoise Compensatory Mitigation], with the additional criteria to include: 1) the~~

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mitigation land must provide suitable habitat for burrowing owls, and 2) the acquisition lands must either currently support burrowing owls or be within dispersal distance from an active burrowing owl nesting territory (generally approximately 5 miles). The burrowing owl mitigation lands may be included with the desert tortoise mitigation lands **ONLY** if these two burrowing owl criteria are met. If the burrowing owl mitigation land is separate from the acquisition required for desert tortoise compensation lands, the Project owner shall fulfill the requirements described below in this condition.

Security. If burrowing owl mitigation land is separate from the acreage required for desert tortoise, the project owner or an approved third party shall complete acquisition of the proposed compensation lands prior to initiating ground-disturbing Project activities. The project owner shall provide financial assurances to the CPM and CDFG to guarantee that an adequate level of funding is available to implement the Energy Commission Complementary Mitigation Measures described in this condition. These funds shall be used solely for implementation of the measures associated with the project. Alternatively, financial assurance can be provided to the CPM and CDFG in the form of an irrevocable letter of credit, a pledged savings account or another form of financial security ("security") prior to initiating ground-disturbing project activities. Prior to submittal to the CPM, the security shall be approved by CDFG and the CPM, to ensure funding in the amount of \$1,185,000.00. This security amount was calculated as follows and may be revised upon completion of a Property Analysis Record (PAR) or PAR-like analysis of the proposed compensation lands:

- a. ~~land acquisition costs for compensation lands, calculated at \$1,000/acre = \$600,00.00;~~
- b. ~~costs of initial habitat improvements to compensation lands, calculated at \$250/acre = \$150,000.00;~~
- c. ~~costs of establishing an endowment for long term management of compensation lands, calculated at \$1,450/acre = \$870,000.00.~~
- d. ~~costs associated with conducting required surveys, assessments for hazardous materials, escrow fees, third party administrative costs and agency costs to accept the parcel; calculated at \$585,000.00 (See Biological resource Table 9 for a breakdown of these costs).~~

The final amount due will be determined by the PAR analysis conducted pursuant to **BIO-12.**

Verification: If staff determines that compensatory mitigation is required, the project owner will provide the CPM with verification that security has been provided prior to the start of any project related ground disturbance activities.

If pre-construction surveys detect burrowing owls within 500 feet of proposed construction activities, the Designated Biologist shall provide to the CPM, CDFG and USFWS documentation indicating that non-disturbance buffer fencing has been installed at least 10 days prior to the start of any construction related ground disturbance activities. The project owner shall report monthly to the CPM, CDFG, and USFWS for the

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~~duration of construction on the implementation of burrowing owl avoidance and minimization measures. Within 30 days after completion of construction the project owner shall provide to the CPM, CDFG and USFWS a written construction termination report identifying how mitigation measures described in the plan have been completed.~~

~~If pre-construction surveys detect burrowing owls within the Project Disturbance Area, the project owner shall notify the CPM, CDFG and USFWS no less than 10 days of completing the surveys that a relocation of owls is necessary. The project owner shall do all of the following if relocation of one or more burrowing owls is required:~~

- ~~1. Within 30 days of completion of the burrowing owl pre-construction surveys, submit to the CPM, CDFG and USFWS a Burrowing Owl Relocation and Mitigation Plan.~~
- ~~2. No later than 30 days prior to the start of construction-related ground disturbing activities, the project owner shall provide written verification to the CPM of the establishment of the financial security in accordance with this condition of certification.~~
- ~~3. Within 90 days of the land or easement purchase, as determined by the date on the title, the project owner shall provide the CPM with a management plan for review and approval, in consultation with CDFG and USFWS, for the compensation lands and associated fund.~~
- ~~4. No less than 90 days prior to acquisition of the burrowing owl compensation lands, the project owner, or an approved third party, shall submit a formal acquisition proposal to the CPM, CDFG, and USFWS describing the parcel intended for purchase. At the same time the project owner shall submit a PAR or PAR-like analysis for the parcels for review and approval by the CPM, CDFG and USFWS.~~
- ~~5. No later than 18 months after the start of construction-related ground disturbance activities, the project owner shall provide written verification to the CPM, CDFG and USFWS that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient.~~
- ~~6. By January 31st of each year following construction for a period of five years, the Designated Biologist shall provide a report to the CPM, USFWS, and CDFG that describes the results of monitoring and management of the burrowing owl relocation area, if applicable. The annual report shall provide an assessment of the status of the relocation area with respect to burrow function and weed infestation, and shall include recommendations for actions the following year for maintaining the burrows as functional burrowing owl nesting sites and minimizing the occurrence of weeds.~~

134. Pages 4.2-227 through 233, BIO-22: For the reasons discussed above related to Waters of the State, delete BIO-22 in its entirety.

135. Pages 4.2-233 through 238, BIO-23: Please delete this condition entirely.

As discussed in the Water Supply Comments on the PSA, the Applicant has proposed two groundwater monitoring conditions, WATER SUPPLY-6 and WATER SUPPLY-8. These Water Supply conditions will address all issues related to groundwater and potential groundwater effect of the project on groundwater dependent vegetation and all other offsite resources.

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Applicant maintains that the information presented to date demonstrated that the project's use of groundwater will have no adverse offsite effects, including no effects on any groundwater dependent vegetation on BLM lands in Nevada or on any other off-site resources.

Condition Water Supply-6 (Water Level Monitoring For Neighboring Wells, Mitigation And Reporting) and Water Supply-8 (Water Level Monitoring For Groundwater-Dependent Vegetation, Mitigation And Reporting) will confirm the finding that the project's water use will have no offsite effect. Mitigation may only be imposed if the project will have a significant effect, as demonstrated by substantial evidence in the record. The record demonstrates no such significant effect and thus there is no basis for imposition of mitigation in the form of the proposed condition.

136. Page 4.2-239, BIO-24: A groundwater monitoring program will be implemented as part of WATER SUPPLY-6. The groundwater level-monitoring is described in this condition. With implementation of this monitoring program, Condition BIO-24 is not necessary and should be deleted.
137. Page 4.2-240, BIO-25: It is Applicant's understanding that to be eligible for this program, the project must be an ARRA-eligible project. Therefore, this condition should be deleted.

## **BOTANY**

### **General Comments**

#### **Groundwater-dependent Ecosystems**

138. For purposes of clarifying the analysis baseline, please state where the groundwater table is now relative to the mesquite vegetation described in section 4.2. Based on the hydrology modeling conducted to date, a groundwater level monitoring threshold for adverse change based on a 6-inch increment is not appropriate since natural variation can be several feet.
139. The PSA is confusing as to the description of what constitutes "onsite" as compared to "offsite." Applicant recommends the PSA be split into two subsections: 1) for the site and 2) for the surrounding "offsite" area. The PSA puts a great deal of emphasis on the region, but does not include the groundwater information for the site or the areas to the east. The PSA also does not include the results obtained by the aquifer performance tests.
140. The discussion of groundwater places too much of an emphasis on the regional context, and does not provide the most important information for this type of analysis: the current modeled depth of groundwater in the project area and along the stateline fault to the east. This information needs to be presented to analyze impacts to groundwater dependent vegetation.

#### **Invasive Species**

141. A weed management plan will be prepared and the exact methods of control and monitoring will be developed in those plans. In BIO-18, the PSA contains a substantial

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amount of detail, much of which is problematic or infeasible in terms of implementation. Please see the proposed revisions to BIO-18.

**Special-Status Plants**

142. As stated in the PSA, some of the special-status plant species found onsite were new reports for California or have only recently been added to the CNPS Inventory. For example, Nye milk-vetch *Astragalus nyensis* and Torrey's joint-fir were first documented in California during these surveys. Nye milk-vetch was added to the CNPS Inventory on December 27, 2011. Torrey's joint-fir was added on February 8, 2012, after spring 2011 surveys were complete. Gravel milk-vetch (*Astragalus sabulorum*) was added to the CNPS Inventory in October 19, 2011. Nye milk-vetch, gravel milk-vetch, and Torrey's joint-fir were not on any special-status plant lists at the time the protocol-level surveys were performed of the site. Nye milk-vetch and Torrey's joint-fir are still not even in the main treatment of plants for the California flora used by botanists to key out plants, the Jepson Manual (1993), and the Second Edition of the Jepson Manual (2012). Because these species have just recently been added to the list of special-status plants, data are limited for these species. Additional locations of these species likely occur but are just not documented yet. Annual (or short-lived herbaceous perennial species) such as Nye milk-vetch and gravel milk-vetch did not germinate or grow in 2012 due to dry conditions. Therefore, it was not possible to detect them at all during 2012 surveys. The Applicant will likely perform additional surveys for these species as soon as they can be performed (possibly fall 2012 or spring 2013).

**Specific Comments**

**Groundwater-dependent Ecosystems**

143. Page 4.2-37. One geomorphology clarification: Desert wash scrub or desert riparian (*sensu* Bradley and Deacon, 1967) vegetation is not at all dependent on groundwater, and there is no shallow groundwater present in these habitats. The shrubs that dominate these habitats are adapted to disturbed soils chiefly, not shallow ground water. These habitats are typified by such shrub species as *Salazaria mexicana*, *Hymenoclea salsola*, *Chrysothamnus paniculatus*, and *Atriplex canescens*, none of which are obligate hydrophiles. Groundwater perched seasonally and discontinuously along an arroyo would be indicated by such arborescent species as *Acacia greggii* and *Chilopsis linearis*, and these are relatively uncommon.
144. Page 4.2-47. Mesquite. Delete the use of "scrubs" (plural).
145. Page 4.2-47. Mesquite. The PSA states that the mesquite is stressed due to groundwater pumping. There is no evidence to support this statement, and there could be other reasons, such as mistletoe infestation, that the vegetation is stressed. Mistletoe has been observed in the mesquite thickets adjacent to the site.
146. Pages 4.2-233 through 240. BIO-23 and BIO-24. The amount of vegetation monitoring requested is not proportional to the potential impact from the project, and the program is overly complex. The PSA requests monitoring of resources in Nevada, despite the fact that the CEC's jurisdiction is limited to California. Moreover, given a groundwater monitoring



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program is proposed as part of Water Supply-6 and Water Supply-8, BIO-23 and BIO-24 should be deleted as they are duplicative of these conditions.

**Common and Sensitive Plant Communities**

147. Page 4.2-1, 4.2-20, and elsewhere: Multiple terms are used to describe the offsite mesquite habitats. The following terms are used: mesquite thicket, mesquite woodland, mesquite scrub, mesquite riparian, and mesquite bosque. Other sections of the PSA also use the term “mesquite woodland” to refer to resources offsite. As used in Section 4.2, the terms “bosque” and “woodland” are incorrect. Woodland is a vegetation type characterized by trees of low to moderate height, sufficiently spaced that it possesses an open canopy. “Bosque” is a term applied in the Southwest to riparian gallery forests typified by moderate to tall trees and a largely closed canopy. Neither term properly applies to the offsite mesquite habitats because they consist of thickets. The plants are very closely spaced and shrub-sized on the sand dunes and somewhat larger (to arborescent shrub and small tree) in the arroyos, but in no case do they possess a defined canopy. Instead, they are usually impenetrable thickets of limited extent. Scrub is another appropriate term for this vegetation type. Therefore, all references to “woodland” and “bosque” need to be deleted in the PSA, as the appropriate terms for mesquite habitat are either: thicket, scrub or shrubland.
148. Per the July 2012 biological resources workshop, we request that CEC staff check with the CDFG vegetation ecologist (Todd Keeler-Wolf) about the discriminators (height, density) that should be used to distinguish between the terms “mesquite thicket” and “mesquite shrubland/woodland”. Clarify which areas offsite support thicket or woodland and why they are called one or the other. The PSA should state more clearly that the vegetation on the dunes adjacent to the state line is “mesquite thicket” or “mesquite scrub”, a non-arborescent community that occurs away from a riverine setting. Per Sawyer Keeler-Wolf et al (2009), *A Manual of California Vegetation*, page 226, “...stands appear primarily as woodlands, though shrublands stands occur away from rivers”.
149. Page 4.2-7. Common and Sensitive Plant Communities. The PSA should state that there is the “potential for” indirect impacts discussed – not that indirect effects are already determined as a given (e.g., use text “potentially indirectly affected”). In addition, the following sentence should be added to the end of this paragraph “Mesquite riparian woodlands are not located onsite or directly adjacent to the site”.
150. Page 4.2-8, and 4.2-20. References to *Larrea-Pleuraphis* plant community. Applicant’s botany team evaluated field conditions within the washes. The general conclusion at this time is that there may be too much *Ambrosia* for the washes to support the *Larrea-Pleuraphis* alliance. Moreover, Applicant requests that examples of other projects that have required mitigation for the loss of this habitat type be provided, and whether there is any precedence in Inyo County for the mitigation ratio specified for this plant community.
151. Page 4.2-20. Sensitive Natural Communities. The section on mesquite is confusing. Restructuring this section into two subsections would help clear up the confusion. The first subsection should describe what is present within the site. The second subsection should list the findings adjacent to the site. This section should also incorporate information from



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Applicant's Data Response 105-1, Research Design: Landforms and Resource Complexity of an Oasis System in the Northern Mojave Desert.

152. Page 4.2-20. Please add the following text: "No mesquite occur within the project boundary except for a few widely scattered individuals, which have a shrub-like, rather than aborescent, growth form".
153. Page 4.2-21. Where the PSA discusses die-back, please add citations to document research that support the statements. Mesquite die-back may occur from groundwater decline, but in general, geomorphologists don't consider sand accumulation to be a potential cause of mesquite die-off.
154. Page 4.2-21. Please rephrase to reflect that many of the mesquite coppices are likely to be clones.
155. Page 4.2-21. At Stump Springs, as set forth in Applicant's Data Response 105-1, mesquite occurs in thickets along the arroyos that cut through the most prominent scarps of the SFS. Since they are incised some tens of feet below ground surface, the floors of the arroyos are that much closer to the groundwater table, and phreatophytic mesquite grows in luxuriant thickets along these water courses. However, although frequently incorrectly referred to as "bosque," these mesquite do not form a true canopy, and rather comprise dense thickets of arborescent shrubby vegetation, instead of a gallery forest with the overarching canopy of a bosque. Other riparian plants are rare to absent. At Stump Spring, for example, the limbs of a cottonwood (*Populus sp.*) tree are scattered about but no cottonwoods remain alive, and a reconnaissance revealed only one willow (*Salix sp.*) in the arroyo where the spring is thought to have emerged.
156. Page 4.2-22. Clarify why there are two sources cited stating the conservation importance of mesquite in Nevada when the project is in Inyo County, California. Also identify under which resource planning document these have been identified as being protected.
157. Page 4.2-47. Please revise to reflect that the common name for *Hymenoclea* is cheesebush, not– burrobush.

**Invasive Weeds**

158. Page 4.2-5. **Summary of Impacts to Special-status Plants, Waters, and Vegetation.** Please revise the following text to the first sentence: "Without mitigation" in front of "Pproject-related soil disturbance, increased vehicle traffic, and the movement of equipment and materials onsite and offsite ~~are expected to~~ could spread....".
159. Page 4.2-5. Please add the following text to the section on invasive weeds: "Invasive weeds were identified onsite and in offsite areas. Areas included in 2011 offsite surveys in which invasive weeds were found include areas north, west, and south of the site in the northern, central, and southern Pahrump valley, and areas to the southwest, in the Chicago and California valleys, and elsewhere (Solar Partners 2012b, DR63-2)".

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160. Page 4.2-5. Summary of Impacts to Special-status Plants, Waters, and Vegetation. Please clarify how the incremental effect of noxious weeds from this project was considered cumulatively considerable. Please revise the text to state the following: “With mitigation, impacts would be less than significant,” rather than “less than cumulatively considerable.”
161. Page 4.2-6. Summary of Impacts to Special-status Plants, Waters, and Vegetation. Please revise the text to state: 1) the project would eliminate a substantial portion (greater than 20 percent) of the total documented occurrences in California, or 2) there are no opportunities for offsite compensatory mitigation.
162. Page 4.2-6. Please remove the special-status plant compensatory mitigation ratios, which should be developed in coordination with the Applicant.
163. Page 4.2-17; 4.2-22, Page 4.2-151 and elsewhere. The PSA describes in general terms the detrimental effects that noxious weeds have on the special-status plants and wildlife. In general, while special-status plants were identified onsite (and offsite as well) 11 species of noxious weeds were identified onsite and offsite. The site botany report, Attachment DR63-1A, provides figures that show the distribution of weeds. Some species of weeds (e.g., halogeton) were very abundant (particularly in the western 2/3 of the site where a subdivision is planned, the site has been disturbed by grading, and where an extensive road network was graded). The PSA says that “infestations of halogeton in the project area and vicinity may be the largest infestations in the state”. Subsequent to the surveys – more information about halogeton within CA has been identified – and this plant is now documented in several southern California counties and counties bordering Nevada (Cal IPC 2012; CDFA, 2012). These infestations may not be the largest in California any longer. Due to this, it may be worth confirming with CDFA that this remains an A-ranked species with CDFA. In nearby Nevada, it is considered ineradicable in some areas.

**References:**

California Invasive Pest Plant Council. 2012. Accessed online at: <http://www.cal-ipc.org/>

California Department of Food and Agriculture (CDFA). 2012. Encycloweedia Data Sheets. <http://www.cdfa.ca.gov/plant/ipc/weedinfo/halogeton.htm#anchor602355>

164. The level of site disturbance and the number of noxious weeds found onsite needs to be considered when talking in general terms about the quality of the habitat onsite.
165. The PSA describes the potential spread of noxious weeds offsite; however, the PSA must be revised to reflect that in many locations, noxious weeds already occur offsite. This baseline condition should be described and used in the PSA.
166. Page 4.2-24. Control of noxious weeds onsite for halogeton and others is not feasible given the scope of the infestation. Eradication onsite should not be the goal of the noxious

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weed management plan. Also, some parts of the site are surrounded by private land. Weed control or management on private lands is not feasible.

167. Page 4.2-17. The PSA should be clarified to reflect that portions of the site have been graded, there are numerous noxious weed infestations, and part of the site has been burned. The PSA states that the habitat between the grid is mostly undisturbed. This is not a completely accurate accounting of site conditions – there has been some substantial historical disturbance.
168. Pages 4.2-153, 4.2-214. Control of noxious weeds within a 100 foot boundary surrounding the site as stated in BIO-18 in the PSA is not feasible due to private property concerns.
169. Page 4.2-214. Special-status plants will not be avoided within the solar field or temporary construction areas. Treatment of noxious weeds onsite near special-status plants onsite is therefore not applicable, and this wording should be removed from BIO-18.
170. Page 4.2-22.: This section gives the impression that all of the noxious weed species listed below were “documented onsite” but Camelthorn and Malta starthistle were not. This section should be split into two subsections (one for species observed) and the second for other species not observed on the project site.

**Special-Status Plants**

171. Page 4.2-6. Summary of Impacts to Special-status Plants, Waters, and Vegetation. Please add the following text: “Eleven species of special-status plants are present onsite. The number of onsite occurrences for one species, Torrey’s joint-fir, that was identified in spring 2012, is currently being calculated by the CNDDDB”.
172. Page 4.2-6. With the addition of Torrey’s joint-fir to the site finds, there are 11 species of special-status plants now (previous references in the PSA in various places to 8, 9, or 10 special-status plants are incorrect).
173. The 2012 rare plant survey data have been submitted to the California Natural Diversity Database (CNDDDB) on June 24, 2012 and filed as DR Supplement 2D #174. Numerous special-status plants were found. In some cases [e.g., Pahump Valley buckwheat (*Eriogonum bifurcatum*) and Wheeler’s skeletonweed (*Chaetadelpa wheeleri*)], dead plants from previous years were used to make the identifications. We anticipate that there will be some downward adjustments in the Natureserve special-status plant ranks made by the CNDDDB. It is possible that some species will be moved from List 1 to List 2 or other lists, and other fine-scale adjustments could be made.
174. Page 4.2-6. The PSA states “Pending results of the applicant’s spring 2012 special-status plant surveys already underway, staff currently considers impacts to five of the eleven species to be significant and potentially immitigable if: 1) the project would eliminate a substantial portion (greater than 20 percent) of the total documented occurrences in

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California, and 2) there are no opportunities for offsite compensatory mitigation". Please change the last portion of this sentence to: 1) the project would eliminate a substantial portion (greater than 20 percent) of the total documented occurrences in California, or 2) there are no opportunities for offsite compensatory mitigation.

175. Page 4.2-6 and Biological Resources Table 8 (Page 4.2-64 and elsewhere). Please remove references to 3:1 or 2:1 mitigation ratio in the PSA. It has not been determined that mitigation will be required, and the level of specificity contained in the PSA is premature, given that the impacts analysis is ongoing. Appropriate mitigation and mitigation ratios will be determined in coordination with the CEC. In addition, Applicant requests that justification or examples of precedent presented for ratios be provided.
176. Page 4.2-17. Reconnaissance-surveys were performed in 2011, not 2012.
177. Page 4.2-19. Shadscale scrub community status codes. Please confirm that the Natureserve status codes used in this section are current and correct. Vegetation studies are ongoing, and new vegetation plot data may have been submitted and adjustments made in Natureserve status ranks subsequent to the publication of the 2009 Manual of California Vegetation.
178. Page 4.2-28, 29 – Biological Resources Table 3. Please add the status code for Torrey's joint-fir. Note CNDDDB List of Special Status Plants uses Torrey's Mormon tea for common name but all project documents and maps to date use Torrey's joint-fir.
179. Page 4.2-28 and 29 – Biological Resources Table 3 and Page 4.2-32. Please use California Rare Plant Rank (CRPR) instead of California Native Plant Society (CNPS) rank, and state that the convention used is CRPR.
180. Page 4.2-31. Special-status Plants. Please revise the text to reflect the following: Protocol surveys were performed onsite and the buffer during 2011 and 2012. Late season surveys of the site were completed in 2010. Late-season surveys of the laydown area were performed in 2011 since this area was added on after the surveys were completed in 2010. Late-season surveys of the 250-ft buffer were also done in 2011.
181. Page 4.2-31. Please revise the text to clarify the offsite 2012 survey areas: "In 2012, Pahrump, Stewart, Chicago and California valleys, and the Amargosa Valley/Ash Meadows area were visited again, and additional offsite surveys were conducted in: Shadow Valley (north and south of I-15), Mesquite Valley, Mesquite Mountains, southern Nopah Range, Kingston Wash, Silurian Valley, Salt Spring Hills, Dumont Dunes area, and the Shoshone-Tecopa area".
182. Page 4.2-32. Please add the following text right before the heading for Androstephium. "Data from the 2012 botanical surveys have not yet been added to the total number of occurrences described in this section. Adjustments to the total number of occurrences

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known for each of these special-status plant species will be documented in the Final Staff Assessment (FSA)".

183. Page 4.2-32. Please add the following text to the *Androstephium* paragraph: "During 2012 offsite surveys potentially suitable habitat was visited but no additional localities for pink-flowered *androstephium* were found. No individuals of this species were observed anywhere, including known localities mapped in 2011".
184. Page 4.2-33. Please add the following correction to the discussions regarding the Nye milk-vetch. The Nye milk-vetch has a "D" designation in the 2010 Nevada Native Plant Society List, which means dropped from consideration. Per a conversation with Jim Morefield in February 2012, the species is not considered a NV sensitive species. Please also add the following text to the Nye milk-vetch discussion: "During 2012 offsite surveys, conditions were very dry, and no annual plants were observed in most of the offsite survey areas. Potentially suitable habitat was visited, but no additional localities for Nye milkvetch were found".
185. Page 4.2-33. Preuss' milk-vetch. Please add the following text. "During onsite surveys in 2012, two additional localities of Preuss' milkvetch were found onsite, near the eastern site boundary. Each locality consisted of a few plants. In addition, during 2012 offsite surveys, many new localities of Preuss' milkvetch were mapped in Mesquite Valley, and a few were mapped in the Pahrump Valley. The Mesquite Valley localities ranged from fewer than 10 individuals to approximately 5,000 plants".
186. Page 4.2-33. Gravel milk-vetch. Please add this text to the first paragraph. "Gravel milkvetch did not have conservation status at the time that the 2011 HHSEGS site survey, the offsite surveys, and the transmission corridor surveys were conducted".
187. Page 4.2-34. Tidestrom's milk-vetch. Please add this text to the first paragraph.
- "Data from the 2012 botanical surveys have not yet been added to this total number of occurrences and this total number of occurrences will be adjusted in the Final Staff Assessment (FSA). Offsite surveys in 2012 mapped approximately 10 new localities of Tidestrom's milkvetch in Shadow Valley, the Mesquite Mountains, and other locations. In addition, a specimen of *Astragalus layneae* collected in 1991 on Santa Rosa Flat in Inyo County by Mary DeDecker (UCR141695) has recently been determined by Andrew Sanders to be *A. tidestromii* (Consortium of California Herbaria 2012). This locality is distant from others known in Inyo County, and it may constitute one additional new EO."
188. Page 4.2-34. Please make the following correction. Wheeler's skeletonweed is a perennial from a branched caudex, not an annual as described in this paragraph.
189. Page 4.2-34. Wheeler's skeletonweed. Please add the following text.

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“During offsite surveys in 2012, known locations of Wheeler’s skeletonweed in the Pahrump Valley were checked on several dates to determine whether new above-ground growth would occur in this very dry year. Identifiable “skeletons” (dried plant material from the previous season) were found at the known locations; however, no new growth was observed. In 2012, one new locality of Wheeler’s skeletonweed, was observed in the BLM Pahrump Valley Wilderness, which is expected will constitute one new EO. This locality consisted of several identifiable skeletons”.

190. Page 4.2-35. Purple-nerve springparsley (*Cymopterus multinervatus*). Please add the following text.

“During offsite surveys in 2012, reference sites for this species were checked, and no plants were observed, likely due to very dry conditions. In addition, potentially suitable habitat for this species in Shadow Valley and Pahrump Valley was checked, but no new localities were found.”

191. Page 4.2-35. Pahrump Valley buckwheat (*Eriogonum bifurcatum*). Text appears to be missing at the end of the first sentence in the second paragraph. Also, after the discussion regarding how the CNDDDB defines occurrences, please add how many total known occurrences there are in California. Other plant accounts have this, but it is missing here.

192. Page 4.2-35. Pahrump Valley buckwheat (*Eriogonum bifurcatum*). Please add the following text after the discussion of the species known range:

“During offsite surveys performed in 2012, Pahrump Valley buckwheat was mapped in approximately 54 new localities in the Pahrump, Stewart, Chicago, California and Mesquite valleys. All of these identifications of *Eriogonum bifurcatum* are based on the identification of “skeletons” (dried plant material). The characters used to identify this species from skeletons are easily visible in dried material. Some of the 54 new localities consist of very large populations with millions of individuals. In Mesquite Valley, one population with many millions of *Eriogonum bifurcatum* plants covered an area 1.1-mile long, and at least 0.1 to 0.3-mile wide. Data from the 2012 botanical surveys have not yet been added to this total number of occurrences and this total number of occurrences will be adjusted in the Final Staff Assessment (FSA).”

193. Page 4.2-35. Pahrump Valley buckwheat. Please add the following text:

“In Pahrump Valley, approximately 28 new localities for *Eriogonum bifurcatum* were mapped. In Stewart Valley, 2 new localities were mapped. In Chicago Valley, 4 new localities were mapped. In California Valley, 3 new localities were mapped. The localities in California Valley are *the first records for Eriogonum bifurcatum* from this valley. Large areas of potentially suitable habitat in the center of California Valley were not surveyed due to access limitations, and this species potentially could occur in this area. In Mesquite Valley, approximately 17 new localities were mapped, including two



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- very large localities with millions of individuals in each". Page 4.2-35. Pahrump Valley buckwheat. Please add the following text: "During 2012 offsite surveys, one existing population, CNDDDB EO#9, in Kingston Wash, in San Bernardino County, was reviewed in the field. Six surveyors searched an area about 0.5-mile long and 0.2-mile wide in the area where the EO is mapped by CNDDDB with a precision of 80 meters. *Eriogonum bifurcatum* was not found throughout this area, and suitable habitat for this species was not observed within the four miles of Kingston Wash that were driven to reach the mapped location of EO #9. *Eriogonum bifurcatum* EO #9 is very likely based on a misidentification of a similar appearing *Eriogonum* species, *Eriogonum deflexum* var. *rectum*, a taxon that also has erect involucre and was included in the 1993 edition of *The Jepson Manual* (Hickman 1993). When the vegetation surveys on which this EO is based were completed, in 1997, the 1993 version of *The Jepson Manual* would likely have been used for plant identification. The taxon *Eriogonum deflexum* var. *rectum* is not recognized in more recent field manuals, *The Jepson Desert Manual* (Baldwin et al. 2002), or *The Jepson Manual, Second Edition* (Baldwin et al. 2012), or in the *Flora of North America* treatment of *Eriogonum* (FNA 2012)".
194. Page 4.2-36. *Selinocarpus*. Please add the following additional text:
- "In 2011, additional localities of this species were found along Excelsior Mine Road, San Bernardino County. Data from this 2011 survey will be added to this total number of occurrences and presented in the Final Staff Assessment (FSA). During offsite surveys in 2012, several known locations for desert wing-fruit were checked multiple times to see whether these deep-rooted perennials would grow during a very dry year. Localities in California and Nevada were checked. Vegetative growth was observed in only one locality, in Nevada, along the road from Jean to Goodsprings. No plants of this species were observed anywhere in California in 2012."
195. Page 4.2-36. *Selinocarpus nevadensis*. Please add the following clarification: "In the CNDDDB, the new taxon name for this species is *Acleisanthes nevadensis*."
196. Pages 4.2-36 and 37. *Ephedra torreyana*. Please correct the reference relating to the common ephedra look-alike on the project site. The PSA states that longleaf ephedra (*Ephedra trifurca*), another three-leaved *Ephedra* species, could be confused onsite with Torrey's jointfir (*Ephedra torreyana*). This confusion could occur if they these two species co-occurred, but longleaf ephedra (*Ephedra trifurca*) is more common to the south, in Riverside and San Bernardino counties. In Inyo County, longleaf ephedra (*Ephedra trifurca*) is known mainly from the Death Valley area. Therefore, Death Valley ephedra is the species onsite that could be confused with Torrey's jointfir, not longleaf ephedra.
197. Pages 4.2-36 and 37. *Ephedra torreyana* continued. Please update the species account with the 2012 survey information.



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“In early May 2012, a focused survey was conducted for Torrey’s jointfir within the HHSEGS site. Approximately 85 localities of Torrey’s jointfir (consisting only of plants with mature female cones) were mapped within the site. These are located mainly in the southwest quarter of the site, with a few localities near the eastern boundary of the site. During 2012, offsite surveys for Torrey’s jointfir were conducted in the Pahrump Valley in locations not previously searched in 2011. Approximately 50 additional new localities were mapped in offsite locations. Torrey’s jointfir was also searched for in potentially suitable habitat in Stewart Valley, Mesquite Valley, Chicago Valley, California Valley and the Amargosa Valley/Ash Meadows area. No individuals of this species were found in any of those locations. Death Valley ephedra was found in rocky areas in the Amargosa Valley, and in rocky areas in Joshua tree woodland in the Spring Mountains, in Nevada”.

198. Pages 4.2-128-129. Please make the following correction. There are 10 species listed in the text, and only 9 special-status plants in the PSA bullet list. Both of these references will need to be revised to reflect that 11 total special-status plants have been observed onsite. The PSA bullet list is missing two species (*Astragalus tdestromii* and *Ephedra torreyana*). Here is the complete list of special-status plants onsite:

1. *Acleisanthes nevadensis* [Selinocarpus nevadensis] (desert wing-fruit)
2. *Androstephium breviflorum* (pink-flowered androstephium)
3. *Astragalus nyensis* (Nye milk-vetch)
4. *Astragalus preussii* var. *preussii* (Preuss' milk-vetch)
5. *Astragalus sabulonum* (gravel milk-vetch)
6. *Astragalus tdestromii* (Tidestrom’s milk-vetch)
7. *Chaetadelpa wheeleri* (Wheeler’s skeletonweed)
8. *Cymopterus multinervatus* (purple-nerve spring parsley)
9. *Ephedra torreyana* (Torrey’s Mormon-tea)
10. *Eriogoum bifurcatum* (Pahrump Valley buckwheat)
11. *Phacelia pulchella* var. *gooddingii* (Goodding's phacelia)

199. Page 4.2-130. The PSA states “Construction of the project would eliminate a substantial portion of the total documented occurrences.” Please clarify what is meant by “substantial.”
200. Page 4.2-130. The PSA states “Compensatory mitigation, as described in conditions of certification BIO-20, would only be required for species would be significantly impacted (following evaluation of new survey data).” Please clarify the definition of what would constitute a significant impact.

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201. Page 4.2-141 and BIO-20. The PSA states that: “In general, numbers of occurrences are used to evaluate rarity rather than population size; population size data is incomplete for most species, and the populations of desert annuals fluctuate wildly in response to a variable and unpredictable climate”. Using the best scientifically available database (CNDDDB) population size data are often incomplete for species and population count data represent a snapshot (count) in time. In a good year, a lot of plants will come up and population sizes are large. In poor years, the plant may not even come up. For example, from the 2012 offsite surveys, two locations have more than a million dead plants and no live plants. So in 2011, a year of normal precipitation, over a million plants were observed and in 2012 – no live plants were present. This is how variable the plant response to rainfall can be. Taking this one step farther, data on the spread or extent of a special-status plant population – that is how many acres does a population of plants occupy on the ground – are not consistent year to year. The extent of the population will vary yearly depending on how many plants germinate and grow in any give year. The CNDDDB has estimates of the extent of populations (acreages) based on the specificity of the data point – and often these are extremely large areas merely because the point is mapped as occurring anywhere within a large area (e.g., a 1-mile radius). The Applicant does not have a reliable way of obtaining calculations of population extent (acres) or the average amount of occupied acreage by species as requested in BIO-20. Therefore, this measure as written is not feasible.
202. Page 4.2-135-136. The compensatory mitigation requirements as written are complex and do not describe the relationship of the requested mitigation to applicable LORS. Should compensatory mitigation be required, the Applicant looks forward to working with staff to develop appropriate mitigation, using a simpler methodology that can be implemented.
203. Page 4.2-137. Discussion regarding development of security. As defined in the PSA “Security for mitigation will be established by converting numbers of occurrences affected to an acreage figure”. Elsewhere in the BIO-20, the PSA states that the amount of security is to be based on the land acquisition cost presented for desert tortoise as the best available proxy (BIO-20, Item 1, and Item 1c, Page 4.2-222). These two statements and approaches conflict. Applicant disagrees that variable acreage metrics can be developed and used to obtain accurate calculations of the extent of plant populations (acreage) due to the limitations in the best available scientific data. Applicant proposes that the amount of the security deposit be calculated to include the cost of the mitigation land and management cost over time, and looks forward to working with Staff to develop appropriate security calculations, using a simpler methodology that can be implemented, should mitigation or security for impacts to special-status plants be required.
204. Page 4.2-138, 3<sup>rd</sup> paragraph. The PSA requests a mitigation ratio of 3:1 for S1-ranked plants. This ratio is high, and not proportional to the potential impacts from the project. Applicant requests that Staff provide examples of previous projects where this ratio was

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required and implemented in Inyo County or the general project region. Moreover, Applicant is concerned that the focus on mitigation ratios limits consideration of other feasible mitigation options that can be implemented.

## Conditions of Certification

205. Pages 4.2-213 through 216, BIO-1: Please revise BIO-18 as follows:

### **WEED MANAGEMENT PLAN**

**BIO-18** To minimize the potential indirect effects of weeds on sensitive biological resources adjacent to the project, the project owner shall submit a draft Weed Management Plan ~~subject to for~~ review and approval by the CPM. The general objectives of the Weed Management Plan shall be to: 1) manage control weeds of greatest environmental concern onsite ~~for the life of the project~~ to prevent their spread into adjacent offsite areas habitat, and 2) prevent the accidental introduction of new weed species from contaminated vehicles and equipment entering the site during construction, ~~operation, and closure~~. ~~The project owner shall also be responsible for protecting offsite biological resources from collateral or non-target harm from weed management activities through the measures contained below.~~

~~Responsibility for weed management on special-status plant mitigation lands may be transferred to the land trust or other approved deed or easement holder; however, the cost of monitoring and management shall be included in the stewardship fees for the mitigation lands and paid by the project owner.~~

~~Some of the weeds observed onsite are considered ubiquitous throughout the Mojave desert and eradication is not feasible. The list of “Target” weed species selected for long term management control onsite shall be determined through coordination with the CEC staff. Appropriate methods of control vary and will be developed on a species-specific basis. include any weed occurring within the WMAs described above that meet the following definition: a) California Invasive Plant Council (Cal-IPC) “High” rank weeds; b) California Department of Food & Agriculture (CDFA) and Nevada Department of Agriculture (NDA) “A” rated and “B” rated weeds, and c) all weeds on the Federal weed list.~~

### **Verification:**

The draft weed management plan shall include the following:

1. Weed Plan Requirements. The draft plan shall include the following information: a) specific weed management objectives and measures for each target non-native weed species; b) description of the baseline conditions; c) map of the weed management and monitoring areas showing locations of existing populations of target weeds; d) weed risk assessment based on Cal-

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IPC<sup>21</sup>, ~~or~~ Nature Conservancy, or other acceptable criteria<sup>22</sup>; e) measures that would be used to ~~manage~~ eradicate, control, contain, or monitor target weeds; f) measures that would be used to prevent the introduction and spread of weeds on vehicles, equipment, and materials (e.g., infested seed, straw, gravel, etc.); g) measures to minimize the risk of unintended harm to wildlife and other plants from weed control activities; h) monitoring and surveying methods; and i) reporting requirements.

- ~~2. Avoidance and Treatment of Dense Weed Populations. The draft plan shall include a requirement to flag and avoid or treat dense populations of the most invasive non-native weeds. If grading and construction cannot avoid these worst infestations (which promotes their spread), they shall be pre-treated by one of the following methods: a) treating the infested areas in the season prior to construction and spraying the new crop of plants that emerge in early spring, or b) removing the upper 2 inches of soil and disposing it offsite at a sanitary landfill or other site approved by the County Agricultural Commissioner, or c) burying the infested soil, e.g., under the solar facility or in a pit, and covering the infested soil with at least three feet of uncontaminated soil.~~
3. Cleaning Vehicles and Equipment. The draft plan shall include specifications and requirements for the establishment of a washing station for cleaning and removal of weed seed and weed plant parts from vehicles and equipment entering ~~and leaving~~ the site. Vehicles and equipment working in weed-infested areas (including previous job sites) shall be required to clean the equipment tires, tracks, and undercarriage before entering the project ~~area site~~. ~~and before moving from infested areas of the project site to uninfested areas.~~ Cleaning shall be conducted on all track and bucket/blade components to adequately remove all visible dirt and plant debris. Cleaning using hand tools, such as brushes, brooms, rakes, or shovels, ~~is preferred~~ can be used. If water ~~must~~ is be used, the water/slurry shall be contained to prevent seeds and plant parts from washing into adjacent habitat.
4. Treatment of Weed Populations near Special-status Plants. ~~The draft plan shall include a requirement to prioritize the eradication of invasive non-native weeds onsite that occur within 100 feet of any offsite special-status plant occurrences. The draft plan shall include measures for preventing accidental harm to offsite occurrences, and wildlife, during spraying or other weed management activities according to the guidelines in #6, below. The plan shall~~

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<sup>21</sup> Warner, Peter J., Carla C. Bossard, Matthew L. Brooks, Joseph M. DiTomaso, John A. Hall, Ann M. Howald, Douglas W. Johnson, John M. Randall, Cynthia L. Roye, Maria M. Ryan, and Alison E. Stanton. 2003. *Criteria for Categorizing Invasive Non-Native Plants that Threaten Wildlands*. California Exotic Pest Plant Council and Southwest Vegetation Management Association. 24 pp. Online: [www.caleppc.org](http://www.caleppc.org) and [www.swvma.org](http://www.swvma.org).

<sup>22</sup> Morse, L.E., J.M. Randall, N. Benton, R. Hiebert, and S. Lu. 2004. *An Invasive Species Assessment Protocol: Evaluating Non-Native Plants for Their Impact on Biodiversity*. [v1]. The Nature Conservancy. Arlington, Va. Online: <http://www.natureserve.org/library/invasiveSpeciesAssessmentProtocol.pdf>

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not include spraying or mechanical treatments of common and widespread weeds considered widespread in the Mojave Desert around the perimeter to avoid harming wildlife; the focus shall instead be on spot treatment of new outbreaks and small populations of the most invasive species that potentially could spread offsite. ~~and according to the g~~Guidelines for wildlife-safe herbicide use will be followed described under as described in the weed management plan.#7 and #8, below.

5. Employee Weed Awareness Training. A program shall be developed and incorporated into the WEAP and BRMIMP to train construction and operation employees to recognize ~~the most common and most invasive noxious weed~~ species in the area. The plan will include specific procedures on how to avoid contaminating vehicles and equipment, how to avoid spreading weeds offsite or introducing new weed species onsite, and how to protect wildlife ~~and special-status plants~~ from accidental harm during weed management activities. Employees shall be trained to understand the common vectors and conduits for spread, the economic and ecological impacts of weeds, and shall be trained on the procedures to follow provided with contact information for reporting infestations.
- ~~6. Compensate Local Agencies for Increased Weed Monitoring and Abatement. The project owner shall coordinate with local agricultural commissioner(s) to establish an amount for a fee to be paid annually by the project owner to the local agency(ies) for increased offsite monitoring and abatement costs resulting from the construction and operation of the project.~~
7. Safe Use of Herbicides. The draft plan shall include detailed specifications for avoiding herbicide and soil stabilizer drift, and shall include a list of herbicides and soil stabilizers that will be used on the project with manufacturer's guidance on appropriate use. The draft plan shall indicate in what situations ~~where the herbicides will be used, and what techniques will be used to avoid chemical drift. or residual toxicity to special-status species and their pollinators, and consistent with the Nature Conservancy guidelines and the criteria under #2, below. Only w~~Weed control measures for target weeds with a demonstrated record of success shall be used, based on the best available information from sources such as The Global Invasive Species Team "Invasipedia"<sup>23</sup>, Cal-IPC Invasive Plant Profiles<sup>24</sup>, ~~and~~ or the California Department of Food & Agriculture Encycloweediea<sup>25</sup>.
8. Weed Control Methods. The methods for weed control described in the draft plan shall meet the following criteria:

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<sup>23</sup><http://wiki.bugwood.org/Invasipedia>

<sup>24</sup>[http://www.cal-ipc.org/ip/management/plant\\_profiles/index.php](http://www.cal-ipc.org/ip/management/plant_profiles/index.php)

<sup>25</sup>[http://www.cdfa.ca.gov/plant/ipc/encycloweediea/encycloweediea\\_hp.htm](http://www.cdfa.ca.gov/plant/ipc/encycloweediea/encycloweediea_hp.htm)

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- a. Manual: Well-timed removal of plants or seed heads with hand tools; seed heads and plants must be disposed of in accordance with ~~guidelines from the Inyo County Agricultural Commissioner~~ invasive weed guidance ~~(or Clark or Nye County commissioners if disposed in Nevada).~~
- b. Chemical: Herbicides known to have residual toxicity, such as soil fumigants, pre-emergent herbicides and pellets shall not be used. Appropriate methods of chemical control will be specified in the weed management plan. Only the following application methods may be used: ~~wick (wiping onto leaves); inner bark injection; cut stump; frill or hack and squirt (into cuts in the trunk); basal bark girdling; foliar spot spraying with backpack sprayers or pump sprayers at low pressure or with a shield attachment to control drift, or with a squeeze bottle for small infestations (see Nature Conservancy guidelines described above). Spraying (if employed) shall only be conducted on windless days;~~
- c. Biological: Biological methods may be used subject to agency review and approval by California Department of Fish and Game (CDFG), Nevada Department of Wildlife (NDOW), and Bureau of Land Management (BLM), and review and approval by the CPM ~~and are either locally native species or have no documented incidences of, or potential for naturalizing, hybridizing with native species, or preying on special status species;~~
- d. Mechanical: Disking, tilling, and mechanical mowers or other heavy equipment ~~may shall be used with the approval of the CPM. not be employed in natural areas but h~~Hand weed trimmers (electric or gas-powered) may be used. Mechanical trimmers shall not be used during periods of high fire risk and shall only be implemented during early morning hours when the fire risk is lowest. Contact information for the local fire department and Cal-Fire shall be clearly posted at all times. A live water supply, shovels, and fire extinguishers shall be available at all times during mowing and other mechanical weed controls.

At least 90 days prior to the start of any project-ground disturbing activity, the project owner shall submit the draft Weed Management Plan to the CPM for review and approval. No less than 30 days prior to the start of any project-ground disturbing activity, the project owner shall provide the CPM with the final version of the Weed Management Plan. Any modifications to the approved plan shall be made only after approval by the CPM.

~~No less than 60 days prior to start of any project related ground disturbance activities, the project owner shall provide the CPM with a copy of an agreement between the project owner and local agricultural commissioner(s) regarding compensation for increased weed monitoring and abatement costs, and provide written evidence that the first annual fee has been paid.~~

Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval a written report identifying which items of the Weed

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Management Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which items are still outstanding.

As part of the Annual Compliance Report, each year following construction the Designated ~~Botanist~~ Biologist shall provide a report to the CPM that includes: a) a summary of the results of noxious weed surveys and management activities for the year; b) discussion of whether weed management goals and objectives for the year were met; c) evidence documentation that weeds targeted for eradication or control did not spread offsite beyond background levels already present ~~sensitive biological resources in close proximity were not harmed by weed management activities;~~ and d) recommendations for weed management activities for the upcoming year.

206. Pages 4.2-216 through 219, BIO-19: Please revise BIO-19 as follows:

**SPECIAL-STATUS PLANT IMPACT AVOIDANCE AND MINIMIZATION MEASURES**

**BIO-19** Through implementation of standard measures in the BRMIMP and Weed Management Plan, ~~t~~The project owner shall will avoid and minimize prevent ~~accidental potential indirect impacts to special-status plant occurrences offsite, that are in close proximity to project activities through the measures described below. This includes all activities during project construction, operation, and closure that could directly or indirectly harm occurrences offsite in close proximity to the project. "Project" includes areas temporarily and permanently disturbed by the project, including the solar fields, linear facilities (within California), and areas disturbed by temporary access roads, fence installation, construction work lay down and staging areas, parking, storage, or any other activities in close proximity to offsite special-status plants. The project owner is not responsible for managing or monitoring special-status plant occurrences offsite, but shall prevent indirect impacts to nearby occurrences by employing the avoidance and minimization measures contained below for project construction and operation. The project owner shall implement the following measures:~~

**Verification:** The Special-Status Plant Impact Avoidance and Minimization Measures shall be incorporated into the BRMIMP as required under Condition of Certification BIO-7 and implement the measures during project construction and operation. Implementation of the standard measures undertaken as part of the BRMIMP will be reported by the Designated Biologist as described in the BIO-1 and 2. The following measures shall be implemented:

- ~~1. Designated Botanist. For work within 100 feet of any offsite special status plant occurrences, a Designated Botanist shall be retained to oversee the activities to ensure there are no accidental or indirect impacts. The Designated Botanist shall meet the qualifications listed in BIO-21. The Designated Botanist shall oversee and train any other Biological Monitors tasked with conducting botanical survey and monitoring work.~~
2. Special-Status Plant Impact Avoidance and Minimization Measures. The project owner shall incorporate implement all measures for protecting special-status



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plants in close proximity to the site into that are provided in the BRMIMP (BIO-7). These measures shall include the following elements: erosion and sediment control, weed control, and monitoring of fencelines to avoid inadvertent impacts outside the project area.

- a. ~~Site Design Modifications:~~ Incorporate modifications to site design or construction techniques to minimize direct and indirect impacts to special-status plants around the project perimeter and access roads including: limiting the width of the work area; adjusting the location of staging areas, lay downs, secondary access roads; and modifying the location of discharge points of any diverted channels to maintain existing surface drainage patterns. These modifications, and the locations of offsite special-status plant occurrences within 100 feet of the project boundary shall be clearly depicted on the grading and construction plans, and on report-sized maps in the BRMIMP.
- b. ~~Establish Environmentally Sensitive Areas (ESAs).~~ Prior to the start of any ground or vegetation disturbing activities, the Biological Monitor shall establish special-status plants located outside of the project boundary and within 100 feet of the temporary Environmentally Sensitive Areas (ESAs) to protect the offsite occurrences from accidental impacts during construction and operation. The adjacent offsite occurrences shall be clearly delineated in the field with temporary construction fencing and signs prohibiting movement of the fencing and any sediment controls at the project boundary under penalty of work stoppages and additional compensatory mitigation. The occurrences shall also be clearly identified with signage to ensure that avoided plants are not inadvertently harmed during construction, operation, or closure. The offsite occurrences shall also be clearly depicted on construction drawings as ESAs, which shall also include all avoidance and minimization measures on the margins of the construction plans. Equipment and vehicle maintenance areas, spoil piles, and wash areas shall be located at least 100 feet from any adjacent offsite occurrences.
- c. ~~Special Status Plant Worker Environmental Awareness Program (WEAP).~~ The WEAP ~~(BIO-6)~~ shall include training components specific to protection of special-status plants as outlined in this condition. Training shall be conducted by the Designated Botanist ~~(BIO-21)~~.
- d. ~~Herbicide and Soil Stabilizer Drift Control Measures.~~ Special-status plant occurrences shall be protected from herbicide and soil stabilizer drift. The Weed Management Plan ~~(BIO-18)~~ shall include measures to avoid herbicide drift or residual toxicity to special-status plants consistent with guidelines such as those provided by the Nature conservancy's The Global Invasive

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Species Team<sup>26</sup> the U.S. Environmental Protection Agency, and the Pesticide Action Network Database.<sup>27</sup>

- e. ~~Avoid Weed Contaminated Erosion and Sediment Control Materials.~~ Any seed mixes used for erosion control shall not include invasive or non-native plants. Erosion control seed mixes, straw, and other mulches, if used, shall be certified weed free. Equipment shall be cleaned before entering and exiting the site pursuant to the Weed Management Plan (~~BIO-18~~). These specifications shall be incorporated in the Drainage, Erosion, and Sedimentation Control Plan required under **SOIL-1**.
- f. ~~Locate Staging, Parking, Spoils, and Storage Areas Away from Special-Status Plant Occurrences.~~ Spoil piles, equipment, vehicles, and materials storage areas, parking areas, equipment and vehicle maintenance areas, and wash areas shall be placed at least 100 feet from any offsite special-status plant occurrences. These specifications shall be incorporated in the Drainage, Erosion, and Sedimentation Control Plan required under **SOIL-1**.
- g. Monitoring and Reporting Requirements. The Designated ~~Botanist~~ Biologist shall conduct weekly regular scheduled monitoring of the erosion control measures and other general BRMIMP requirements to verify that all conditions are met. ~~ESAs that protect adjacent ofsite special-status plant occurrences during construction, operation, and decommissioning activities in close proximity to the occurrences.~~

Implementation of the special-status plant impact avoidance and minimization measures shall be reported in the Monthly Compliance Reports prepared by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval a written construction termination report identifying how measures have been completed and any remedial action that was required.

The project owner shall submit a monitoring report every year for the life of the project to monitor effectiveness of protection measures for all avoided special-status plants to the CPM. The monitoring report shall include: a) dates of worker awareness training sessions and attendees; b) map showing the location of all special-status plant occurrences within 100 feet of the project boundary (including linears and access roads); c) location and description of measures implemented, including dates, photos, and monitor/worker names; d) description of the status, health, and threats to special-status plant occurrences; e) location description of any unanticipated or unpermitted adverse impacts to occurrences and remedial action taken; and f) outstanding follow-up items and recommendations for remedial action in the next year.

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<sup>26</sup> Hillmer, J. & D. Liedtke. 2003. Safe herbicide handling: a guide for land stewards and volunteer stewards. Ohio Chapter, The Nature Conservancy, Dublin, OH. 20 pp. Online: <<http://www.invasive.org/gist/products.html>>

<sup>27</sup> Pesticide Action Network of North America. Kegley, S.E., Hill, B.R., Orme S., Choi A.H., PAN Pesticide Database, Pesticide Action Network, North America. San Francisco, CA, 2010 <<http://www.pesticideinfo.org>>

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207. Pages 4.2-219 through 225, BIO-20: Please revise BIO-20 as follows:

**SPECIAL-STATUS PLANT COMPENSATORY MITIGATION PLAN**

**BIO-20** To mitigate for potentially significant impacts to special-status plants that occur on the project site, the project owner shall implement mitigation to offset the impact. Several mitigation options could be implemented, depending on results of special-status plant surveys. These could include: a) acquisition of mitigation lands and protection of special-status plants under a conservation easement, b) contributions to an in-lieu program, or c) performing additional surveys and herbarium collection studies to document that more localities of these special-status plants occur than previously known. This mitigation approach is appropriate because of two unusual circumstances: a) drought conditions in 2012 prevented germination and growth of several of the special-status plants and they could not be detected in the field, and b) three special-status plants have been added to list within the last year and even using the best available science, very little is known about their abundance and distribution. ~~acquire mitigation lands containing that meet the criteria, performance standards described below, and by protecting the occurrences in perpetuity under a conservation easement.~~ If lands are acquired, ~~t~~The project owner shall provide funding for the acquisition and long-term maintenance and management of the acquired lands as described below, and based on the fee schedule shown in **Biological Resources Table 9**. The responsibility for acquisition of lands may be delegated by written agreement from the Energy Commission staff to a third party, such as a non-governmental organization supportive of habitat conservation, as described. Such delegation shall be subject to approval by the CPM, in consultation with CDFG, prior to land acquisition, enhancement, or management activities.

**Verification:** No fewer than 90 days prior to the start of project ground-disturbing activities, the project owner shall submit to the CPM for review and approval a conceptual proposal for mitigation by one or more of the three methods described (acquisition and avoidance) that meets the criteria and performance standards described below, and according to the mitigation ratios described below.

- 1) Compensatory Mitigation Ratio. Significant impacts that are mitigated by land acquisition shall be mitigated ~~at a ratio of 3:1, based on the number of occurrences affected, for NatureServe state rank 1 plants (S1), and a 2:1 ratio for state rank 2 plants (S2). For example, three California Natural Diversity Database (CNDDDB) occurrences must be acquired and preserved for every single occurrence of a state rank 1 species eliminated. Range ranks (e.g., "S2S3") shall defer to the more imperiled rank, at a ratio to be determined through coordination with the CEC.~~ Acquisition lands containing more than one of the affected species shall be credited for both species. Integration of special-status plant mitigation land with other mitigation lands is described below.

The amount of the security deposit shall be calculated ~~by~~ to include the cost of the mitigation land and management costs over time, converting the required number of occurrences to an acreage figure based on the average size of an occurrence for the affected species in the project vicinity, and informed by the applicant's data on special-

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~~status plant occurrences in the project vicinity.~~ The compensation lands selected for acquisition must meet one of the following selection criteria:

- a) Occupied Habitat. The compensation lands selected for acquisition shall be occupied by the target plant population and shall be characterized by site integrity and habitat quality required to support the target species, and shall be of equal or better habitat quality than that of the affected occurrence. The occurrence of the target special-status plant on the proposed acquisition lands should be viable, stable or increasing.
- b) Unoccupied but Adjacent. Compensation may also be achieved by acquiring habitat for which occupancy by the target species has not been documented, if the proposed acquisition lands are immediately adjacent to occupied habitat, contain suitable habitat for the affected species AND can be demonstrated, subject to approval of the CPM, to be ~~essential~~ important for the ~~defensibility and~~ long-term sustainability of the occupied habitat by providing a protective buffer and enhancing connectivity with suitable habitat of a good to high quality.

Review and Approval of Compensation Lands Prior to Acquisition. A Draft Mitigation Plan shall be subject to review and approval of the CPM prior to acquisition. The Draft Plan shall discuss the suitability of the proposed parcel(s) as compensation lands for special-status plants in relation to the criteria listed above. The project owner shall submit the Final Plan and formal acquisition proposal to the CPM describing the parcel(s) intended for purchase, and must be approved by the CPM.

Management Plan. The project owner or approved third party shall prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The goal of the management plan shall be to support and enhance the long-term viability of the target special-status plant occurrences. The management plan shall also include long-term monitoring and reporting on the implementation, effectiveness and compliance with the conservation goals and objectives of the mitigation. The Management Plan shall be submitted for review and approval to the CPM.

Integrating Special-Status Plant Mitigation with Other Mitigation Lands. If all or any portion of the acquired Desert Tortoise, Waters of the State, or other required compensation lands meets the criteria above for special-status plant compensation lands, the portion of the other species' or habitat compensation lands that meets any of the criteria above may be used to fulfill that portion of the obligation for special-status plant mitigation. Mitigation obligations for special-status plants shall not be fulfilled by nesting with other mitigation lands if the lands do not meet all the criteria and performance standards described in this condition. Potential mitigation lands containing more than one of the significantly affected species would be credited for both species, i.e., one parcel could be used to fulfill the mitigation obligations for more than one special-status plant species providing the parcel met all the selection criteria.

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Compensation Lands Acquisition Requirements. The project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM, has approved the proposed compensation lands:

- a. Preliminary Report. The project owner, or an approved third party, shall provide a recent preliminary title report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM.
- b. Title/Conveyance. The project owner shall acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement, as required by the CPM. Any transfer of a conservation easement or fee title must be to a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to CDFG or other public agency approved by the CPM. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of the deed holder approved by the CPM. The CPM may require that another entity approved by the CPM be named a third party beneficiary of the conservation easement. The project owner shall obtain approval of the CPM of the terms of any transfer of fee title or conservation easement to the compensation lands.
- c. Initial Protection and Habitat Improvement. The project owner shall fund activities that the CPM requires for the initial protection and habitat improvement of the compensation lands, if habitat improvement is necessary. These activities will vary depending on the condition and location of the land acquired, but may include: initial enhancement (e.g., signs, fencing, protection from off-road vehicles); restoration actions needed to maintain the viability of the occurrences (e.g., removal of invasive species, barricading and decommissioning off-road vehicle trails, protection from herbivores, managing public access, enforcement); and monitoring and reporting on implementation, effectiveness and compliance with the conservation goals and objectives of the mitigation. For determining the amount of security, the cost of these activities would use the estimated cost per acre for Desert Tortoise mitigation as a best available proxy; the costs per acre and other calculations are itemized in **Biological Resources Table 9**. The actual costs will vary depending on the measures that are required for the compensation lands. These measures will be determined during the PAR or similar analysis. A non-profit organization or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965), and if it meets the approval of the CPM.
- d. Property Analysis Record. Upon identification of the compensation lands, the project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management

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fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPM before it can be used to establish funding levels or management activities for the compensation lands.

- e. Long-term Maintenance and Management Funding. The project owner shall deposit into an account managed by a land trust or other non-profit organization to fund a capital long-term maintenance and management fee (endowment) in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands. The CPM may designate another non-profit organization to hold the long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity.
- f. Interest, Principal, and Pooling of Funds. The project owner shall ensure that an agreement is in place with the long-term maintenance and management fund (endowment) holder/manager to ensure the following requirements are met:
  - i. Interest. Interest generated from the initial capital long-term maintenance and management fund shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action that is approved by the CPM and is designed to protect or improve the habitat values of the compensation lands.
  - ii. Withdrawal of Principal. The long-term maintenance and management fund principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM or by the approved third-party long-term maintenance and management fund manager, to ensure the continued viability of the target species on the compensation lands.
  - iii. Pooling Long-Term Maintenance and Management Funds. An entity approved to hold long-term maintenance and management funds for the project may pool those funds with similar funds that it holds from other projects for long-term maintenance and management of compensation lands for special-status plants. However, for reporting purposes, the long-term maintenance and management funds for this project must be tracked and reported individually to the CPM.
- g. Other Expenses. In addition to the costs listed above, the project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to the title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.
- h. Mitigation Security. The project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement any of the

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mitigation measures required by this condition that are not completed prior to the start of ground-disturbing project activities. Financial assurances shall be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of financial security ("Security") approved by the CPM. ~~The total number of acres used to determine the security deposit shall be calculated by converting the required number of occurrences (based on the mitigation ratios described in #1, above) to an acreage figure based on the average size of an occurrence for the affected species in the project vicinity, as indicated by the applicant's data on special status plant occurrences in the project vicinity.~~ The estimated acquisition costs and amount of the security shall be calculated based on the estimated cost per acre for Desert Tortoise mitigation as a best available proxy. The actual costs to comply with this condition will vary depending on the actual costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a PAR report. Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval of the form of the Security. The CPM may draw on the Security if the CPM determines the project owner has failed to comply with the requirements specified in this condition. The CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the Security to implement measures in this condition may not fully satisfy the project owner's obligations under this condition, and the project owner remains responsible for satisfying the obligations under this condition if the Security is insufficient. The unused Security shall be returned to the project owner in whole or in part upon successful completion of the associated requirements in this condition.

- i. NFWF REAT Account. The project owner may elect to comply with the requirements in this condition for acquisition of compensation lands, initial protection and habitat improvement on the compensation lands, or long-term maintenance and management of the compensation lands by funding, or any combination of these three requirements, by providing funds to implement those measures into the NFWF REAT Account. To use this option, the project owner must make an initial deposit to the REAT Account in an amount equal to the estimated costs (as set forth in the Security section of this condition) of implementing the requirement. However under Senate Bill 436 NFWF is currently precluded from holding project related endowments. Should the applicant elect to utilize a REAT account as a mitigation option the endowment may not be held by NFWF but another equivalent land trust organization that actually holds and manages the endowment for compensation lands. If the actual cost of the acquisition, initial protection and habitat improvements, or long-term funding is more than the estimated amount initially paid by the project owner, the project owner shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, and the long-term funding requirements as established in an approved PAR or PAR-like analysis. If those actual costs or PAR projections are less than the amount initially



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transferred by the Applicant, the remaining balance shall be returned to the project owner.

The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission staff. Such delegation shall be subject to approval by the CPM prior to land acquisition, enhancement or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented by the time the plant is in operation, estimated to be within 18 29 months from ~~of~~ the start of ground disturbance.

~~2. Partial onsite avoidance through site design modifications. Staff may recommend partial onsite avoidance for any of the significantly impacted species if there are insufficient opportunities for offsite mitigation. Avoidance, if recommended, would be limited to the outer rows of heliostats and the temporary construction area where avoided occurrences would have connectivity to adjacent undisturbed habitat. Heliostats and access roads and other components shall be excluded from the avoidance area to achieve a buffer of 500 feet or more from the uphill side of a special-status plant occurrence and 300 feet from the downhill side. The temporary or permanent road or utility construction, parking, storage, vegetation maintenance, spraying, or any other project activity shall not be allowed within the boundaries of the onsite preserve. Any avoided occurrences onsite shall be protected during construction, operation, and closure by the avoidance and minimization measures described in Condition of Certification **BIO-19**.~~

2. **Additional Surveys to Document New Special-Status Plant Occurrences.** Three of the special-status plant species observed onsite were new reports for California or have only recently been added to the CNPS Inventory. Nye milk-vetch (*Astragalus nyensis*) and Torrey's joint-fir (*Ephedra torreyana*) were first documented in California during the surveys. Nye milk-vetch was added to the CNPS Inventory on December 27, 2011. Torrey's joint-fir was added on February 8, 2012, after spring 2011 surveys were complete. Gravel milk-vetch (*Astragalus sabulorum*) was added to the CNPS Inventory in October 19, 2011. Nye milk-vetch, gravel milk-vetch, and Torrey's joint-fir were not on any special-status plant lists at the time the protocol-level surveys were performed of the site. Nye milk-vetch and Torrey's joint-fir are still not even in the main treatment of plants for the California flora used by botanists to key out plants, the Jepson Manual (1993), and the Second Edition of the Jepson Manual (2012). Because these species have just recently been added to the list of special-status plants, and conditions were very dry in 2012, data are limited for these species. There is a very high likelihood that additional locations of these species occur but they are not documented yet because areas surrounding the site are very remote and haven't been surveyed for special-status plants. Annual (or short-lived herbaceous perennial species) such as Nye milk-vetch and gravel milk-vetch did not germinate or grow in 2011. Therefore, it was not possible to detect

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them at all in 2012. For these reasons, additional surveys for these species can be conducted as soon as they can be performed (rain dependent).

Mitigation for special-status plants will be developed based on the best available data at the time of the Commission Decision and the amount of compensation lands or an in lieu fee payment would be calculated based on an occurrence to occurrence replacement basis. Security, based on the land acquisition and management costs, would be provided. However, if additional localities of these special-status plants are identified during 2012 or 2013 surveys, the compensatory mitigation ratio would be adjusted so it is proportionate to the impact. If additional occurrences of these species are found, it is possible that the impacts to these species would no longer be considered significant, and mitigation would not be required.

~~If the project owner elects to fulfill all or a portion of the mitigation obligations through onsite avoidance that meets the standards described above, a detailed proposal, including maps and avoidance & minimization measures to be employed shall be submitted to the CPM for review and approval no fewer than 30 days prior to the start of any project ground-disturbing activities.~~

If the project owner elects to mitigate through off-site compensation, the project owner shall provide the CPM, no less than 30 days prior to the start of any project related ground-disturbing activities, written verification that an approved financial security in accordance with this condition of certification has been established. The financial security will be used to purchase compensatory habitat and must be accomplished no later than ~~18~~ 29 months from the start of any project-related construction activities. If the Applicant wishes to perform additional surveys to identify new occurrences of these special-status plants, and demonstrate they are more common than previously known, a detailed rare plant survey report must be prepared and submitted to the CPM for review following the surveys. The compensatory mitigation ratio would be adjusted so that the mitigation required (either an in lieu fee or offsite land acquisition) is proportionate to the impact. If additional occurrences of these species are found, it is possible that the impacts to these species would no longer be considered significant, and mitigation would not be required.

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208. Pages 4.2-225 and 226, BIO-21: As described on Page 4.2-129 of the PSA, project activities are expected to eliminate many of the occurrences within the project footprint. The taller tower, tighter heliostat spacing, and resulting smaller footprint do not allow space within the solar field for onsite special-status plant protection areas (halos). The special-status plant species within the solar field will not be protected and are assumed by staff to be impacted. Because there will not be special-status plant protection areas within the solar field, there will not be any botanical resources onsite that require intensive monitoring. Therefore, it is not necessary to have a designated botanist onsite for the life of the project when there won't be anything onsite to monitor. Other projects, have monitors that are well-qualified in botany and wildlife (especially tortoise) perform general environmental monitoring and that has been very efficient and successful. Therefore, this condition should be deleted.
209. Pages 4.2-240 and 241, BIO-26: Facility closure and decommissioning requirements are already provided for in the COMPLIANCE conditions of certification, including COMPLIANCE-11, which requires the project owner to submit a closure plan that takes into consideration the applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure. Not only is BIO-26 duplicative of the requirements of COMPLIANCE-11, but could be potentially conflicting as well.

## **CULTURAL RESOURCES**

### **General Comments**

#### **The Five Multi-State or Unspecified "Resources" Analyzed in the SSA.**

1. To place the SSA's Cultural Resources analyses into proper context, it is important to understand the five, multi-state resources Staff claims have the potential to be significantly impacted by the project.

The SSA finds that the HHSEGS affects five historic resources: an archaeological landscape, three ethnographic landscapes, and an historic trail and road corridor. (Supplemental Staff Assessment, "SSA", p. 1.). As discussed below, the geographic scope of the resources studied in the SSA is expansive, stretching well beyond the project boundaries and well beyond borders of California. One resource is located entirely in Nevada. Another covers four western states. All five have some or a significant portion of their basis in states other than California. Some are completely without physical boundaries. They are conceptual or metaphysical constructs labeled as "landscapes," without physical boundaries:

(1) The Pahrump Metapatch Mesquite Woodland-Coppice Dune Archaeological Landscape is identified as an "archeological landscape." This resource is located entirely in Nevada. (SSA, p. 42.)

(2) The Salt Song Landscape is identified as an ethnographic "landscape." The geographic scope of this landscape is very large: "The Salt Song Landscape, as generally described above (see Cultural Resources Figure 2), encompasses portions of current day

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southern California, southern Nevada, northeastern Arizona and southwestern Utah..." (SSA, p. 30.) Cultural Resources Figure 2 shows the four-state area.

(3) The Pahrump Paiute Home Landscape is identified as an ethnographic "landscape." This landscape "ensues from and radiates out from and around the Spring Mountains" and "consists of numerous component landscape areas with multiple contributing attributes." (*Id.*) The PSA: "does not attempt to specifically delineate the boundaries of the Pahrump Paiute Home Landscape..." (*Id.*) Accordingly, its precise location is not specified in the PSA, nor shown on any map.

(4) The Mo hav Landscape is identified as an ethnographic "landscape." The Mo hav Landscape is actually a subset of the Pahrump Paiute Home Landscape, located fully within the larger landscape. While there is a map of this landscape (Cultural Resources Figure 3), no explanation is provided for how the landscape's boundaries were created. "...the Mo hav Landscape is fully described and delineated in a section of the Ethnography report (Appendix A— CONFIDENTIAL)." (*Id.*) No maps are included in the SSA, and no party has access to the Confidential Appendix A.

(5) Old Spanish Trail-Mormon Road (OST-MR) Northern Corridor is, as the name suggests, a system of routes or "corridor," as opposed to a specific trail or route. The OST-MR is arguably more expansive than the four-state Salt Song Trail, "The Old Spanish Trail-Mormon Road ran from Santa Fe, New Mexico, through Colorado, Utah, Arizona, Nevada, and into Los Angeles, California," and the geographic scope of the "corridor" evaluated is not defined (SSA, p. 9). Moreover, although only specific routes of the OST-MR are designated as a National Historic Trail,<sup>28</sup> the SSA purports to extend this federal designation, which can be done only by the Secretary of the Interior if certain criteria are met, to all potential tracks/traces of the OST-MR corridor in the project area. (SSA, p. 70.)

**How Were Certain Multi-State Resources Identified? The Answer is "Confidentially."**

2. The SSA does not describe the process for how the three ethnographic, multi-state "resources" were identified. Instead, the SSA relies on a "confidential" appendix, "Confidential Appendix A."

The SSA's reliance on a confidential appendix is unprecedented.

The Commission's regulations are silent on any issues related to a confidential appendix forming the basis for the SSA's identification of "resources" and reliance on that confidential appendix as the basis for drawing conclusions on the project's potential impacts on cultural resources.

The Applicant has not been provided copies of this Confidential Appendix A, nor have any other parties. It is not clear whether the Staff intends to provide the information to the Applicant or any other party. It is not clear what use, if any, the Applicant or other parties can make of Confidential Appendix A in this proceeding.

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See, 16 U.S.C. § 1244(a)(23)(A),(F); also see 16 U.S.C. § 1245.

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The use of an inaccessible Confidential Appendix A raises serious due process and fundamental fairness questions that should be addressed at the next all party Status Conference.

The SSA concludes that there are significant, unmitigable environmental impacts to archaeological, ethnographical, and historic-built environment resources. These conclusions are premised, in part, on a confidential report that has been withheld in its entirety. In this proceeding, the Committee's decision must be supported by substantial evidence in the record. (*San Joaquin Raptor Rescue Ctr. v County of Merced* (2007) 149 Cal.App.4th 645, 654.) "Substantial evidence" is enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." (14 Cal. Code Regs. § 15384(a).) It includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts. (Pub. Res. Code § 21082.2(c); 14 Cal. Code Regs. § 15384(b).) Substantial evidence does not include argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly inaccurate or erroneous, or evidence of social or economic impacts which do not contribute to, or are not caused by, physical impacts on the environment. (Pub. Res. Code § 21082.2(c).)

Without the ability to review the analysis and assumptions regarding the potentially impacted cultural resources, there is no way for the Applicant to ascertain the basis of the SSA's conclusions. There is no documentation to determine whether the SSA's conclusions are based on substantial evidence or "speculation, unsubstantiated opinion or narrative, evidence which is clearly inaccurate or erroneous." (Pub. Res. Code § 21082.2(c). )

In balancing the competing interests of disclosure and protecting cultural resources, sufficient information must be provided to permit Applicant to assess the SSA's statements regarding the existence of cultural resources on the site, the potential adverse impacts the project would impose on those resources, and the effectiveness of the specified mitigation measures in avoiding or reducing those impacts to a level of insignificance. Keeping the report confidential deprives the Applicant of the opportunity to review the basis for the SSA's decision on the project, and hampers the Applicant's ability to understand and respond to the SSA's assertions regarding the environmental consequences of the project.

**The SSA's Conclusions that a Resource is a Historical Resource Must be Based on Evidence, Not Assumptions.**

3. The SSA states, at various points, that certain "assumptions" were made to further the SSA's analysis of cultural resources. For example, the SSA states that an "assumption" was made as to the reason for the historical significance of a landscape (its "associative values"). (SSA, p. 7.) Other examples include the statement that once a resource is "assumed significant by the lead agency, the resource is considered significant under CEQA and treated accordingly," and assumptions regarding the nature and type of impact that the project would have on a resource. (SSA, p. 47) This rationale is contrary to law. While CEQA permits a lead agency to determine that any "object, building, structure, site, area, place" is historically significant, CEQA explicitly provides that such a

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determination must be supported by substantial evidence. (14 C.C.R. § 15064.5) An agency is simply not allowed under CEQA to assume that a resource is a significant historical resource without evidence. Given that the threshold question as to whether a resource qualifies as a historical resource pursuant to California law is premised on the assumption that a resource is historically significant, the SSA's cultural resources analysis is fundamentally flawed because it identifies certain resources as historical resources without any factual or legal basis.

**The California Register of Historic Resources, a Creature of California law, Is Only Applicable to California Resources.**

4. The fundamental principles of federalism dictate that laws of one state have no effect in another sovereign state. Nevertheless, the SSA purports to apply California law related to the California Register of Historic Resources ("CRHR") to resources scattered throughout most of the western United States.

As discussed above, each of the five resources identified in the SSA as potentially impacted are multi-state, and in some case, west-wide resources. However, the plain language of the Public Resources Code provides that only California resources are eligible for the CRHR. For example, only California properties listed in, or formerly determined eligible for listing in, the National Register of Historic Places are automatically listed on the CRHR.<sup>29</sup> Thus, the SSA should be revised to remove from consideration multi-state resources.

**The SSA Does Not Establish Whether The Five Identified "Resources" Are the Type of Resources Eligible for the CRHR.**

5. Even assuming that multi-state resources are eligible for the CRHR, the SSA specifically declines to explain how a "landscape" or a "corridor" constitutes a historical resource under California law. As to the landscapes, the SSA makes conclusory statements regarding the eligibility of the resources based on a reading of inapplicable National Park Service guidance developed for the National Register of Historic Places. (SSA, p. 41.) No analysis is conducted to determine the landscape's suitability as a type of historical resource eligible under the requirements of the CRHR, which are distinct from the requirements of the NRHR to better reflect the history of California. (14 C.C.R. § 4852.)

There are no clearly defined geographic boundaries for four of the resources (the Salt Song Landscape, the Pahrump Paiute Home Landscape, the Pahrump Metapatch, and the OST-MR Northern Corridor) proposed for eligibility. Even without access to Confidential Appendix A, it is clear that these multi-state intangible resources, lacking physical dimensions, are not eligible for inclusion into the CRHR.

The SSA also omits this crucial component of the analysis of a resource's historical significance- the physical identity of the resource. (14 C.C.R. § 4852) The SSA does not identify the physical characteristics that existed during the resource's period of significance, or identify which of those characteristics evidencing the historical significance of the resource have survived to the present. The SSA does not explain how

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Pub. Resources Code § 5024.1(a); 14 C.C.R. § 4851.

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the multi-state landscapes retain enough of their historic character or appearance to be recognizable as historical resources, or to convey the reasons for their significance. Indeed, the SSA makes general statements that the amorphous “landscapes” maintain integrity of “association, feeling, setting and location” without explaining what existing physical characteristics remain in the landscapes to support a determination that these landscapes are historically significant under the law.

**Do any of the Five Resources Meet California’s Criteria for Evaluating the “Significance” of a Historic Resource?**

6. As set forth above, none of the five multi-state resources identified qualifies as a “Historic Resource” as that term is defined in California statute and regulation. Even assuming, for the sake of argument, that these five resources meet the statutory and regulatory definitions of “Historic Resources”, they would not likely pass the next hurdle and be considered “significant” historic resources eligible for listing in the CRHR or under CEQA. (We say “likely” here in part because we are unaware of what is in Confidential Appendix A.)

California regulatory law sets forth four criteria for determining whether a historic resource is a “significant” historic resource:

An historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

- (1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
- (2) It is associated with the lives of persons important to local, California, or national history;
- (3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
- (4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation. (14 CCR 4852(b).)

If the five resources identified in the SSA are measured against these criteria, are they “significant” historic resources that meet the requirements of the CRHR?

The SSA states that the Pahrump Metapatch Mesquite Woodland-Coppice Dune Archaeological Landscape is significant under Criterion 1 and 4. In its discussion of the applicability of Criterion 1, the SSA does not state what specific events are associated with this landscape, or the significant contributions to broad patterns of local or regional history, or the cultural heritage of California or the United States made by such events. As to Criterion 4, the SSA only speculates that the landscape has the potential to yield information important to the prehistory or history of the local area, California, or the



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nation. Therefore, whether the Pahrump Metapatch Landscape meets CRHR criteria for eligibility is not established in the SSA by substantial evidence.

(It should be noted that the SSA misapplies Criteria 4 on a regular basis. Criteria 4 asks whether the resource “has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.” (14 CCR 4852(b); emphasis added.) The SSA in essence uses the “has the potential to yield” statement as a basis for speculation and assumption without any supporting substantial evidence; it is impossible to know what is underground so we have to assume it “has the potential to yield” something. This assumption is particularly troubling when the HHSEGS project will not be built on the off-site resources analyzed.)

Next, the SSA states that the Salt Song Landscape is significant under Criteria 1, yet does not provide an explanation of the events associated with the landscape, or how those events have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States, or explain the physical characteristics in the landscape that were present during the period of significance and which conveys the reason for the significance. The SSA also states that the Salt Song Landscape is significant under Criteria 3, which provides that a resource can be eligible if it “embodies the distinctive characteristics of a type, period, region or method of construction or represent the work of a master or possesses high artistic values.” The SSA does not explain how a landscape covering several western states, with different areas of development, including Las Vegas, and natural features, contains distinctive construction characteristics, represents the work of a master, or possesses high artistic values. Therefore, whether the Salt Song Landscape meets CRHR criteria for eligibility is not established in the SSA by substantial evidence.

The SSA states that the Pahrump Paiute Home Landscape is eligible for listing under Criteria 1 and 2. Again, the SSA does not provide an explanation of the events associated with the landscape, or how those events have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States, or explain the physical characteristics in the landscape that were present during the period of significance and which conveys the reason for the significance. The SSA also states that the landscape is eligible for listing under Criteria 2 for the association of the landscape with the life and times of Chief Tecopa. The SSA does not explain the physical aspects of the landscape that were present during the period of significance, or which physical aspects, if any, are still present that convey the historical significance of the landscape’s association with Chief Tecopa. Therefore, whether the Pahrump Paiute Home Landscape meets CRHR criteria for eligibility is not established in the SSA by substantial evidence.

The SSA states that the Mo hav Landscape is eligible for listing under Criteria 1. The SSA asserts that the Mo hav Landscape is significant under Criteria 1 because it contributes to the historical significance of the Pahrump Paiute Home Landscape. There is no evidence in the record, substantial or otherwise, to support this bare assertion. The SSA does not provide an explanation of the events associated with the landscape, or how those events have made a significant contribution to the broad patterns of local or

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regional history, or the cultural heritage of California or the United States, or explain the physical characteristics in the landscape that were present during the period of significance and which conveys the reason for the significance.

The SSA also states that Mo hav landscape is eligible under Criteria 4, because it has the potential to yield, information important to the prehistory or history of the local area, California, or the nation. The SSA appears to base this assertion on the assumption that the Mo hav Landscape has not been subject to archaeological investigations. This assumption is not supported by the information that the Applicant has provided to date. As depicted on Cultural Resources Figure-3 in the SSA, the Mo Hav Landscape encompasses the HHSEGS site. The HHSEGS site and buffer area around the site were subject to Phase I archaeological surveys, and portions within the HHSEGS site were subject to Phase II archaeological surveys. (AFC Section 5.3; also see Data Responses Set 1D-6.) These surveys confirmed that there are no historical resources eligible for listing on the HHSEGS site. Moreover, the HHSEGS site and area to the west and south of the project were previously subject to environmental review. Cultural resources surveys and tribal consultations conducted for that review confirmed the absence of significant historical and archaeological resources on the site, and that no Native American burial sites were present in the areas under review.<sup>30</sup> Therefore, the SSA should be revised to reflect the factual record in this proceeding built on the Applicant's investigations. The Mo hav landscape does not meet this criteria.

As to the fifth resource, the SSA states that the Old Spanish Trail-Mormon Road (OST-MR) Northern Corridor is eligible under Criteria 1 and Criteria 4. As with the other historical resources, the SSA is not clear as to the scope of the resource being proposed for eligibility, and whether the SSA intends that a vast geographic area be considered for inclusion in the CRHR, or only the tracks/traces within the corridor.

As to the potential eligibility of tracks/traces within the project site, the SSA states that traces within the project site have not been "ground truthed" and that any other traces/tracks that are discovered may have "data potential" eligible for consideration under Criteria 4. (SSA, pp. 68-70.) This statement is incorrect. As stated above, the entire project site and buffer were subject to extensive survey as described in the AFC in Section 5.3, AFC Appendices 5.3A-5.3E, and the Data Responses of the Applicant, most notably with respect to the OST-MR, Data Response 125, the historic roads and trails report. The entire project site and surrounding areas were surveyed by cultural resources experts to "ground truth" the map of "projected" traces of the OST-MR presented by the Old Spanish Trail Association. These surveys confirmed that there was no evidence of the traces "projected" by the Old Spanish Trail Association on the project site. Therefore, while traces/track within the OST-MR Northern Corridor may have data potential, the SSA should be revised to reflect that the HHSEGS site was "ground truthed" to determine whether any tracks or trails (prehistoric, historic, or otherwise) were present on the project site.

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Draft Environmental Impact Report for Parcel Maps 86 and 87, (1974).

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**Even Assuming that the Five Resources are Eligible, Historic Resources of Sufficient Integrity, Will the HHSEGS Project “Cause a Substantial Adverse Change in the Significance of the Resource”?**

7. The CEQA Guidelines provide that a project “with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.” (14 CCR 15064.5(b).) A “substantial adverse change” in the significance of an historical resource “means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.” (14 CCR 15064.5(b)(1).) Further, the significance of a historic resource is “materially impaired” when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA. (14 CCR 15064.5(b)(2)(A)-(C).) (emphasis added.)

Thus, the SSA should discuss whether the historical significance of a resource is materially impaired, and examine whether physical characteristics justifying the resources inclusion in the CRHR are demolished or materially altered by virtue of the project.

As to the Pahrump Metapatch Mesquite Woodland-Coppice Dune Archaeological Landscape, the SSA should be revised to make clear that the resource is located entirely outside of the project boundaries, in Nevada. The project will not physically demolish or materially alter any aspect of the resource, let alone the physical characteristics of the resource that convey its historical significance. Therefore, in accordance with CEQA, the SSA should be revised to find that the project will not result in a substantial adverse change in the historical significance of this resource.

As to the three ethnographic landscapes, the SSA does not say what, if any, physical characteristics of the landscapes convey the historical significance of those resources. This is particularly true for the ethnographic landscapes that have no physical

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boundaries. Therefore, it is unclear how the SSA can determine that the project will materially impair the historical significance of the resources.

As to the OST-MR Northern Corridor, the surveys conducted by the cultural resources experts have established that while there is a potential remnant of the OST-MR located onsite, that segment has already been demolished and graded over, and retains no further data potential. Therefore, the project will neither demolish nor materially alter the “physical” characteristics of a resource eligible for listing in the CRHR. As to tracks located offsite, the SSA does not explain how the project might impact the larger Old Spanish Trail corridor or how the conclusion is reached that the resource would be materially impaired by this project. Therefore, in accordance with CEQA, the SSA should be revised to find that the project will not result in a substantial adverse change in the historical significance of this resource.

### **Specific Comments**

8. While the rest of the Specific Comments are presented in the order presented in the SSA, one finding of fact highlights the most significant fact – there are no significant impacts on the HHSEGS project site. “Staff has determined that the archaeological deposits found within the boundaries of the HHSEGS facility site are not significant as individual resources and are not contributors to the Pahump Metapatch Mesquite Woodland-Coppice Dune Archaeological Landscape. No mitigation is required.” (SSA, p. 76.)

As discussed above, there are no historic resources onsite.

Excepting a poorly defined historic travel corridor, this entire discipline of Cultural Resources is focused on issues, potential resources, and alike – offsite. And not just offsite. Offsite in Nevada, Utah, Arizona, and a host of western states. This focus on issues outside California that are not affected by the project’s activities onsite, color the entire Cultural Resources analysis. As discussed above, they are also contrary to applicable laws, ordinances, regulations, and standards.

9. Page 1, footnote 1: The SSA states, “A ‘lifeway,’ as used herein, refers to any unique body of behavioral norms, customs, and traditions that structure the way a particular people carry out their daily lives.” The FSA needs to cite to some authority for this definition.
10. Page 1, Ethnography, 1st paragraph: The SSA states, “The ethnographic analysis for the HHSEGS project has identified three ethnographic landscapes ...” The FSA should define the term “ethnographic landscape” as it is used by the Staff.
11. Page 2, Historic Built-Environment: The SSA states, “Substantial information, including the National Register of Historic Places nomination of the Nevada segments of the Old Spanish Trail, has led staff to conclude that, within the PAA, this resource is not represented by a single route, but as a corridor of converging and intermingled tracks and trails.”

However later, the SSA acknowledges that an Act of Congress has a very different delineation of the Old Spanish Trail.

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“The Old Spanish Trail Recognition Act of 2002 (Act) defines the trail as ‘an approximately 2,700 mile long trail extending from Santa Fe, New Mexico, to Los Angeles, California, that served as a major trade route between 1829 and 1848... including the Armijo Route, Northern Route, North Branch, and Mojave Road’ and refers to maps in the ‘Old Spanish Trail National Historic Trail Feasibility Study’, dated July 2001, (16 USC 1241). The Old Spanish Trail-Mormon Road, as documented by the Act, is located on the south side and just outside of the project site, but within the PAA. While these transportation routes diverge in Nevada, with the Mormon Road turning north and the Old Spanish Trail continuing east, they are recorded as occupying the same area in California, just south of the project area.” (SSA, p. 66; emphasis added.)

The Old Spanish Trail, as designated by an Act of Congress, is not a “Corridor.” It is a specific trail based on “maps in the ‘Old Spanish Trail National Historic Trail Feasibility Study’, dated July 2001, (16 USC 1241).” (SSA, p. 66.)

Significantly, the mapped National Historic Trail lies more than 4 miles to the south of the HHSEGS, and therefore the project site is located wholly outside the Congressional designation: The OST is not “just outside of the project site.”

Staff has no authority to ignore this Congressional mandate. The Project site is outside the Old Spanish Trail.

12. Page 3, Laws, Ordinances, Regulations, and Standards, 1<sup>st</sup> paragraph: There is no federal land in California affected by the project. The text should be revised as follows: “For this project, there is ~~limited no~~ federal project land in California. ~~with the majority of~~ The federal involvement occurring in Nevada, outside Energy Commission jurisdiction; therefore, most of the LORS subject to Energy Commission review are California state laws and local regulations.”
13. Page 4, Cultural Resources Table 1, Federal LORS section: The following federal acts should be added to applicable LORS: Antiquities Act of 1906 (cited in footnote 2 on p. 2 of the SSA); National Historic Preservation Act; Archaeological Resources Protection Act; BLM State Office Cultural Resource Use Permit; Archaeological Resources Protection Act (ARPA) of 1979, as amended Section; and the Native American Graves Protection and Repatriation Act.
14. The one federal LORS that was cited, 45 CFR 690, is a policy that applies to research involving human subjects performed by federal agencies. Its is not applicable in this case.
15. Page 5, Project Site and Vicinity, General Comment: This section needs to begin with a breakdown of land status. The fact that HHSEGS uses 3,276 acres of *private* land is most relevant to an overall assessment of project impacts from the point of view of: (1) subsequent activities that led to the degradation of the resources and viewscape, like cutting of the grid roads, development of Charleston View; and (2) the Applicant’s determination to develop on land *that was already slated for development*. Those considerations are equally relevant to cultural resources impact assessment.

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16. Page 5, Project Site and Vicinity, 2<sup>nd</sup> paragraph: The PSA states, “The Colorado River, flowing generally southwesterly from the Rocky Mountains makes a significant bend, within 75 miles of the project area that changes the course of the river towards the south and the Gulf of Colorado.” Gulf of Colorado should be changed to Gulf of California.
17. Page 5, Project Site and Vicinity, 3<sup>rd</sup> paragraph, 1<sup>st</sup> sentence: The PSA states, “The available archaeological evidence indicates a great deal of variability in the Native American use of different portions of the project area through time.” This statement is incorrect. The PAA’s archaeological record is not variable. Also, the PAA should be clearly defined before this point, otherwise there is no focus to the impacts analysis.
18. Page 5, Project Site and Vicinity, 3<sup>rd</sup> paragraph, 2<sup>nd</sup> sentence: The PSA states, “A relatively sparse veneer of toolstone acquisition debris on the present surface of the proposed facility site indicates a transitory Native American use of that area, while the presence and moderate frequency of fire pit ruins, stone tool production and maintenance debris, and fragmentary stone tools demonstrate a much more extensive use of the discontinuous mesquite woodland along the fault zone to the immediate northeast of the facility site, through which the transmission line and natural gas pipeline for the proposed project would be built.”

The Applicant must point out that, here, the analysis has moved from the HHSEGS site (private land in California) to the Pahump Metapatch (federal +private land in Nevada). Further, the “fire pit ruins” that are mentioned are little more than clusters of fire-cracked rock.

19. Page 6, Project Area of Analysis (PAA), 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: The PSA states, “The PAA is a concept that staff uses to bound the geographic area in which the proposed project has the potential to affect cultural resources.” Based on the description provided, the PSA does not clearly geographically define the PAA, nor explain the Staff’s rationale for the PAA as identified in the PSA. The FSA should reflect the Applicant’s submitted information, or provide a reasonable rationale for deviating from the Applicant identified PAA to include features in Nevada.
20. Page 7, 1<sup>st</sup> paragraph: The PSA states, “Elements of the project constructed in Nevada, such as the transmission lines, are not assessed by staff for environmental effects within Nevada. However, impacts resulting from project activities in California, regardless of location, and impacts to resources in California, regardless of where the impacts originate, are evaluated and mitigated to the extent feasible.” This statement is generally correct. However, the PSA then makes an impermissible logical leap in concluding, “Therefore, the PAA for cultural resources may extend beyond California’s border.”

The “Therefore” conclusion does not logically follow. Public Resources Code Section 21080(b)(14) provides, in pertinent part, that a CEQA “exemption” for any “project or portion thereof located in another state which will be subject to environmental impact review pursuant to the National Environmental Policy Act of 1969 (42 U.S.C. Sec. 4321 et seq.) or similar state laws of that state.” This Section clearly supports the view that the Commission may examine projects or portions thereof “in California.” However, it



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provides no authority for the PSA's assertion that Staff review "may extend beyond California's border." The last sentence beginning with "therefore" should be deleted.

21. Page 7, 2<sup>nd</sup> paragraph, last two sentences: The PSA states, "This activity has been related to the periodic presence of surface springs and seeps and to mesquite woodlands that have become encased in an archipelago of sand dunes along the zone. The portions of the fault zone that are coincident with these woodlands ..."

There is no mesquite woodland in the Pahrump Metapatch. This text – and all references to mesquite "woodlands" -- should be revised to delete all references to "woodland" and replace those references with mesquite "thicket."

22. Page 7, 3<sup>rd</sup> paragraph: The PSA states, "An archaeological landscape is a constellation of passively and actively managed natural features and material culture remains that may be significant for its association with behavioral patterns, with events that have made an important contribution to the Native American prehistory and history of this portion of the eastern Mojave Desert." However, there is no citation to any authority for this definition of an "archeological landscape." The FSA should include citation of appropriate authority for this definition and a further explanation of the components of this definition.

23. Page 7, 3<sup>rd</sup> paragraph, 4<sup>th</sup> sentence: The PSA states, "Staff has, for the purpose of the present analysis, made the assumption that this landscape is significant for its associative values, and further found that the visual intrusion of the HHSEGS power towers on the landscape compromises the relevant aspects of the resource's integrity."

The PSA again admits that the significance of this resource is an assumption unsupported by substantial evidence.

There is no clear demonstration of this visual intrusion in the analysis—merely the allegation of such an intrusion. Nor is there substantial evidence that visual intrusion would compromise the unidentified "relevant aspects of the resource's integrity." There has been no effort to clearly define the area of potential effect from visual intrusion, nor the areas that would be masked (and there are many), and no evidence of use of this area beyond the immediate vicinity of the few springs, which are largely masked from visual intrusion.

24. Page 7, 3<sup>rd</sup> paragraph, 5<sup>th</sup> sentence: The PSA states, "Beyond the archaeological landscape as a whole, constituent deposits that compose the landscape, deposits for which information is presently unavailable, may also be significant as stand-alone cultural resources. These may include archaeological deposits associated with some of the named springs and seeps in the vicinity of the facility site, such as Stump, Browns, and Mound Springs, and with the more productive patches of the mesquite woodland."

Again, the PSA's analysis is relying upon assumptions, contrary to CEQA's requirements for substantial evidence in the record as a whole. There is no evidence in the record to support these assumptions, and such assumptions cannot form the basis for findings of significance or mitigation suggested to be imposed.



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25. Moreover, as matter of fact, as has been pointed out repeatedly in the Data Responses, Mound Spring is both in Nevada and more than 5.5 miles from the project site.
26. Page 7, 4th paragraph, 1st sentence: The PSA states, “A second area in Nevada that staff has identified as a discontinuous component of the PAA encompasses Mount Charleston and other prominent peaks of the Spring Mountains.”

This feature is again in Nevada and outside the reasonable scope of the proper PAA for the project.

27. Page 8, 1st full paragraph, last sentence: The PSA states, “Among the lower reaches of the range, there may also be places where the visual presence of the HHSEGS power tower would degrade the ability of key places and trails to convey their respective associative values.”

Another example of an assumption without any analysis. The Visual Resource section provides maps of the viewshed of the project.

28. Page 9, Archival and Library Research, California: The PSA states, “Three studies were conducted by the applicant’s consultant within the delineated literature search area in California. Only two of these studies intersect the HHSEGS project location. One previously recorded resource was identified within the literature search area. This resource is a prehistoric lithic scatter that has not yet been evaluated for inclusion in the NRHP. This scatter, CA-INY-2492, is located within the HHSEGS project boundary.”

These statements are incorrect. The resource has been evaluated and found to be ineligible. The text should be revised to reflect the finding of ineligibility.

29. Page 12, 1<sup>st</sup> partial paragraph, last sentence: The PSA states, “Although a visit to the project site did not occur, photos and photo simulations of key observation points (KOPs) in the vicinity of the project were examined at the meeting.” This statement is incorrect. The tour that occurred after the meeting, attended by Native American representatives, did indeed visit the project area as well as the Stump Spring ACEC. Prior to this, cultural resources staff were provided a tour of the project area by the Applicant’s cultural resources task lead. The text should be revised to reflect these facts.

30. Page 12, 1<sup>st</sup> full paragraph: The PSA states, “On December 2, 2011, Energy Commission staff met for a second time with representatives of the Pahrump Band, Las Vegas Paiute, and Timbisha Shoshone in Pahrump, Nevada. Also in attendance was Kathleen Sprowl of the Nevada BLM. The discussion was not limited to cultural and visual resources and a wide range of questions were asked about the project in general, including potential impacts to water. The group also visited the project site in the afternoon.”

Similarly, Page 12, last paragraph: The PSA states, “Specific concerns were expressed regarding the proposed project’s water use; impacts to the water-related biomes, such as the local springs that support plants and animals in the nearby coppice dunes mesquite grove complexes; ...”

It is fundamentally unfair to hold these meetings, not provide a public summary of the meeting results to the Applicant, and then base the PSA’s analyses on these non-disclosed meetings. Not having a representative of the Applicant in attendance

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means that there is no one present to accurately answer technological questions on the Applicant's behalf. If the FSA will base its analyses on these conversations, the Applicant has a due process right to review such information, and ask questions about this information. The FSA should provide a summary of meeting results.

31. Page 14, Field Inventory Investigations, 2<sup>nd</sup> paragraph: the PSA states, "The applicant provided survey information as part of the AFC and additional information in response to staff's Data Requests. This information was augmented by staff's independent research and ethnographic resource study." The FSA should identify with specificity the "staff's independent research and ethnographic resource study" that "augmented" the Applicant's material.

32. Page 18, Cultural Resources Table 3: The "Source" of a finding of significance for the three ethnographic landscapes is, "HHSEGS Supplemental Preliminary Staff Assessment, Confidential Cultural Resources Ethnographic Report, Appendix A."

The reliance on an inaccessible Confidential Appendix is unprecedented, and implicates due process and fundamental fairness, as discussed above in the General Comments.

33. Page 19, Cultural Resources Table 3, Rows S-24 to the end of the table. The "TBD" designations are incorrect and should be replaced with "Ineligible." Applicant has provided under confidential cover a detailed report regarding the determination of eligibility. Moreover, Applicants provided the findings of the referenced historic roads and trails report at the end of March 2012, in plenty of time for review (Data Response 125, Data Response Set 1D-5).
34. Page 22, Research Design, 1<sup>st</sup> paragraph: The PSA states, "Based upon these general meetings, an abbreviated research design was developed for the HHSEGS project that generated various research questions or directives." The PSA should explain in detail exactly how the "Research design" "was developed." The use of the passive voice ("was designed") does not inform the public or the Applicant of the process used to develop the design. The FSA should explain the research design.
35. Page 26, Results, 1<sup>st</sup> paragraph: The PSA states, "The ethnographic report analysis has divided some of the Pahrump life-ways, and how those life-ways are intertwined with a landscape, into seven attributes: water, plants, animals, horticulture, trails, landforms, and ceremonies. It should be noted that there is crossover between categories." The PSA fails to explain why these seven elements were selected. What criteria were used to create these seven? The explanation in the FSA should include an explanation of why these seven were selected, and why others were omitted.
36. Pages 27 through 29. The conclusions in Tables 4, 5 and 6 were made on the basis of Tables not provided in the PSA: Cultural Resources Table Appendix – Tables A-D. These tables should be provided, along with an explanation of why they were developed, according to applicable LORS.
37. Page 31, Southern Paiute Salt Song and Landscape, 1<sup>st</sup> paragraph: The PSA states, "A precise delineation and boundary justification for the Southern Paiute Salt Song Landscape is not necessary for this project because the landscape, extending over a

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large swath of the Southwest and California, far exceeds the PAA for the project. Research project time constraints also prohibit such a robust delineation. “

To begin, the geographic scale of this landscape is staggering, covering four Western states. The PSA admits that there is no “delineation or boundary” for this landscape. It also suggest that time constraints prohibit a robust delineation.

In short, this landscape is not “physical.” It is metaphysical and, based on the lack of delineation, the landscape is based on assumptions, not substantial evidence.

38. Page 31, Pahrump Paiute Home Landscape, 1<sup>st</sup> paragraph: The PSA states, that again, the boundaries of an ethnographic landscape are not “delineated.” It says, “A precise delineation and boundary justification for the Pahrump Paiute Home Landscape is not necessary for this project because the landscape, extending from the western side of the Spring Range and including Pahrump Valley, Last Chance Range, No Pah Range, and the Kingston Mountains, and areas further to the north, west, and south, far exceeds the area of the project.” Again, this landscape is predominantly outside the State of California, and formulated based on assumptions, not substantial evidence.
39. Page 31, Mo hav Landscape, 1<sup>st</sup> paragraph: The PSA posits “four specific justifications for the boundary delineations” of the Mo hav landscape. However, the PSA does not cite to any authority for those four “justifications.” There is no explanation of how those boundaries were derived. And there is no explanation as to why the Mo hav landscape has precise boundaries while the other two landscapes have no boundaries. The FSA must describe the rationale for this landscape in detail, with citations to authorities for its justifications.
40. Page 31: It should be noted that the Pahrump Paiute and Mo hav landscape are subsets of the larger, four-state Salt Song landscape. This suggests that a single “resource” may be being counted three times in Staff’s analyses.
41. Page 35, 3<sup>rd</sup> full paragraph. The PSA states that the “degree of significance of an impact depends on” the following: (1) “The cultural resource impacted;” (2) “The nature of the resource’s historical significance;” (3) “How the resource’s historical significance is manifested physically and perceptually;” (4) “Appraisals of those aspects of the resource’s integrity that figure importantly in the manifestation of the resource’s historical significance;” and (5) “How much the impact will change those integrity appraisals.”  
  
Citations to the legal authorities for these criteria should be included in the FSA. More importantly, despite citation of these criteria, the PSA does not fulfill those requirements, particularly as they pertain to items (3) and (4). Nor does it cite Applicant’s submittals that would provide some of that information.
42. Page 35, Assessment of Impacts and Recommended Mitigation, 1<sup>st</sup> paragraph: the PSA states, “Staff also must assess whether the proposed project has the potential to impact as-yet-unknown buried archaeological resources and recommend mitigation for impacts to previously unknown but historically significant resources discovered during construction, if impacts to such resources cannot be avoided.”

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This is yet another example of Staff assuming “potential to impact as-yet-unknown buried archaeological resources.” And based on that assumption, Staff will “recommend mitigation for impacts to previously unknown but historically significant resources discovered during construction.” This assumption of impacts and requirement of mitigation is contrary to CEQA. Even under Criterion 4, Staff cannot assume “unknown” features exist and are significant: “has yielded, or may be likely to yield, information important to history or prehistory.” Impacts cannot be assumed and mitigation imposed on the basis of that assumption, particularly impacts to offsite resources.

43. Page 36, 2<sup>nd</sup> full paragraph: The PSA says, “Ground disturbance accompanying construction at a proposed plant site, along proposed linear facilities, and at a proposed laydown area has the potential to directly impact unknown archaeological resources. The potential direct, physical impacts of the proposed construction on unknown archaeological resources are commensurate with the extent of ground disturbance entailed in the particular mode of construction.” Again, impacts are assumed to “unknown” resources. Moreover, Applicant has submitted results of geoarchaeological investigations and other related technical assessments as part of the discovery process that demonstrates a lack of archaeological potential within the project area. At a minimum, citation of this detailed work and explanation as to why it is disregarded is needed.
44. Pages 41 and 42, Archaeological Resources, last sentence The PSA states, “staff recommends that the whole inventory of 12 archaeological sites be determined to be ineligible for listing in the CRHR.” We concur with Staff’s determination of ineligibility. However, it is inappropriate to agree with determinations of the eligibility of the archaeological sites and to defer concurrence on the historic roads and trails when that information has been provided in sufficient time for consideration (Data Response 125, Data Response Set 1D-5, March 30, 2012). The FSA should reflect the ineligibility determinations related to historic roads and trails.
45. Page 42, 1<sup>st</sup> full paragraph: The PSA contains an incomplete paragraph as follows: “However, a determination that the 12 known archaeological sites are not historical resources for the purposes of CEQA, this does not preclude the possibility that unknown”. It is unclear whether this should have been deleted or whether the other text was unintentionally omitted.
46. Page 43, footnote 10: The footnote says, “A ‘metapatch’ is defined as a ‘collection of woodland patches separated by less than 2 km, and not separated by any major [geographic] barrier’ (BLM 2006, p.41).” However the Nevada mesquite vegetation at issue constitutes thickets, not “woodland”. Thus, this description of the “Pahrump Metapatch” is incorrect.
47. Pages 44, 1<sup>st</sup> paragraph 6<sup>th</sup> sentence The PSA states, “The shapes of the individual trees may partially be the result of plant-tending techniques meant to maximize mesquite pod yield or facilitate easier harvesting.” There are no trees in the area cited. The mesquite in this area is generally not arborescent and instead is of shrub stature and

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forms “thickets.” Moreover, plasticity of body architecture is intrinsic to mesquite as well as to some other tree species, and not the result of conjectured “tending.”

48. Pages 44, 1<sup>st</sup> paragraph, last sentence: The PSA states, “During the course of the consideration of the application for the proposed project, the applicant has repeatedly objected to engaging in this fieldwork.” This is an incorrect characterization.

The Applicant correctly, legally, and timely declined a minority of staff requests as irrelevant to any decision the Commission must make on this application. Further, Staff elected not to file a motion to compel. The PSA’s characterization of the history of this interaction between Staff and Applicant is a mischaracterization. It must be excised from the FSA.

The Applicant objected, in part, to Staff’s request for studies off-site, in Nevada on federally managed land because the Applicant’s technical specialists concluded, and remain of the opinion, that the requested information is not appropriate when judged against the standards of professionals in this field. Moreover, the full extent of the research staff originally requested in DR-105 would take well over a year, and cost at least a \$500,000. To our knowledge, Staff remains somehow convinced that such research can be done quickly and inexpensively. The information that Applicant, through its cultural resources specialists, agreed to provide Staff with a summary report of data already available. This information has been provided as DR-105. Staff indicated that DR-105 as submitted would suffice for this PSA, but it is overlooked in this document.

49. Page 45, CRHR Evaluation of the Landscape, 1<sup>st</sup> paragraph: The PSA states, “There is presently not enough information on the Pahrump Metapatch Landscape to make a formal determination on the resource’s eligibility for listing in the CRHR. However, there is enough information to provide a sound rationale for assuming the eligibility of the landscape as an archaeological district under CRHR Criteria 1 and 4 and for proceeding directly to the analysis of the potential project-related impacts to this historical resource under CEQA.”

The PSA is relying on an assumption, rather than substantial evidence in the record. Moreover, since the “Pahrump Metapatch Landscape” is entirely in Nevada, without reference to authority or jurisdiction of the federal government over that area, the PSA presumes to apply CRHR criteria to a resource solely located in another state, on federally managed land.

50. Page 45, CRHR Evaluation of the Landscape, 2<sup>nd</sup> paragraph: The PSA states, “The Pahrump Metapatch Landscape has the legitimate potential to be eligible for listing in the CRHR under Criterion 1, ...”

This is another unsupported assumption. The “potential” to be something, does not make is so. Furthermore, staff fails to explain how a resource in another state could possibly be eligible for the CRHR – because it cannot be.

51. Page 45, CRHR Evaluation of the Landscape, 3<sup>rd</sup> paragraph: The PSA states, “The provisional boundary for the landscape is the boundary delineated for the Pahrump

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Metapatch in the *Conservation Management Strategy for Mesquite and Acacia Woodlands in Clark County, Nevada* (BLM 2006).”

The “Pahrump Metapatch” is asserted by Staff to be eligible for listing in the CRHR, and Staff proposes mitigation directed at it, without clearly acknowledging and discussing the following: (1) the land in question lies in another State, (2) the land in question, where not under private ownership, is federally managed, (3) the agency responsible for management of that land is the U.S. Department of the Interior, Bureau of Land Management, (4) the Nevada BLM is the lead federal agency for this undertaking in Nevada.

52. Pages 45-47, Impacts and Recommended Mitigation: This subsection is perhaps the first in this Cultural Resources Section to clearly say that Staff is focused on indirect effects entirely and that those are entirely visual effects.

On the whole this section fails to physically describe the area of potential visual intrusion in such a manner that another party could accurately reproduce that area, or objectively confirm the PSA’s assertion. Substantial portions of these areas are protected largely or entirely from visual intrusion. Staff fails to describe those either here, or in the Visual Resource chapter. Further, the effects of pre-existing impacts to the landscape, such as the subdivision of the project area or the development of Charleston View, go unmentioned.

53. Pages 45 and 46, Impacts and Recommended Mitigation, 1<sup>st</sup> paragraph, last sentence: The PSA states, “The mass of the looming towers in particular, in combination with the operational glare from the solar receiver steam generators atop each tower, would compromise the setting, feeling, and association aspects of the resource’s integrity, aspects critical to the resource’s ability to convey its associative values under Criterion 1.” The assertion of what “would compromise” the subjective setting, feeling, and association is not quantified. This is simply a bald assertion.

Factually, the assertion is unsupported by analysis. For example, the PSA fails to weigh the effects to the “resources integrity” by residential and commercial development, the Front Site shooting range, the many roads graded across the area and innumerable OHV trails, abandoned housing, etc. Additionally these are Nevada resources that should be considered as part of the NEPA analysis of the linear corridors, if at all.

54. Pages 46, 1<sup>st</sup> full paragraph: The PSA states, “Staff is unaware of any suite of mitigation measures that would reduce the loss of the entire landscape or a substantial portion of one to a less than significant level.” To begin, the PSA assumes, but does not document the purported impact, nor does it document what factors lead to the conclusion that there is a “significant” impact, which would necessitate imposition of mitigation. Staff has failed to account for, or even describe, the degradation of that landscape that has occurred to date. Staff portrays the current landscape as pristine and un-impacted, which it is not. These statements are offered as fact when they are assumptions and unsupported.
55. Pages 46, 1<sup>st</sup> full paragraph: The PSA states, “The applicant has provided no information or analysis on this landscape and has recommended no mitigation to reduce the



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project's impacts on this significant resource." The first part of this sentence is quite untrue. See Data Responses 101, 105 and other related requests that the Applicant answered notwithstanding its proper and timely objection. Given that the Applicant has been excluded from the investigations that Staff recounts, including the information in Confidential Appendix A, it is not surprising that the Applicant has been in no position to recommend mitigation. The Applicant has not been given the information upon which Staff based its conclusions.

56. Pages 46, 2<sup>nd</sup> full paragraph The PSA states, "Staff must, therefore, conclude that the project's actual impact to the Pahrump Metapatch Landscape is significant and unmitigable." How can this conclusion be made when as Staff states "no systematic survey of the landscape has been done to date?" (See p. 42, Landscape Elements and Characteristics, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence.)
57. Page 46, 2<sup>nd</sup> full paragraph: The PSA states, "This type of mitigation would parallel the treatments routinely given to significant built-environment resources, such as buildings and bridges (Historic American Building Survey and Historic American Engineering Record documentation, respectively) prior to demolition, and increasingly given to significant landscapes (Historic American Landscape Survey documentation), ..."
- The recordation of that eligible resources as described is considered adequate mitigation for their subsequent destruction. That might be the case as well for recordation of the Pahrump Metapatch. It may well be adequate mitigation, particularly since no direct impacts would occur. One consequence of keeping its investigations secret is that staff failed to solicit other qualified viewpoints.
58. Page 46, 2<sup>nd</sup> full paragraph, last sentence: The PSA states, "It does however serve to partially compensate the public for their loss." Many of the dunes are on private property thus are not accessible to the public for their use, so there is no public "loss." We are unaware of any substantial concerns of the public over potential loss of the area, probably because this area will not be lost.
59. Page 46, last paragraph: The PSA states, "Staff finds compensatory mitigation appropriate here, because staff knows of no direct way to effectively counteract the visual degradation that the proposed project would inflict on the landscape." As noted previously, the PSA does not use the fundamentals of visual analysis to demonstrate this alleged degradation. It merely assumes an impact. Secondly, because the bulk basis for this claim was developed in secrecy of Confidential Appendix A and meetings that expressly excluded the Applicant, the threshold question of impact is not properly addressed and no mitigation is required absent the finding of a significant impact.
60. Page 47, 1st partial paragraph: The PSA states, "CUL-11 proposes to gather this information thorough the design and execution of a thoughtful program of primary field research." This is inappropriate. As Staff has indicated, this sort of documentation is usually applied to resources that would be directly affected. There are no direct effects of the project on this resource, and thus, the proposed mitigation is inappropriate.
61. Page 47 and pages following, Ethnographic Analysis, General Comment: There are some fundamental assumptions in this subsection that are unsupported by substantial



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evidence or unsupported by applicable law. First, that the spiritual or cultural landscape of one, or another, people is somehow more special, and therefore subject to unique impacts from this development for which the Applicant is liable. Second, that there are cognizable and meaningful factual differences between the various landscapes described that merit separate impact evaluations. Third, that effects to resources in other States are the proper purview of the state of California, and (by implication) not the lead federal agency designated for this project.

62. Page 50, Pahrump Paiute Tribe, 1<sup>st</sup> paragraph: The PSA states, “The Pahrump Paiute Tribe, located in Pahrump, Nevada, is not a federally recognized tribe, but is recognized as an established tribal entity by the State of California and is informally recognized by federal land management agencies that operate within the Tribe’s traditional territory. Over the years, Pahrump Paiute individuals have been intermittently recognized by the federal government. The Tribe currently consists of approximately 100 tribal members.”

The Pahrump Paiute are not included on the “Indian Tribal Entities Within the Contiguous 48 States Recognized and Eligible To Receive Services From the United States Bureau of Indian Affairs.” (Federal Register, Vol. 75, No. 190 , Friday, October 1, 2010, Notices, pp. 60810-60814.) The FSA should explain what it means by the California reference in the following phrase: “...is not a federally recognized tribe, but is recognized as an established tribal entity by the State of California....” The FSA should also explain the nature of the “informality” in these phrases: “...is informally recognized by federal land management agencies....”; and “...individuals have been intermittently recognized by the federal government....” The FSA should also explain the basis for the statement that the tribe has “over 100 tribal members.”

Page 54, Southern Paiute Salt Song Landscape, 2<sup>nd</sup> paragraph: The PSA states, “No amount of landscape alteration can prevent them from continuing this tradition.” The only logical interpretation of this statement is that the impact alleged is not a significant inhibition to the Salt Song process. If the process can continue regardless of the “amount of landscape alteration,” then the HHSEGS project will not adversely affect the Salt Song. The impact is thus less than significant.

63. Page 58, Mitigation, 1<sup>st</sup> paragraph: The PSA states, “Staff is unaware of any suite of mitigation measures that would reduce the loss of a substantial portion of the Landscape’s integrity and spiritual context, ...” Again, without access to Confidential Appendix A, the Applicant cannot review these assertions, determine whether there are impacts, and whether those impacts may be significant, warranting mitigation.
64. Page 61, 1st paragraph, 1st sentence: The PSA states, “There may be alternatives that might allow the project to proceed in some fashion, while still offering some protection to the resource and its associative values.” This statement is unclear, at best. In particular, it is unclear whether this statement indicates that Staff has in mind some mitigation measures that would reduce the impacts alleged to a level of less than significant.
65. Page 61, 2<sup>nd</sup> paragraph: This paragraph states, “Condition of Certification **VIS-6** would require an Interpretive Center be placed somewhere in the Pahrump Valley (along

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Tecopa Road) and near the Old Spanish Trail to compensate for the visual intrusion that the project will impose on the scenic values associated with the Old Spanish Trail. . . . Implementation of this portion of the Interpretive Center design would also require siting of the Interpretive Center adjacent to a functional spring.”

The Applicant does not agree with COC VIS-6. On what valid basis can staff say that there is an unmitigable visual impact from the project on a cultural landscape of which springs are the most important component and then require an Interpretive Center adjacent to a functional spring? Furthermore, there is no basis for requiring such a center to be located adjacent to a spring on federally managed lands in another state, or anywhere the Applicant does not have land ownership. Condition VIS-6 should be deleted.

66. Page 68, 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence: The PSA states, “... OSTA has hypothesized that branches of the route are located on the HHSEGS project site. The Applicant’s consultant has also discovered traces of the OST on the project site.” This is incorrect. Applicant’s historic roads and trails report confirms that OSTA-proposed segments do not occur onsite. These claims are unequivocally refuted by the report (Data Response 125, Data Response Set 1D-5).
67. Page 69, 3<sup>rd</sup> paragraph, 1<sup>st</sup> sent: The PSA states, “The applicant’s consultant states that the segment in the PAA no longer retains sufficient integrity to be eligible as a contributing element to the overall OST-MR.” This is correct. The PSA then suggests possible eligibility, but provides no explanation whatsoever for that possible eligibility determination. The PSA must explain, not simply assume, a finding of eligibility, especially when it is contrary to the finding in Applicant’s historic roads and trail report (Data Response 125, Data Response Set 1D-5).
68. Page 70, 1<sup>st</sup> paragraph, last sentence: The PSA states, “Analysis is also ongoing to determine if it is an early trace, prior to wagon activity, of the OST-MR and will be included in the FSA.” The PSA does not reflect the related information presented in Data Response 125, Data Response Set 1D-5. (Data Response 125, Data Response Set 1D-5). If there is a well-supported recommendation of not eligible on the table in Data Response 125. Since a recommendation has been made, standards of practice dictate that Staff needs first to demonstrate why that recommendation is not valid or should be set aside.
69. Page 70, Impacts and Recommended Mitigation, 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence: The PSA states, “Known elements within the OST-MR Northern Corridor to date include the Northern Route<sup>31</sup> of the Old Spanish Trail National Historic Trail as designated by the Old Spanish Trail Recognition Act of 2002, Track 4 (CH2MHill, 2012), Steiners Apx Trace (OSTA 2012), S-24 (CH2MHill, 2012), S-26 (CH2MHill, 2012), Track 5 (CH2MHill, 2012), Central trace (OSTA 2012), and Northern trace (OSTA 2012).”

This is inaccurate. It applies different names to the same segment of the OST-MR, and there is credible analysis that the “Central trace” does not exist (Data Response 125,

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<sup>31</sup> Note: This overlaps with Track 4 (CH2MHill, 2012) and Steiners Apx Trace (OSTA 2012).

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Data Response Set 1D-5). This information was provided to Staff in full time for consideration (March 30). The FSA must demonstrate, not simply assume, a contrary result.

70. Page 71, 1<sup>st</sup> full paragraph 2<sup>nd</sup> sentence: The PSA states, "Also, as previously stated, even segments with minimal integrity could be significant for their information value, as not all tracks/traces in the Pahrump Valley have been ground-truthed." Technically, "segments with minimal integrity" have lost their information value. The last phrase of this sentence stands out as a *non sequitur*. Staff is referred to Data Response 125 (Data Response Set 1D-5) for a clear and succinct summary of these resources, and for an evaluation of those in the project area.
71. Page 71, 1<sup>st</sup> full paragraph 4<sup>th</sup> sentence: The PSA states, "Conversely, the proposed project would be visible for miles creating the most significant visual intrusion into the valley to date." It is also true that Charleston View that can be seen for 15 miles away, Pahrump can be seen from 20 miles, and all other development in the valley contains considerable night lighting that can also be seen for miles. Further, the BLM rates the lands surrounding the site as the least visually sensitive BLM lands, VRM IV, the designation that allows for the most intensive use and development on BLM lands.
72. Page 71, 2<sup>nd</sup> full paragraph, 1<sup>st</sup> sentence: The PSA states, "Tracks/traces on the project site would be directly, physically impacted by the project development." Again, this statement ignores the information in the Applicant's historic roads and trails report (Data Response 125, Data Response Set 1D-5). That report finds, among other things, a lack of integrity in the resources the PSA assumes are eligible. As a general matter, the PSA disregards the eligibility recommendations made in the field the historic roads and trails report (Data Response 125, Data Response Set 1D-5), and apparently not availed itself of the detailed information contained therein.
73. Page 71, 2<sup>nd</sup> full paragraph, last sentence: The PSA states, "The installation of this large number of heliostats and 750+ foot towers would substantially alter the vast, open landscape that is a character-defining feature of this section of the this historical resource." This statement is hyperbole, given the existing state of development in the vicinity of the HHSEGS project. Charleston View is developed, and there are transmission lines, cell towers, highways, the Town of Pahrump, ATV trails, Front Site shooting range, Hidden Hills airport and Ranch, St Theresa Mission, etc. The SSA fails to define in this context what constitutes that "vast, open landscape."
74. Page 72, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: The PSA states, "As noted above, staff is unaware of any action, short of project relocation or denial that would directly avoid or substantially minimize the significant effects that the proposed project would have on the OST-MR Northern Corridor identified in this document."
75. Staff has failed to properly consider the eligibility of trail and road segments that comprise this resource, as well as the specific eligibility assessments that have been provided.
76. Page 72, 1<sup>st</sup> paragraph: The PSA states, "As an alternative, staff finds compensatory mitigation, identified in Condition of Certification **CUL-9**, to be implemented in

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conjunction with **CUL-10/VIS-6**, to be a means of compensating, in part, for the permanent loss of the resource's visual and informational value. \* \* \* \* However, even with full implementation of conditions of certification **CUL-9** and **CUL-10/VIS-6**, the project's impact to the OST-MR Northern Corridor would remain significant and unmitigable." Staff's conclusions are not supported by the record that the Applicant has provided, nor by its own analysis. They disregard eligibility recommendations provided for *all* segments of the OST-MR within the project area. They cannot stand on the Confidential Appendix A that has not been provided to the parties. Of particular concern, Staff seems to be suggesting that "compensatory mitigation," i.e., land acquisition, may be recommended by Staff. This too would be unprecedented. To the best of our knowledge, the Commission has never required "compensatory mitigation" for a purported Cultural Resources impact and Applicant doubts such a requirement would comply with applicable constitutional protections.

77. Page 73, Cultural Resources Table 9, last row, "The Old Spanish Trail-Mormon Road Northern...", last column that states, "Portions are designated as a National Historic Trail. CRHR eligible." This is incorrect. No such "portions" exist in California.

### **Findings of Fact**

78. Pages 75-76. Given the inaccuracies and the disregard of information provided by Applicant, and, significantly, given that the Staff's Conclusions, Recommendations, and Proposed Findings of Fact are based on Confidential Appendix A, which is not provided to the Applicant, the Applicant can only assert a general objection to these Findings in their entirety.

### **Conditions of Certification**

79. Pages 77 – 79. Please revise this condition as follows. Since the CPM needs to approve the CRS, the 1<sup>st</sup> sentence of the 4<sup>th</sup> paragraph is redundant and should be deleted.

**CUL-1** Prior to the start of construction-related ground disturbance or grading, boring, and trenching, as defined in the General Conditions for this project; surface grading or subsurface soil work during pre-construction activities or site mobilization; or mowing activities and heavy equipment use in loose or sandy soils, at the site and for access roads and linear facilities, the project owner shall obtain the services of a Cultural Resources Specialist (CRS) and one or more Alternate CRS(s). The project owner shall submit the resumes and qualifications for the CRS, CRS alternates, and all technical specialists to the CPM for review and approval.

**Verification:** The CRS shall manage all cultural resources monitoring, mitigation, curation, and reporting activities, and any pre-construction cultural resources activities (e.g., geoarchaeology or data recovery), unless management of these is otherwise provided for in accordance with the cultural resources conditions of certification (Conditions). The CRS may elect to obtain the services of Cultural Resources Monitors (CRMs), Native American Monitors (NAMs), and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS makes recommendations regarding the eligibility for listing in the California

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Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be affected in an unanticipated manner.

No construction-related ground disturbance or grading, boring, and trenching, as defined in the General Conditions for this project; surface grading or subsurface soil work during pre-construction activities or site mobilization; or mowing activities and heavy equipment use in loose or sandy soils, at the site, access roads, and linear facilities, shall occur prior to Compliance Project Manager (CPM) approval of the CRS and alternates, unless such activities are specifically approved by the CPM.

Approval of a CRS may be denied or revoked for reasons including but not limited to non-compliance on this or other Energy Commission projects and for concurrent service as CRS on an unmanageable number of Energy Commission projects, as determined by the CPM. After all ground disturbance is completed and the CRS has fulfilled all responsibilities specified in these cultural resources conditions, the project owner may discharge the CRS, if the CPM approves. With the discharge of the CRS, these cultural resources conditions no longer apply to the activities of this power plant.

If, during operation of the proposed power plant, circumstances develop that would require ground disturbance in soils or sediments previously undisturbed during project construction, no surface grading or subsurface soil work shall occur prior to submission of a Petition to Modify and CPM review and approval of project-specific protocol for addressing unanticipated discoveries, consistent with the approved Cultural Resources Mitigation and Monitoring Plan (CRMMP).

**CULTURAL RESOURCES SPECIALIST**

The resumes for the CRS and alternate(s) shall include information demonstrating to the satisfaction of the CPM that their training and backgrounds conform to the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61 (36 C.F.R., part 61). In addition, the CRS and alternate(s) shall have the following qualifications:

1. Listing in the Register of Professional Archaeologists;
2. Qualifications appropriate to the needs of the project, including a background in anthropology, archaeology, history, architectural history, or a related field;
3. At least three years of archaeological or historical, as appropriate (per nature of predominant cultural resources on the project site), resources mitigation and field experience in California; and
4. At least one year of experience in a decision-making capacity on cultural resources projects in California and the appropriate training and experience to knowledgeably make recommendations regarding the significance of cultural resources. The resumes of the CRS and alternate CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS/alternate CRS on referenced projects and demonstrate to the satisfaction of the CPM that the CRS/alternate CRS

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has the appropriate training and experience to implement effectively the Conditions.

**CULTURAL RESOURCES MONITORS**

CRMs shall have the following qualifications:

1. B.S. or B.A. degree in anthropology, archaeology, historical archaeology, or a related field, and one year experience monitoring in California; or
2. A.S. or A.A. degree in anthropology, archaeology, historical archaeology, or a related field, and four years experience monitoring in California; or
3. Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology, or a related field, and two years of monitoring experience in California.

**CULTURAL RESOURCES TECHNICAL SPECIALISTS**

The resume(s) of any additional technical specialist(s), e.g., historical archaeologist, historian, architectural historian, and/or physical anthropologist, shall be submitted to the CPM for approval.

The geoarchaeologist is required to defer to the CRS in the event of the discovery of human remains or other cultural material during the conduct of a pre-construction geoarchaeological evaluation plan. A similar provision in the approved pre-construction geoarchaeological evaluation plan would be needed, giving the geoarchaeologist authority over the planned work except for the handling of a discovery of human remains and other cultural material.

**Verification:**

1. At least 45 days prior to the start of ground disturbance, the project owner shall submit the resumes for the CRS and alternate(s) to the CPM for review and approval.
2. At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resume of the proposed new CRS, if different from the alternate CRS, to the CPM for review and approval. At the same time, the project owner shall also provide to the proposed new CRS the AFC and all cultural resources documents, field notes, photographs, and other cultural resources materials generated by the project. If no alternate CRS is available to assume the duties of the CRS, the project owner shall designate a CRM to serve in place of a CRS for a maximum of 3 days. If cultural resources are discovered, ground disturbance shall remain halted in the vicinity of the find until there is a CRS or alternate CRS to make a recommendation regarding significance.
3. At least 20 days prior to ground disturbance, the CRS shall provide a letter naming CRMs and attesting that the identified CRMs meet the minimum qualifications for cultural resources monitoring required by this condition.



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4. At least 5 days prior to additional CRMs beginning on-site duties during the project, the CRS shall provide letters to the CPM identifying the new CRMs and attesting to their qualifications.
5. At least 10 days prior to any technical specialists, other than CRMs, beginning tasks, the resume(s) of the specialists shall be provided to the CPM for review and approval. At least 10 days prior to the start of ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the cultural resources conditions.

80. Pages 79 – 80. Please make the following changes to CUL-2.

**CUL-2** Prior to the start of construction-related ground disturbance or grading, boring, and trenching, as defined in the General Conditions for this project; surface grading or subsurface soil work during pre-construction activities or site mobilization; or mowing activities and heavy equipment use in loose or sandy soils, at the project site, access roads, and linear facilities, if the CRS has not previously worked on the project, the project owner shall provide the CRS with copies of the AFC, data responses, confidential cultural resources reports, all supplements, the Energy Commission cultural resources Final Staff Assessment (FSA), and the cultural resources conditions of certification from the Final Decision, for the project. The project owner shall also provide the CRS and the CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas. Maps shall include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:24,000 or 1" = 200') for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM.

If construction of the project would proceed in phases, maps and drawings not previously provided shall be provided to the CRS and CPM prior to the start of each phase. Written notice identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

Weekly, until ground disturbance is completed, the project construction manager shall provide to the CRS and CPM a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur during that week.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

**Verification:**



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1. At least 40 days prior to the start of ground disturbance, the project owner shall provide the AFC, data responses, confidential cultural resources documents, all supplements, cultural resources conditions of certification, and the FSA to the CRS, if needed, and the subject maps and drawings to the CRS and CPM. The CPM will review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.
2. At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the project owner shall provide revised maps and drawings for the changes to the CRS and CPM.
3. At least 15 days prior to the start of each phase of a phased project, the project owner shall submit the appropriate maps and drawings, if not previously provided, to the CRS and CPM.
4. Monthly, during ground disturbance, the project owner shall ~~email~~ provide a monthly progress report to the CPM as part of the project's Monthly Compliance Report. ~~interested Native Americans and other interested parties.~~
5. Within 5 days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.

81. Pages 80 -- 83. Please make the following changes to CUL-3.

**CUL-3** Prior to the start of ground disturbance, the project owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by, or under the direction of, the CRS, to the CPM for review and approval. The CRMMP shall follow the content and organization of the draft model CRMMP, provided by the CPM, and the authors' name(s) shall appear on the title page of the CRMMP. The CRMMP shall identify measures to minimize potential impacts to sensitive cultural resources. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner. Copies of the CRMMP shall reside with the CRS, alternate CRS, each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless such activities are specifically approved by the CPM.

**Verification:** The CRMMP shall include, but not be limited to, the following elements and measures:

1. The following statement included in the Introduction: "Any discussion, summary, or paraphrasing of the conditions of certification in this CRMMP is intended as general guidance and as an aid to the user in understanding the conditions and their implementation. The conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CRMMP. The Cultural Resources conditions of certification from the Commission Decision are contained in Appendix A."
1. A proposed general research design that includes a discussion of archaeological research questions and testable hypotheses specifically applicable to the project area, and a discussion of artifact collection, retention/disposal, and curation policies as

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related to the research questions formulated in the research design. The research design will specify that the preferred treatment strategy for any buried archaeological deposits is avoidance. A specific mitigation plan shall be prepared for any unavoidable impacts to any CRHR-eligible (as determined by the CPM) resources. A prescriptive treatment plan may be included in the CRMMP for limited data types.

2. A rationale for monitoring consistent with the findings of preconstruction geoarchaeological and archaeological investigations. It is expected that a less intensive monitoring program will be proposed due to the low geoarchaeological potential of the project area.
3. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground disturbance and post-ground-disturbance analysis phases of the project.
4. Identification of the person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team.
5. A description of the manner in which Native American observers or monitors will be included, the procedures to be used to select them, and their role and responsibilities.
6. A description of all impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation, and identification of areas where these measures are to be implemented. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related effects.
7. A statement that all encountered cultural resources 50 years old or older shall be recorded on the appropriate Department of Parks and Recreation (DPR) 523 form(s) and mapped and photographed. In addition, all archaeological materials retained as a result of the archaeological investigations (e.g., survey, testing, data recovery) shall be curated in accordance with the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, into a retrievable storage collection in a public repository or museum.
8. A statement that the project owner will pay all curation fees for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the project on the project site. The project owner shall identify three possible curation facilities that could accept cultural resources materials resulting from project activities.
9. A statement demonstrating when and how the project owner will comply with Health and Human Safety Code 7050.5(b) and Public Resources Code 5097.98(b) and (e), including the statement that the project owner will notify the CPM and the Native American Heritage Commission (NAHC) of the discovery of human remains.

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10. A statement that the CRS has access to equipment and supplies necessary for site mapping, photography, and recovery of any cultural resource materials that are encountered during ground disturbance and cannot be treated prescriptively.
11. A description of the contents, format, and review and approval process of the final Cultural Resource Report (CRR), which shall be prepared according to ARMR guidelines.

**Verification:**

12. After approval of the CRS proposed by the project owner, the CPM will provide to the project owner an electronic copy of the draft model CRMMP for the CRS.
13. At least 30 days prior to the start of ground disturbance, the project owner shall submit the CRMMP to the CPM for review and approval.
14. At least 30 days prior to the start of ground disturbance, in a letter to the CPM, the project owner shall agree to pay curation fees for any materials generated or collected as a result of the archaeological investigations (survey, testing, data recovery) on the project site.
15. Within 90 days after completion of ground disturbance (including landscaping), if cultural materials requiring curation were generated or collected, the project owner shall provide to the CPM a copy of an agreement with, or other written commitment from, a curation facility that meets the standards stated in the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, to accept the cultural materials from this project. Any agreements concerning curation will be retained and available for audit for the life of the project.

82. Page 83. The Applicant has no changes to CUL-4.

83. Pages 83 -- 85. Please make the following changes to CUL-5. Facilities outside of California have been removed.

**CUL-5** Prior to, and for the duration of, ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site, ~~along the linear facilities routes,~~ and at laydown areas, roads, and other ancillary areas in California. The cultural resources part of this training shall be prepared by the CRS, ~~may be conducted by any member of the archaeological team,~~ and may be presented in the form of a video. During the training and during construction, the CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, as described in detail in CUL- 1, resumes.

**Verification:** The training shall include:

1. A discussion of applicable laws and penalties under law;
2. Samples or visuals of artifacts that might be found in the project vicinity;

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3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
4. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;
5. Instruction that the CRS, alternate CRS, and CRMs have the authority to halt ground disturbance in the immediate area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;
6. Instruction that employees, if the CRS, alternate CRS, or CRMs are not present, are to halt work on their own in the vicinity of a potential cultural resources discovery, and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;
7. An informational brochure that identifies reporting procedures in the event of a discovery;
8. An acknowledgement form signed by each worker indicating that they have received the training; and
9. A sticker that shall be placed on hard hats indicating that environmental training has been completed. No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.

**Verification:**

10. At least 30 days prior to the beginning of ground disturbance, the CRS shall provide the cultural resources WEAP training program draft text, including Native American participation, graphics, and the informational brochure to the CPM for review and approval.
11. At least 15 days prior to the beginning of ground disturbance, the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.
12. Monthly, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers who have completed the training in the prior month and a running total of all persons who have completed training to date.
84. Pages 85 -- 87. Please make the following changes to CUL-6. The CEC has concurred that the project site has no known archeological resources. Therefore, full-time monitoring is not warranted.  
  
**CUL-6** Prior to ground disturbance, the project owner shall notify the CPM of the date on which ground disturbance will ensue. The project owner shall ensure that the CRS, alternate CRS, or CRMs monitor, ~~full time~~, all ground disturbance at the project site, along the linear facilities routes in California, and at laydown areas, roads, and other ancillary areas, to ensure there are no impacts to undiscovered

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resources and to ensure that known resources are not impacted in an unanticipated manner.

If there is a discovery of archaeological material, fFull-time archaeological monitoring for this project shall be the archaeological monitoring of ground-disturbing activities in the areas specified in the previous paragraph, for as long as the activities are ongoing. Where excavation equipment is actively removing dirt and hauling the excavated material farther than fifty feet from the location of active excavation, full-time archaeological monitoring shall require at least two monitors per excavation area. In this circumstance, one monitor shall observe the location of active excavation and a second monitor shall inspect the dumped material. For excavation areas where the excavated material is dumped no farther than fifty feet from the location of active excavation, one monitor shall both observe the location of active excavation and inspect the dumped material.

A Native American monitor shall be obtained to monitor ground disturbance in areas where Native American artifacts may be discovered. Contact lists of interested Native Americans and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow ground disturbance to proceed without a Native American monitor.

**Verification:** The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered.

On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of non-compliance with the conditions and/or applicable LORS. Copies of the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended.

The CRS or alternate CRS shall report daily to the CPM on the status of the project's cultural resources-related activities, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM.

In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

The CRS, at his or her discretion, or at the request of the CPM, may informally discuss cultural resources monitoring and mitigation activities with Energy Commission technical staff.

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Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these conditions.

Upon becoming aware of any incidents of non-compliance with the conditions and/or applicable LORS, the CRS and/or the project owner shall notify the CPM by telephone or e-mail within 24 hours. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the C conditions. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.

**Verification:**

1. At least 30 days prior to the start of ground disturbance, the CPM will notify all Native Americans with whom the Energy Commission communicated during the project review of the date on which the project's ground disturbance will begin.
  2. At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log.
  3. Monthly, while monitoring is on-going, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS and shall attach any new DPR 523A forms completed for finds treated prescriptively, as specified in the CRMMP.
  4. At least 24 hours prior to implementing a proposed change in monitoring level, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring level.
  5. Daily, as long as no cultural resources are found, the CRS shall provide a statement that "no cultural resources over 50 years of age were discovered" to the CPM as an e-mail or in some other form of communication acceptable to the CPM.
  6. At least 24 hours prior to reducing or ending daily reporting, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for reducing or ending daily reporting.
  7. No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit to the CPM copies of the information transmittal letters sent to the chairpersons of the Native American tribes or groups who requested the information. Additionally, the project owner shall submit to the CPM copies of letters of transmittal for all subsequent responses to Native American requests for notification, consultation, and reports and records.
85. Pages 87 -- 88. Please make the following changes to CUL-7.

**CUL-7** The project owner shall grant authority to halt ground disturbance in the immediate area of a find to the CRS, alternate CRS, and the CRMs in the event of a cultural resources discovery. Redirection of ground disturbance shall be

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accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event that a cultural resource over 50 years of age is found (or if younger, determined exceptionally significant by the ~~CPM~~CRS), or impacts to such a resource can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. If the discovery includes human remains, the project owner shall comply with the requirements of Health and Human Safety Code § 7050.5(b) and shall notify the CPM and the NAHC of the discovery of human remains. No action shall be initiated without direction from the CPM. Monitoring and daily reporting, as provided in other conditions, shall continue during the project's ground-disturbing activities elsewhere. After the discovery of human remains, cultural resources monitoring of ground disturbance shall continue or be initiated, and shall include a Native American monitor pursuant to requirements in these conditions of certification. The halting or redirection of ground disturbance shall remain in effect until the CRS has visited the discovery, and all of the following have occurred:

1. The CRS has notified the project owner, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning, including a description of the discovery (or changes in character or attributes), the action taken (i.e., work stoppage or redirection), a recommendation of CRHR eligibility, and recommendations for data recovery from any cultural resources discoveries, whether or not a determination of CRHR eligibility has been made.
2. If the discovery would be of interest to Native Americans, the CRS has notified all Native American groups that have requested to be notified in the event of such a discovery within 24 hours of the discovery.
3. The CRS has completed field notes, measurements, and photography for a DPR 523 "Primary" form. Unless the find can be treated prescriptively, as specified in the CRMMP, the "Description" entry of the DPR 523 "Primary" form shall include a recommendation on the CRHR eligibility of the discovery. The project owner shall submit completed forms to the CPM.
4. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the discovery and approved the CRS's proposed data recovery, if any, including the curation of the artifacts, or other appropriate mitigation; and any necessary data recovery and mitigation have been completed. Ground disturbance may resume only with the approval of the CPM.

**Verification:**



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1. At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, and CRMs have the authority to halt ground disturbance in the immediate vicinity of a cultural resources discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning.
2. Unless the discovery can be treated prescriptively, as specified in the CRMMP, completed DPR 523 forms for resources newly discovered during ground disturbance shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever the CRS decides is more appropriate for the subject cultural resource.
3. Within 48 hours of the discovery of a resource of interest to Native Americans, the project owner shall ensure that the CRS notifies all Native American groups that expressed a desire to be notified in the event of such a discovery, and the CRS must inform the CPM when the notifications are complete.
4. No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit to the CPM copies of the information transmittal letters sent to the chairpersons of the Native American tribes or groups who requested the information. Additionally, the project owner shall submit to the CPM copies of letters of transmittal for all subsequent responses to Native American requests for notification, consultation, and reports and records.
5. Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by Native Americans in response to the project owner's transmittals of information.
86. Pages 88 -- 89. Please make the following changes to CUL-8. These conditions need to be restricted to California.

**CUL-8** If fill soils must be acquired from a non-commercial borrow site in California or disposed of to a non-commercial disposal site in California, unless less-than-five-year-old surveys of these sites for archaeological resources are documented and approved by the CPM, the CRS shall survey the borrow and/or disposal site/s for cultural resources and record on DPR 523 forms any that are identified. When the survey is completed, the CRS shall convey the results and recommendations for further action to the project owner and the CPM, who will determine what, if any, further action is required. If the CPM determines that significant archaeological resources that cannot be avoided are present at the borrow site, other conditions shall apply. The CRS shall report on the methods and results of these surveys in the final CRR.

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1. As soon as the project owner knows that a non-commercial borrow site and/or disposal site will be used, he/she shall notify the CRS and CPM and provide documentation of previous archaeological survey, if any, dating within the past five years, for CPM approval.
  2. In the absence of documentation of recent archaeological survey, at least 30 days prior to any soil borrow or disposal activities on the non-commercial borrow and/or disposal sites, the CRS shall survey the site/s for archaeological resources. The CRS shall notify the project owner and the CPM of the results of the cultural resources survey, with recommendations, if any, for further action.
87. Pages 88 -- 89. Please delete CUL-9 for the reasons discussed above and for the following reasons: 1) the project will not directly affect any segments of the OST-MR that are eligible for the CRHR; 2) the OSTA is not qualified to conduct a study of the OST-MR to federal or state standards; 3) an adequate study has been provided (Data Response 125, Data Response Set 1D-5); and 4) producing a study is not appropriate mitigation.
88. Pages 91 -- 92. For the reasons identified in the comments above, please delete CUL-10.
89. Pages 92 -- 94. Please delete CUL-11. A research program is not appropriate mitigation especially when the object of the research is a multi-state, out of state resource. Information on the Pahrump metapatch sufficient for staff analysis is available in Data Response 105.
90. Page 94. Please delete CUL-12. This is private property. Any requirements for demolition, restoration and/or revegetation should come from Inyo County. The measure is also redundant to the Facility Closure requirements of the General Conditions of Certification.

## **EXECUTIVE SUMMARY**

### **General Comments**

1. The description of the Electrical Transmission System and Natural Gas Supply System have been modified. The revised descriptions contained in the Applicant's General Document Comments should be used.

### **Specific Comments**

2. Page 1.1-4: Please revise the section heading "Project Impacts Outside the State Border" as follows:  
  
"UNIQUE CEQA ISSUES PRESENTED DUE TO THE PROJECT'S LOCATION NEAR PROJECT IMPACTS OUTSIDE THE STATE BORDER"
3. Page 1.1-4, Project Impacts Outside the State Border, 1<sup>st</sup> paragraph: The PSA states, without citation to any legal authority:

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“Because CEQA review does not stop at the borders of the State of California, CEQA applies to any *exercise of powers* by a California state or local agency. Accordingly, projects impacts *outside* the state of California that are caused by a project under review *inside* the state of California are appropriately reviewed, especially as they relate to cumulative effects.”

This statement is incorrect for two reasons. First, the California Environmental Quality Act (CEQA) does stop at the borders of the state with respect to portions of facilities that are constructed outside of California. The exercise of powers by a state agency outside of California are not subject to CEQA. Public Resources Code Section 21080(B)(14) states:

§ 21080(b): This division [CEQA] does not apply to any of the following activities:

\* \* \*

(14) Any project or portion thereof located in another state which will be subject to environmental impact review pursuant to the [NEPA] or similar state laws of that state. Any emissions or discharges that would have a significant effect on the environment in this state are subject to this division.

The gas line and transmission lines in Nevada which are part of the HHEGS project will be subject to a Federal Environmental Impact Statement (FEIS) prepared by the U.S. Bureau of Land Management (BLM). Therefore, the Staff should delete from the FSA any discussion of the impacts (direct, indirect, or cumulative) of those portions of the project located in Nevada.

Second, it is well settled that CEQA does not apply to the impacts in Nevada from those portions of the project located in California. These impacts will be addressed appropriately in the EIS that is prepared for the Nevada facilities, because the project site will be addressed as a “connection action.” However, there is no authority for a *California* agency applying the *California* Environmental Quality Act to assess the impacts of a *California* project in Nevada.

In *California Tahoe Regional Planning Agency (TRPA) v. Harrah’s Corporation* (“*Harrah’s*”) decided on February 3, 1981, California brought suit to enjoin the construction of a casino in Nevada, asserting that TRPA was required to comply with CEQA before approving the project. The court held CEQA applied to TRPA, but “only to the extent that the proposed project falls within California borders.”<sup>32</sup> The court concluded that any analysis conducted by TRPA pursuant to CEQA should be limited to “the actual impact on California of that portion of the project that lies within California,” and that it would be improper for the TRPA to “study[ ] the impact of the project as a whole.”<sup>33</sup> Based on this conclusion, the court held that CEQA would only apply to the extent that the project involved California land—in this case, the installation of a landscaped infiltration ditch for drainage—and that environmental review of the project would be “limited to the effects of the drainage from the project, the change in surface use, and the effect of the construction work itself on the

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<sup>32</sup> *California Tahoe Regional Planning Agency v. Harrah’s Corporation*, 509 F.Supp. 753, 760 (1981).

<sup>33</sup> *California Tahoe Regional Planning Agency v. Harrah’s Corporation*, 509 F.Supp. 753, 760 (1981).

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California environment.”<sup>34</sup> Similarly, the Commission’s CEQA jurisdiction extends only to the extent that the HHSEGS project involves California land and the effect of the project on the California environment.

Therefore, the FSA should delete all discussion of the impacts of the HHSEGS project (direct, indirect, and cumulative) on the Nevada environment.

4. Page 1.1- 4, Cumulative Effects, 1<sup>st</sup> paragraph: “reasonably foreseeable” and “probable” are not the same thing. Please use “reasonably foreseeable.”

5. Page 1.1- 4, last paragraph, 1<sup>st</sup> sentence: Please revise as follows:

Accordingly, staff in each technical section of this PSA determined which of the project’s potential effects from the Cumulative Projects list in combination with the potential effects of the HHSEGS project could create impacts specific to their technical area.

6. Page 1.1-5, Table 2: The Applicant has multiple comments on this table:

First, CEQA Guidelines Section 15355 require that the cumulative impacts of the project be assessed in relation to “closely related” past, present, and reasonably foreseeable future projects. The Master List of Cumulative Projects in the PSA contains many projects that are not closely related to the HHSEGS project. Many of these projects are far outside any relevant natural resource boundary that is relevant to environmental analysis—outside the viewshed, noiseshed, or watershed of the project. The Applicant listed the following three closely related projects in the AFC because these projects were in close proximity to the project site and within the same viewshed or watershed: St. Therese Mission, Pahrump Airport, and Element Solar. If the FSA intends to include any additional reasonably foreseeable projects, the FSA must explain clearly why the projects are “closely related” and should identify the relevant resource boundary that makes the project related.

The table should state the distance of each project in this list from the HHSEGS project site and why the project is closely related.

7. Page 1.1-6, Proposed HHSEGS Project Objectives: This list does not contain all of the Applicant’s project objectives, nor does it accurately state the objectives of the project that is the subject of this AFC. In some cases, they have been summarized. In other cases, they have been deleted or replaced by what appear to be objectives for the California Energy Commission (CEC) renewable energy program.
8. Page 1.1-8, Initial Public Notice and Outreach: The public has also been provided opportunities for public comment at each of the five Status Conferences held prior to publication of the PSA.
9. Page 1.1-11, Table 3: There is no heading to the third column.

Inyo County, California, “Air/Heath” column: Does this refer to a general comment in the November 29, 2011 letter from the County, or is there something more specific?

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<sup>34</sup> *California Tahoe Regional Planning Agency v. Harrah’s Corporation*, 509 F.Supp. 753, 760 (1981).

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10. Page 1.1-12, Environmental Justice, Item 2 under “Environmental Justice: Guidance Under the National Environmental Policy Act”:

What is the source for saying that a minority population of the potentially affected area is “2. present in one or more US Census blocks where a minority population of greater than 50% exists”?

The PSA should state what census data was used to conduct the screening analysis.

Was the Environmental Justice analysis conducted for each technical section or specific set?

11. Page 1.1-12, Environmental Justice, 4<sup>th</sup> sentence of the first paragraph following Item 2: Please revise the text as follows:

“Staff determined that neither the construction nor operation of the proposed HHSEGS project would involve environmental impacts that could contribute to a disproportionately high and adverse human health or environmental impact on an environmental justice population.”

12. Page 1.1-13, Biological Resources bullet, 2<sup>nd</sup> sentence: Please clarify the meaning of the phrase “additions to Desert Kit Fox, American Badger and Burrowing Owl conditions.”

13. Page 1.1-13, Land Use bullet: Please also mention that the path forward to reduce impacts would be a General Plan Amendment.

Note that four of the figures in this section say “Biological Resources” in the title and in the footer. Are they supposed to be in this section? The section references Biological Resources Figures 1 through 5, but only four are included. It also references figures from other sections that are not included (e.g., Project Description Figures 1, 6, and 3; Socioeconomics Figure 1).

## **Findings of Fact**

No findings of fact in this section.

## **Conditions of Certification**

No conditions of certification in this section.

# **FACILITY DESIGN**

## **General Comments**

1. CEC’s delegate Chief Building Official (CBO) is required to create and maintain a detailed project Web site for tracking all Facility Design compliance submittals. The CPM and CEC Staff can have access to this Web site. Those individuals who have been granted access receive e-mail messages when the project owner has uploaded documents. E-mail messages are also sent when the CBO comments and approves documents. Given this, it is burdensome to require the Applicant to also have to provide Facility Design compliance submittals to the CPM. The same information can be accessed by the CPM from the Web site.

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2. The “Verification” designation is missing throughout the COCs.

### **Specific Comments**

3. Page 5.1-21, References, 1<sup>st</sup> reference: Revise the reference as follows:

HHSG 2011a — ~~BrightSource Energy~~/J. Woolard (tn: 61756) Application for Certification,  
Volume 1 & 2. 08/5/2011

PLEASE NOTE: The same comment applies to HHSG 2011b, and HHSG 2011c.

### **Findings of Fact**

No findings of fact in this section.

### **Conditions of Certification**

4. Pages 5.1-6 and 7, GEN-1: Please revise GEN-1 as follows:

**GEN-1** The project owner shall design, construct, and inspect the project in accordance with the 2010 California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the CBO for review and approval (the CBSC in effect is the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously). The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving, demolition, repair, or maintenance of the completed facility. All on-site transmission facilities (lines, switchyards, switching stations and substations) are covered in the conditions of certification in the **TRANSMISSION SYSTEM ENGINEERING** section of this document.

In the event that the initial engineering designs are submitted to the CBO when the successor to the 2010 CBSC is in effect, the 2010 CBSC provisions shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

The project owner shall ensure that all contracts with contractors, subcontractors, and suppliers clearly specify that all work performed and materials supplied comply with the codes listed above.

**Verification:** Within 30 days following receipt of the certificate of occupancy, the project owner shall submit to the CPM a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation, and inspection requirements of the applicable LORS and the Energy Commission’s decision have been met in the area of

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facility design. ~~The project owner shall provide the CPM a copy of the certificate of occupancy within 30 days of receipt from the CBO.~~

Once the certificate of occupancy has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, or demolition, ~~repair, or maintenance~~ to be performed on any portion(s) of the completed facility that requires CBO approval for compliance with the above codes. The CPM will then determine if the CBO needs to approve the work.

5. Pages 5.1-7 and 8, GEN-2: Please revise GEN-2 as follows:

**GEN-2** Before submitting the initial engineering designs for CBO review, the project owner shall furnish the CPM and the CBO with a schedule of facility design submittals, and master drawings and master specifications list. The master drawings and master specifications list shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures, systems, and equipment. Major structures, systems, and equipment are structures and their associated components or equipment that are necessary for power production, costly or time consuming to repair or replace, are used for the storage, containment, or handling of hazardous or toxic materials, or could become potential health and safety hazards if not constructed according to applicable engineering LORS. The schedule shall contain the date of each submittal to the CBO. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM upon request.

**Verification:** At least 60 days (or a project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO ~~and to the CPM~~ the schedule, and the master drawings and master specifications list of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures, systems, and equipment defined above in Condition of Certification **GEN-2**. Major structures and equipment shall be added to or deleted from the list only with CPM approval... ~~The project owner shall provide schedule updates in the monthly compliance report.~~

6. Page 5.1-8, GEN-3: Please revise GEN-3 as follows:

**GEN-3** The project owner shall make payments to the CBO for design review, plan checks, and construction inspections, based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 2010 CBC, adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be otherwise agreed upon by the project owner and the CBO.

**Verification:** The project owner shall make the required payments to the CBO in accordance with the agreement between the project owner and the CBO. ~~The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next monthly compliance report indicating that applicable fees have been paid.~~

7. Pages 5.1-8 and 9, GEN-4: Please revise GEN-4 as follows:



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**GEN-4** Prior to the start of rough grading, the project owner shall assign a California-registered architect, or a structural or civil engineer, as the resident engineer (RE) in charge of the project. All onsite transmission facilities (lines, switchyards, switching stations, and substations) are addressed in the conditions of certification in the **TRANSMISSION SYSTEM ENGINEERING** section of this document.

The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project, respectively. A project may be divided into parts, provided that each part is clearly defined as a distinct unit. Separate assignments of general responsibility may be made for each designated part.

The RE shall:

1. Monitor progress of construction work requiring CBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all facilities subject to CBO design review and inspection conforms in every material respect to applicable LORS, these conditions of certification, approved plans, and specifications;
3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project;
4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents;
5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and
6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests when they do not conform to approved plans and specifications.

The resident engineer (or his delegate) must be located at the project site, or be available at the project site within a reasonable period of time, during any hours in which construction takes place.

The RE shall have the authority to halt construction and to require changes or remedial work if the work does not meet requirements.

If the RE or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned engineer to the CBO for review and approval. ~~The project owner shall notify the CPM of the CBO's approval of the new engineer.~~

**Verification:** At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO for review and

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approval, the resume and registration number of the RE and any other delegated engineers assigned to the project. ~~The project owner shall notify the CPM of the CBO's approvals of the RE and other delegated engineer(s) within five days of the approval.~~

If the RE or the delegated engineer(s) is subsequently reassigned or replaced, the project owner has five days to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. ~~The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.~~

8. Pages 5.1-9 through 12, GEN-5: Please revise GEN-5 as follows:

**GEN-5** Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 require state registration to practice as a civil engineer or structural engineer in California). All on-site transmission facilities (lines, switchyards, switching stations, and substations) are handled in the conditions of certification in the **TRANSMISSION SYSTEM ENGINEERING** section of this document.

The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The on-site transmission line may be the responsibility of a separate California registered electrical engineer.

The project owner shall submit, to the CBO for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project.

If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned responsible engineer to the CBO for review and approval. ~~The project owner shall notify the CPM of the CBO's approval of the new engineer.~~

A. The civil engineer shall:

1. Review the foundation investigations, geotechnical, or soils reports prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;

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2. Design (or be responsible for the design of), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads and sanitary sewer systems; and
3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes to the construction procedures.

B. The soils engineer, geotechnical engineer, or civil engineer experienced and knowledgeable in the practice of soils engineering, shall:

1. Review all the engineering geology reports;
2. Prepare the foundation investigations, geotechnical, or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement or collapse when saturated under load;
3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the 2010 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and
4. Recommend field changes to the civil engineer and RE.

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations.

C. The engineering geologist shall:

1. Review all the engineering geology reports and prepare a final soils grading report; and
2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2010 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).

D. The design engineer shall:

1. Be directly responsible for the design of the proposed structures and equipment supports;
2. Provide consultation to the RE during design and construction of the project;

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3. Monitor construction progress to ensure compliance with engineering LORS;
  4. Evaluate and recommend necessary changes in design; and
  5. Prepare and sign all major building plans, specifications, and calculations.
- E. The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the CBO, stating that the proposed final design plans, specifications, and calculations conform to all of the mechanical engineering design requirements set forth in the Energy Commission's decision.
- F. The electrical engineer shall:
1. Be responsible for the electrical design of the project; and
  2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

**Verification:** At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, resumes and registration numbers of the responsible civil engineer, soils (geotechnical) engineer and engineering geologist assigned to the project.

At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of construction, the project owner shall submit to the CBO for review and approval, resumes and registration numbers of the responsible design engineer, mechanical engineer, and electrical engineer assigned to the project.

~~The project owner shall notify the CPM of the CBO's approvals of the responsible engineers within five days of the approval.~~

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. ~~The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.~~

9. Pages 5.1-12 & 13, GEN-6: Please revise GEN-6 as follows:

**GEN-6** Prior to the start of an activity requiring special inspection, including prefabricated assemblies, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2010 CBC. All onsite transmission facilities (lines, switchyards, switching stations, and substations) are handled in conditions of certification in the **Transmission System Engineering** section of this document.

A certified weld inspector, certified by the American Welding Society (AWS), and/or American Society of Mechanical Engineers (ASME) as applicable, shall inspect welding performed on-site requiring special inspection (including structural, piping, tanks and pressure vessels).

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The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;
2. Inspect the work assigned for conformance with the approved design drawings and specifications;
3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the CBO ~~and the CPM~~ for corrective action; and
4. Submit a final signed report to the RE, ~~and CBO and CPM~~, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans, specifications, and other provisions of the applicable edition of the CBC.

**Verification:** At least 15 days (or project owner- and CBO-approved alternative time frame) prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO for review and approval, ~~with a copy to the CPM,~~ the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. ~~The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next monthly compliance report.~~

If the special inspector is subsequently reassigned or replaced, the project owner has five days in which to submit the name and qualifications of the newly assigned special inspector to the CBO for approval. ~~The project owner shall notify the CPM of the CBO's approval of the newly assigned inspector within five days of the approval.~~

10. Page 5.1-13, GEN-7: Please revise GEN-7 as follows:

**GEN-7** If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend required corrective actions. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this condition of certification and, if appropriate, applicable sections of the CBC and/or other LORS.

**Verification:** The project owner shall transmit a copy of the CBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next monthly compliance report. ~~If any corrective action is disapproved, the project owner shall advise the CPM, within five days, of the reason for disapproval and the revised corrective action to obtain CBO's approval.~~

11. Pages 5.1-13 and 14, GEN-8: Please revise GEN-8 as follows:

**GEN-8** The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request

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the CBO to inspect the completed structure and review the submitted documents. ~~The project owner shall notify the CPM after obtaining the CBO's final approval.~~ The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site or at another accessible location during the operating life of the project. Electronic copies of the approved plans, specifications, calculations, and marked-up as-built shall be provided to the CBO for retention by the CPM.

Within 15 days of the completion of any work, the project owner shall submit to the CBO, ~~with a copy to the CPM, in the next monthly compliance report,~~ (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work conforms to the final approved plans. After storing the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to the CPM a letter stating both that the above documents have been stored and the storage location of those documents.

Within 90 days of the completion of construction, the project owner shall provide to the CBO three sets of electronic copies of the above documents at the project owner's expense. These are to be provided in the form of "read only" (Adobe .pdf 6.0 or newer version) files, with restricted (password-protected) printing privileges, on archive quality compact discs.

12. Page 5.1-14, CIVIL-1: Item 3 should be removed because the Stormwater Pollution Prevention Plan (SWPPP) is a State Water Resources Control Board/Regional Water Quality Control Board (SWRCB/RWQCB) document, which is in response to a federal law. Please revise CIVIL-1 as follows:

**CIVIL-1** The project owner shall submit to the CBO for review and approval the following:

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
- ~~3. A construction storm water pollution prevention plan (SWPPP);~~
3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
4. Soils, geotechnical, or foundation investigations reports required by the 2010 CBC.

**Verification:** At least 15 days (or project owner- and CBO-approved alternative time frame) prior to the start of site grading the project owner shall submit the documents described above to the CBO for design review and approval. ~~In the next monthly compliance report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.~~

13. Page 5.1-14, CIVIL-2: Please revise CIVIL-2 as follows.

**CIVIL-2** The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer, geotechnical engineer, or

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the civil engineer experienced and knowledgeable in the practice of soils engineering identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications, and calculations to the CBO based on these new conditions. The project owner shall obtain approval from the CBO before resuming earthwork and construction in the affected area.

**Verification:** The project owner shall notify the CPM within 24 hours, when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. ~~Within 24 hours of the CBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the CBO's approval.~~

14. Pages 5.1-14 & 15, CIVIL-3: Please revise CIVIL-3 as follows.

**CIVIL-3** The project owner shall perform inspections in accordance with the 2010 CBC. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, and the CBO, ~~and the CPM~~. The project owner shall prepare a written report, with copies to the CBO ~~and the CPM~~, detailing all discrepancies, non-compliance items, and the proposed corrective action.

**Verification:** Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the CBO ~~and the CPM~~ a non-conformance report (NCR), and the proposed corrective action for review and approval. Within five days of resolution of the NCR, the project owner shall submit the details of the corrective action to the CBO ~~and the CPM~~. A list of NCRs, for the reporting month, shall also be included in the following monthly compliance report.

15. Page 5.1-15, CIVIL-4: Please revise CIVIL-4 as follows:

**CIVIL-4** After completion of finished grading and erosion and sedimentation control and drainage work, the project owner shall obtain the CBO's approval of the final grading plans (including final changes) for the erosion and sedimentation control work. The civil engineer shall state that the work within his/her area of responsibility was done in accordance with the final approved plans.

**Verification:** Within 30 days (or project owner- and CBO-approved alternative time frame) of the completion of the erosion and sediment control mitigation and drainage work, the project owner shall submit to the CBO, for review and approval, the final grading plans (including final changes) and the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their intended purposes, ~~along with a copy of the transmittal letter to the CPM. The project owner shall submit a copy of the CBO's approval to the CPM in the next monthly compliance report.~~



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16. Pages 5.1-15 and 16, STRUC-1: Please revise STRUC-1 as follows:

**STRUC-1** Prior to the start of any increment of construction, the project owner shall submit plans, calculations and other supporting documentation to the CBO for design review and acceptance for all project structures and equipment identified in the CBO-approved master drawing and master specifications lists. The design plans and calculations shall include the lateral force procedures and details as well as vertical calculations.

Construction of any structure or component shall not begin until the CBO has approved the lateral force procedures to be employed in designing that structure or component.

The project owner shall:

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;
2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (for example, highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications;
3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation;
4. Ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations, and specifications shall be signed and stamped by the responsible design engineer; and
5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to applicable LORS.

**Verification:** At least 60 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of construction of any structure or component listed in the CBO-approved master drawing and master specifications list, the project owner shall submit to the CBO the above final design plans, specifications and calculations, ~~with a copy of the transmittal letter to the CPM.~~

~~The project owner shall submit to the CPM, in the next monthly compliance report, a copy of a statement from the CBO that the proposed structural plans, specifications, and calculations have been approved and comply with the requirements set forth in applicable engineering LORS.~~

17. Pages 5.1-16 and 17, STRUC-2: Please revise STRUC-2 as follows:

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**STRUC-2** The project owner shall submit to the CBO the required number of sets of the following documents related to work that has undergone CBO design review and approval:

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);
2. Concrete pour sign-off sheets;
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and
5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2010 CBC.

**Verification:** If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies and the proposed corrective action to the CBO, ~~with a copy of the transmittal letter to the CPM.~~ The NCR shall reference the condition(s) of certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO ~~and the CPM.~~

18. Page 5.1-17, STRUC-3: Please revise STRUC-3 as follows:

**STRUC-3** The project owner shall submit to the CBO design changes to the final plans required by the 2010 CBC, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the CBO prior notice of the intended filing.

**Verification:** On a schedule suitable to the CBO, the project owner shall notify the CBO of the intended filing of design changes, and shall submit the required number of sets of revised drawings and the required number of copies of the other above-mentioned documents to the CBO, ~~with a copy of the transmittal letter to the CPM.~~ The project owner shall notify the CPM, via the monthly compliance report, when the CBO has approved the revised plans.

19. Page 5.1-17, STRUC-4: Please revise STRUC-4 as follows:

**STRUC-4** Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in the 2010 CBC shall, at a minimum, be designed to comply with the requirements of that chapter.

**Verification:** At least 30 days (or project owner- and CBO-approved alternate time frame) prior to the start of installation of the tanks or vessels containing the above specified

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quantities of toxic or hazardous materials, the project owner shall submit to the CBO for design review and approval final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

~~The project owner shall send copies of the CBO approvals of plan checks to the CPM in the following monthly compliance report. The project owner shall also transmit a copy of the CBO's inspection approvals to the CPM in the monthly compliance report following completion of any inspection.~~

20. Pages 5.1-17 and 18, MECH-1: Please revise MECH-1 as follows:

**MECH-1** The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in the CBO-approved master drawing and master specifications list. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of that construction.

The responsible mechanical engineer shall stamp and sign all plans, drawings, and calculations for the major piping and plumbing systems, subject to CBO design review and approval, and submit a signed statement to the CBO when the proposed piping and plumbing systems have been designed, fabricated, and installed in accordance with all of the applicable laws, ordinances, regulations and industry standards, which may include, but are not limited to:

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);
- ANSI B31.2 (Fuel Gas Piping Code);
- ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);
- ANSI B31.8 (Gas Transmission and Distribution Piping Code);
- NACE R.P. 0169-83;
- NACE R.P. 0187-87;
- NFPA 56;
- Title 24, California Code of Regulations, Part 5 (California Plumbing Code);
- Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems);
- Title 24, California Code of Regulations, Part 2 (California Building Code); and
- Inyo County codes (including Title 21).

The CBO may deputize inspectors to carry out the functions of the code enforcement agency.

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**Verification:** At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of major piping or plumbing construction listed in the CBO-approved master drawing and master specifications list, the project owner shall submit to the CBO for design review and approval the final plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with applicable LORS, ~~and shall send the CPM a copy of the transmittal letter in the next monthly compliance report.~~

~~The project owner shall transmit to the CPM, in the monthly compliance report following completion of any inspection, a copy of the transmittal letter conveying the CBO's inspection approvals.~~

21. Page 5.1-19, MECH-2: Please revise MECH-2 as follows:

**MECH-2** For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal-OSHA), prior to operation, the code certification papers and other documents required by applicable LORS. Upon completion of the installation of any pressure vessel, the project owner shall request the appropriate CBO and/or Cal-OSHA inspection of that installation.

The project owner shall:

1. Ensure that all boilers and fired and unfired pressure vessels are designed, fabricated, and installed in accordance with the appropriate section of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, or other applicable code. Vendor certification, with identification of applicable code, shall be submitted for prefabricated vessels and tanks; and
2. Have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications, and calculations conform to all of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.

**Verification:** At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of on-site fabrication or installation of any pressure vessel, the project owner shall submit to the CBO for design review and approval, the above listed documents, including a copy of the signed and stamped engineer's certification, ~~with a copy of the transmittal letter to the CPM.~~

~~The project owner shall transmit to the CPM, in the monthly compliance report following completion of any inspection, a copy of the transmittal letter conveying the CBO's and/or Cal-OSHA inspection approvals.~~

22. Pages 5.1-19 and 20: MECH-3: Please revise MECH-3 as follows:

**MECH-3** The project owner shall submit to the CBO for design review and approval the design plans, specifications, calculations, and quality control procedures for any heating, ventilating, air conditioning (HVAC) or refrigeration system. Packaged HVAC

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systems, where used, shall be identified with the appropriate manufacturer's data sheets.

The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in accordance with the CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the CBO's inspection and approval of that construction. The final plans, specifications and calculations shall include approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications and calculations conform with the applicable LORS.

**Verification:** At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required HVAC and refrigeration calculations, plans, and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the CBC and other applicable codes, ~~with a copy of the transmittal letter to the CPM.~~

23. Pages 5.1-20 and 21, ELEC-1: Please revise ELEC-1 to be consistent with previous CEC projects:

**ELEC-1** Prior to the start of any increment of electrical construction for all electrical equipment and systems ~~110 480 volts~~Volts or higher (see a representative list, below) the project owner shall submit, for CBO design review and approval, the proposed final design, specifications, and calculations. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. All on-site transmission facilities (lines, switchyards, switching stations, and substations) are handled in conditions of certification in the Transmission System Engineering section of this document.

A. Final plant design plans shall include:

1. one-line diagram for the 13.8 kV, 4.16 kV and 480 V systems;
2. system grounding drawings;
3. lightning protection system; and hazard area classification plan.

B. Final plant calculations must establish:

1. short-circuit ratings of plant equipment;
2. ampacity of feeder cables;
3. voltage drop in feeder cables;

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4. system grounding requirements;
  5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 480 V systems;
  6. system grounding requirements;
  7. lighting energy calculations; and
  8. 110 volt system design calculations and submittals showing feeder sizing, transformer and panel load confirmation, fixture schedules and layout plans.
- C. The following activities shall be reported to the CPM in the monthly compliance report:
1. Receipt or delay of major electrical equipment;
  2. Testing or energization of major electrical equipment; and
  3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission decision.

**Verification:** At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for design review and approval the above listed documents. The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS. ~~and shall send the CPM a copy of the transmittal letter in the next monthly compliance report.~~

## **GEOLOGY AND PALEONTOLOGY**

### **General Comments**

1. Please add Bureau of Land Management Instructional Memorandum 2008-009 as a LORS because SVP guidelines are more than 15 years old and are, in part, out of date.
2. Latin epithets should be italicized.

### **Specific Comments**

3. Page 5.2-1, Summary of Conclusions, 1<sup>st</sup> full paragraph: Please revise as follows:  
  
Additional active faults in the vicinity of the project site are the Garlock fault (35 miles southwest of the site) and the Southern Death Valley fault zone (38 miles to the southwest) (**Geological Resources - Figure 2**). The significant effects of strong ground shaking on the HHSEGS structures must be mitigated, to the extent ~~feasible/practical~~, through structural designs required by the most recent edition of the California Building Code (CBC 2010).
4. Page 5.2-1, Summary of Conclusions, 3<sup>rd</sup> paragraph, 5<sup>th</sup> sentence: Please revise as follows:

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Paleontological resources have been documented within 3 miles of the project, but no significant fossils were found during field explorations at the project site ~~and/or~~ near ancillary facilities (HHS 2011a § 5.8).

5. Page 5.2-1, Summary of Conclusions, 4<sup>th</sup> paragraph: Please revise as follows:

Based on this information, Energy Commission staff believes that the potential ~~for significant~~ adverse cumulative impacts to project facilities from geologic hazards during its design life, ~~if any, are less than significant~~ is low. Similarly, staff believes the potential ~~for significant~~ adverse cumulative impacts to potential geologic, mineralogic, and paleontologic resources from the construction, operation, and closure of the proposed project, ~~if any, are less than significant~~ is low. It is staff's opinion that the proposed HHSEGS can be designed and constructed in accordance with all applicable laws, ordinances, regulations, and standards (LORS), and in a manner that both protects environmental quality and assures public safety, ~~to the extent practical~~.

6. Page 5.2-2, Introduction, 1<sup>st</sup> paragraph: Please revise as follows:

In this section, California Energy Commission (Energy Commission) staff discusses the potential impacts of geologic hazards on the proposed HHSEGS facility as well as the HHSEGS's potential impact on geologic, mineralogic, and paleontologic resources. Staff's objective is to identify resources that could be ~~significantly adversely~~ negatively affected, evaluate the potential of the project construction and operation to ~~significantly~~ impact the resources and provide mitigation measures as necessary to ensure that there would be no ~~significant~~ consequential adverse impacts to ~~significant~~ geological and paleontological resources during the project construction, operation, and closure and to ensure that operation of the plant would not expose occupants to high-probability geologic hazards. A brief geological and paleontological overview is provided. The section concludes with staff's proposed Conditions of Certifications – i.e., monitoring and mitigation measures that, if implemented, would reduce any project impacts to ~~for~~ geologic hazards and geologic, mineralogic, and paleontologic resources to insignificant levels, with the proposed Conditions of Certification.

7. Page 5.2-2, Table 1, Federal, 2<sup>nd</sup> row, Antiquities Act of 1906: Please revise the description as follows:

Provides for protection of objects of antiquity on federal lands. Protects and permits collection of paleontological resources on federal lands; requires inventory, assessment of effects, and mitigation if appropriate.

8. Page 5.2-2, Table 1, Federal, 3<sup>rd</sup> row, National Environmental Policy Act of 1969: Please delete this LORS, as it is duplicate and does not qualify as LORS for the purpose of CEC review.
9. Page 5.2-2, Table 1, Federal, 4<sup>th</sup> row, Omnibus Public Land Management Act of 2009, Title VI—Department of the Interior Authorizations, Subtitle D—Paleontological Resources Preservation: Please revise the description as follows:



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Directs the secretaries of the Interior and Agriculture to manage paleontological resources on BLM and USFS land using scientific principles and expertise, and to inventory paleontological resources on those lands.~~Causes the management and protection of paleontological resources on Federal land using scientific principles and expertise. Requires appropriate plans for inventory, monitoring, and the scientific and educational use of paleontological resources, in accordance with applicable agency laws, regulations, and policies.~~

10. Page 5.2-3, Table 1, Fourth Row, CEQA, Appendix G: Please revise the description as follows:

Asks if project would have impacts on paleontological resources or a unique geological feature.~~Requires that impacts on paleontological resources be assessed and mitigated on all discretionary projects, public and private.~~

11. Page 5.2-3, Table 1, bottom of table: Please add Bureau of Land Management Instructional Memorandum 2008-009 as a LORS because SVP guidelines are more than 15 years old and are, in part, out of date. BLM guidelines are current, more explicit, and were used in this project. Please add the following description:

Provides up-to-date methodologies for assessing paleontological sensitivity and management guidelines for paleontological resources on lands managed by the Bureau of Land Management.

12. Page 5.2-3, Setting, last sentence: Please revise as follows:

As detailed in the **PROJECT DESCRIPTION SECTION** of this PSA, the project will include the construction of the 500 MW power plant (consisting of Solar Plant 1, Solar Plant 2 and a common area), natural gas supply lines, sewer and storm water collection and conveyance features, ~~19~~ transmission linestowers, and water supply infrastructure.

13. Page 5.2-4, Region Setting, 2<sup>nd</sup> paragraph, last sentence: The term metamorphism is misleading in this case. These are sedimentary, not metamorphic rocks. Please replace “metamorphism” with “diagenesis.”

14. Page 5.2-4, first full paragraph, last sentence: These are mostly sedimentary, not metamorphic. Please revise as follows:

“...thinned, and then broke the crust~~metamorphosed rocks~~ into some 400 mountain blocks...”

15. Page 5.2-4, 4<sup>th</sup> full paragraph: Please revise as follows:

Late in the development of the Basin and Range province, and continuing into the Quaternary (the last 2 million years), uplift of the Sierra Nevada, as well as Transverse and Peninsular Ranges of California, led to a strengthened rain shadow and progressive desertification in the Great Basin as precipitation declined in the interior (HHSg 2011a § 5.8).

16. Page 5.2-5, 3<sup>rd</sup> paragraph, 2<sup>nd</sup> sentence: The wells are not abandoned. Please remove “abandoned.”

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17. Page 5.2-5, Method and Threshold for Determining Significance, 2<sup>nd</sup> bullet: To the extent that the PSA relies on Appendix G to evaluate the project's potential impacts under CEQA, the Applicant would note that recent case law notes that the impacts analysis under CEQA is limited to the potential effects of the project on the environment, and not effects or risks to the project or people from the environment (South Orange County Wastewater Authority v. City of Dana Point, 196 Cal. App. 4th 1604, 1616-18 [Cal. App. 4<sup>th</sup> Dist. 2011]).

18. Page 5.2-6, 1<sup>st</sup> paragraph, 4<sup>th</sup> sentence: This study was designed to be BLM compliant. Please revise as follows:

All research was conducted in accordance with accepted assessment protocol (BLM 2008 and SVP 1995) to determine whether any known paleontologic resources exist in the general area.

19. Page 5.2-7, Geologic and Mineral Resource, last paragraph: Please consider revising:

Based on the information above, it is staff's opinion that the project would not have any potential significant adverse direct or indirect impacts ~~from the project~~ to potential geologic and mineralogic resources ~~would be low~~.

20. Page 5.2-8, 2<sup>nd</sup> paragraph, last sentence: BLM should be acknowledged in the reference since it was employed at the site. Please consider revising:

The Bureau of Land Management has developed a ~~recommended~~ potential fossil yield classification system that offers a more detailed system of evaluating the likelihood that a given geological unit may yield fossils (BLM 2008 and Chirstensen 2007).

21. Page 5.2-9, four paragraphs following Table 2: Please replace "reconnaissance" with "survey" throughout the four paragraphs following Table 2.

22. Page 5.2-10, 3<sup>rd</sup> paragraph, 1<sup>st</sup> sentence: Dry lake deposits do not typically yield fossils. Please remove "~~associated with dry lake and paleospring~~"

23. Page 5.2-10, 4<sup>th</sup> paragraph: Please use the well-referenced and scientifically controlled assessment of the site's paleontological sensitivity to address this section. Please revise as follows:

In the "Paleontology Literature and Records Review" conducted by the San Bernardino County Museum (SBCM) for this project, it was stated that "excavation into undisturbed subsurface lake and/or spring sediments in the Pahrump Valley has a high potential to impact significant paleontologic resources" (HHS 2011a, Appendix 5.8A). The SBCM review recommended monitoring of excavation in areas identified as likely to contain paleontologic resources. Staff concurs with this recommendation, although no sediments of high or moderate paleontological potential have been identified in the study area. Therefore, staff considers paleontological monitoring of construction activities ~~in accordance with the proposed Conditions of Certification~~ is unnecessary unless and until sediments with high paleontological sensitivity are identified in the project area. Proposed Conditions of Certification **PAL-1 to PAL-7** are designed to mitigate any potential paleontological resource impacts, should such sediments be encountered during construction, as discussed above, to a less than significant level. Essentially, these conditions ~~would~~ require a worker education program in conjunction with monitoring of proposed earthwork activities by qualified

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professional paleontologists (paleontologic resource specialist; PRS). Staff believes these conditions would also address the intent of the Inyo County General Plan, which places emphasis on the preservation of historic and prehistoric resources and values (HHSG 2011a §5.8-15).

24. Page 5.2-10, last paragraph, 1<sup>st</sup> sentence: Please revise as follows:

Earthwork would be halted, in the immediate area of the find, at anytime potential fossils are recognized by either the paleontological monitor or the worker.

25. Page 5.2-10, last paragraph, 4<sup>th</sup> through 6<sup>th</sup> sentences: The point of hiring a PRS is to obtain someone qualified to make determinations to changes in monitoring protocol. The last part was deleted because this is moot in a circumstance where paleontological sensitivity is low to start with. Please revise as follows:

During the monitoring, the PRS can ~~petition~~ determine changes in monitoring protocol with notification to the CEC. ~~for a change in the monitoring protocol. Most commonly, this would be a request for lesser monitoring after sufficient monitoring has been performed to ascertain that there is little chance of finding significant fossils. In other cases, the PRS can propose increased monitoring due to unexpected fossil discoveries or in response to repeated out-of-compliance incidents by the earthwork contractor.~~

26. Page 5.2-14, last sentence before Table 3: Please consider revising:

Compliance with these conditions of certification would ensure the project is built to current seismic standards and potential impacts would be mitigated to insignificant levels in accordance with current standards of engineering practice.

27. Pages 5.2-18 and 5.2-19, Cumulative Impacts, 2<sup>nd</sup> and 3<sup>rd</sup> paragraphs: The geology of the paleontological site at Stump Spring, and of the project site, are different at the most fundamental level as first illustrated in the mid-1990s by the geologists Quade, Mifflin, and their colleagues. Please revise as follows:

Paleontological resources have not been documented in the ~~general~~ area of the proposed project, and are currently known only in the immediate vicinity of Stump Spring and in sediments similar to those that are present on the site. ~~However, to date, none paleontologically sensitive sediments have been found on the plant site; the geology of the paleontological site-area is different (e.g. Quade 1995). Paleontologically sensitive sediments have been found or along limited sections of project's linear alternatives, but all within Nevada and none in California routes during cursory field studies of the HHSEGS.~~ If significant paleontological resources are uncovered during construction they would be protected and preserved in accordance with **CONDITIONS OF CERTIFICATION PAL-1 TO PAL-7**. These conditions would also mitigate any potential cumulative impacts to insignificant levels.

The proposed HHSEGS would be situated in an active geologic environment. Strong ground shaking potential must be mitigated through foundation and structural design as required by the CBC 2010. The potential for ground subsidence and fissuring must be addressed and mitigated through appropriate facility design. Expansive materials, as well as compressible soils and soils that may be subject to settlement due to dynamic compaction, must be

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addressed and mitigated in accordance with a design-level geotechnical investigation as required by the CBC 2010, and proposed **CONDITIONS OF CERTIFICATION GEN-1, GEN-5, AND CIVIL-1 UNDER FACILITY DESIGN**, which measures will mitigate such impacts to less than significant levels.

## **Findings of Fact**

28. Page 5.2-19, Findings of Fact #1: Please correct for this project:

Several ~~northwest-striking~~ active and potentially active faults are within the vicinity of the present in the project area and throughout the southeastern Peninsular Basin and Ranges Geomorphic Province as well as in the nearby Mojave Desert Geomorphic Province to the south.

29. Page 5.2-19, Findings of Fact #2: Please correct for this project:

Since no active faults are known to cross the boundary of new construction at the project site, the project is not subject to the set-back requirements mandated by the Alquist-Priolo ~~Special Studies Zone~~ Earthquake Fault Zoning Act.

30. Page 5.2-19, Findings of Fact #3: Please correct for this project:

The project site is located within ~~Seismic Zone~~ an area of California that has a potential for strong seismic shaking. As a result, the Project shall adhere to acceptable design criteria for structures with respect to seismic and load-bearing capacity per the 4, which is the most active seismic designation under the California Building Standards Code (CBSC).

31. Page 5.2-19, Findings of Fact #4: Please correct for this project:

The primary geologic hazards that could affect the project include ~~intense~~ strong levels of earthquake-related ground shaking, ~~subsidence, and settlement due to expansive clays, and settlement (due to hydrocompaction, compressible soils and dynamic compaction).~~

32. Page 5.2-19, Findings of Fact #5: The Santiago Foundation does not exist here. This text is from a different project (Carlsbad). Please revise as follows:

CONDITIONS GEN-1, GEN-4, GEN-5, AND CIVIL-1 OF THE FACILITY DESIGN section of this Decision require the project owner to conduct a site-specific geotechnical investigation, which confirms the soil profile, including composition and depth of fill materials as well as subsurface information such as groundwater depth ~~and the depth of the Santiago Foundation~~ beneath the project footprint, before project design can be finalized.

33. Page 5.2-20, Proposed Conditions of Certification, 1<sup>st</sup> paragraph, prior to start of the COC: Please revise as follows:

It is staff's opinion that the likelihood of encountering paleontologic resources would be high in areas where dry lake and paleospring deposits occur, but none have been identified to date on the project site. ~~Staff would consider reducing monitoring intensity, at the recommendation of the project PRS, following examination of sufficient, representative excavations to fully understand site stratigraphy.~~

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34. Page 5.2-21, PAL-1, Verification: If the PRS is to determine qualifications of the PRM, then the purpose of the letter is advisory and need not be provided in advance. In any case, one week in advance is unnecessarily burdensome when staffing decisions sometimes must be made within 24 hours. Please revise as follows:

**Verification:** (1) At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work.

(2) At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated paleontological resources monitors for the project, stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM no later than one week ~~after~~prior to the monitor's beginning on-site duties.

(3) Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

35. Page 5.2-22, PAL-2, Verification: Please move the Verification to after the 1<sup>st</sup> paragraph and revise as follows:

**PAL-2** The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant, construction lay down areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet and 1 inch = 100 feet range. If the footprint of the project or its linear facilities change, the project owner shall provide maps and drawings reflecting those changes to the PRS and CPM.

**Verification:** If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences on affected phases, the project owner shall notify the PRS and CPM of any construction phase scheduling changes.

During period when paleontologically sensitive sediments are being disturbed, At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent or construction field manager to confirm area(s) to be worked the following week, and until ground disturbance is completed.

**Verification:** At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM.

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If there are changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within 5 days of identifying the changes.

36. Pages 5.2-22 through 5.2-24, PAL-3: Please move the Verification to after the first paragraph. Please remove Numbers 1 and 2, as neither describe content of the PRMMP. If assurance is required (1), then that would take the form of a separate instrument. Identification of persons (2) is inappropriate for this sort of forward looking plan. That happens later and is managed by the PRS. Please revise number nine as edited below. Due to the fact that negotiations with a repository cannot be concluded and an agreement cannot be put in place until after excavations are completed for the simple reason that such institutions need to know what they are to receive before the fact.

**PAL-3** The project owner shall ensure that the PRS prepares, and the project owner submits to the CPM for review and approval, a paleontological resources monitoring and mitigation plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting, and sampling activities, and may be modified with CPM approval. This document shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM.

**Verification:** The PRMMP shall be developed in accordance with the guidelines of the Bureau of Land Management and the Society of Vertebrate Paleontology (SVP, 1995) and shall include, but not be limited, to the following:

- ~~1. Assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation will be performed according to PRMMP procedures;~~
- ~~2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the Conditions of Certification;~~
3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units;
4. An explanation of why, how, and how much sampling is expected to take place and in what units, should paleontologically sensitive sediments be identified. To the extent that it is germane to the identified sensitive sediment, include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units;

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5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling;
6. A discussion of procedures to be followed in the event of a significant fossil discovery, halting construction, resuming construction, and how notifications will be performed;
7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;
8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meet the Secretary of the Interior's and Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources;
9. Institutions identification of the that has agreed to would be approached to curate receive data and fossil materials collected, requirements or specifications for materials delivered for curation, and how they will be met, and the name and phone number of the contact person at the institution; and
10. A copy of the paleontological Conditions of Certification.

**Verification:** At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM for review and approval. The PRMMP shall include an affidavit of authorship by the PRS, and acceptance of the PRMMP by the project owner evidenced by a signature.

37. Page 5.2-24, PAL-4: Please revise as follows:

**PAL-4** Prior to ground disturbance and for the duration of construction activities involving ground disturbance, the project owner and the PRS shall prepare and conduct ~~weekly~~ CPM-approved training for the following workers: project managers, construction supervisors, foremen and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in ~~sensitive units~~ prior to receiving CPM-approved worker training. Worker training shall consist of an initial in-person PRS training during the project kick-off, for those mentioned above. Following initial training, a CPM-approved video or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. No ground disturbance shall occur prior to CPM approval of the Worker Environmental Awareness Program (WEAP), unless specifically approved by the CPM.

**Verification:** The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources.

The training shall include:

1. A discussion of applicable laws and penalties under the law;



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2. Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontologic sensitivity;
3. Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;
4. Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;
5. An informational brochure that identifies reporting procedures in the event of a discovery;
6. A WEAP certification of completion form signed by each worker indicating that he/she has received the training (see attached form); and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

**Verification:**—At least 30 days prior to ground disturbance, the project owner shall submit the proposed WEAP to the CPM for review and approval. The WEAP shall include the brochure with the set of reporting procedures for workers to follow.

At least 30 days prior to ground disturbance, the project owner shall submit the script and final video to the CPM for approval if the project owner is planning to use a video for interim training.

If the owner requests an alternate paleontological trainer, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of an alternate trainer. Alternate trainers shall not conduct training prior to CPM authorization.

In the monthly compliance report (MCR), the project owner shall provide copies of the WEAP certification of completion forms with the names of those trained and the trainer or type of training (in-person or video) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

38. Pages 5.2-25 and 5.2-26, PAL-5, Please revise as follows:

**PAL-5** The project owner shall ensure that the PRS and PRM(s) monitor consistent with the PRMMP all construction-related grading, excavation, trenching, and augering in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. In the event that the PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil-bearing in the PRMMP, the project owner shall notify and seek the concurrence of the CPM.

**Verification:** The project owner shall ensure that the PRS and PRM(s) have the authority to ~~halt or redirect construction~~ around the immediate area of the find, if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

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1. Any change of monitoring from the accepted schedule in the PRMMP shall be ~~provided~~~~proposed~~ in a letter or email from the PRS and the project owner to the CPM along with reasons for that change ~~prior to the change in monitoring~~ and will be included in the monthly compliance report. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval.
2. The project owner through the PRS shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.
3. The project owner shall ensure that the PRS notifies the CPM within 24 hours of the occurrence of any incidents of recurring non-compliance with any paleontological resources Conditions of Certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the Conditions of Certification.
4. For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours, or Monday morning in the case of a weekend event where construction has been halted because of a paleontological find.

The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities placed in the monthly compliance reports. The summary will include the name(s) of PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities, and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils. A final section of the report will address any issues or concerns about the project relating to paleontologic monitoring, including any incidents of non-compliance or any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.

~~**Verification:**~~—The project owner shall ensure that the PRS submits the summary of monitoring and paleontological activities in the MCR. When feasible, the CPM shall be notified 10 days in advance of any proposed changes in monitoring different from the plan identified in the PRMMP. If there is any unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.

39. Page 5.2-26, PAL-7: Please move Verification to directly after the 1<sup>st</sup> paragraph.

## **GENERAL CONDITIONS**

### **General Comments**

No general comments.

### **Specific Comments**

No specific comments.

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## **Findings of Fact**

There are no findings of fact in this section.

## **Conditions of Certification**

1. Page 7-20: Please add COMPLIANCE-16: Deadline for Review and Comment: Where a condition of certification provides for review and comment by any other agency of any construction related document and no deadline for review and comment is specified, the CPM or CBO shall allow 14 days from the agency's receipt of the document for the agency to submit its comments, after which the CPM may approve the subject document.

## **GROWTH INDUCING IMPACTS**

### **General Comments**

1. This section of the PSA discusses the potential growth inducing impacts of the transmission lines and gas lines located in Nevada. Any discussion of the impacts of these facilities in Nevada is in violation of CEQA. CEQA does not apply to any project or portion thereof located outside of California, which will be subject to environmental impact review pursuant to the National Environmental Policy Act of 1969 (NEPA). The transmission lines and gas lines in Nevada will be subject to an Environmental Impact Report (EIR) prepared by BLM. Therefore, all discussion of these facilities in Nevada and all discussion of the impacts of these facilities in Nevada should be deleted from this section of the Staff Analysis.
2. The PSA fails to address the relevant questions regarding growth inducing impacts. The question is not whether the project could provide infrastructure for future development. Instead, the relevant questions are whether the project will (1) eliminate or reduce existing barriers to growth, or (2) otherwise overburden existing community facilities that could require construction of new facilities. CEQA Guideline 15126.2(d).

In addition, as the PSA recognizes, the issue is not whether the project provides infrastructure, but is, instead, whether the "project provides infrastructure or service capacity to accommodate growth levels *beyond those permitted* by local or regional plans and policies"<sup>35</sup> (emphasis added).

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<sup>35</sup> Friends of the Eel River v. Sonoma County Water Agency, 108 Cal. App. 4<sup>th</sup> 859 (1<sup>st</sup> Dist. 2003) In this case the Plaintiffs argued that the agency wrongly relied upon and incorporated the general plans and general plan EIRs of the study area when assessing the growth inducing impacts of the project. The Court concluded that an agency may properly assess the growth inducing impacts beyond those already permitted by local plans. The Court stated that one must assume that these prior plans and EIRs have already considered the consequences of regional growth that has been permitted. "The agency need not do so again." 108 Cal.App.4<sup>th</sup> at 877. See, for example, Devers-Palo Verde No. 2 Transmission Line Project Colorado River Substation Expansion, Final Supplemental EIR, April 2011, p. G-1 "Typically, the growth inducing potential of a project would be considered significant if it fosters growth or a concentration of population above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Significant growth impacts could also occur if a project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies."

Also, see Ocotillo Wind Energy Facility, Final EIS/EIR, p 4.24-1: "Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a concentration of population above what is assumed in local and

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For example, the PSA describes regional plans in California for “city-scale major mixed-use development on approximately 13,000 acres in the Charleston View area.” The PSA cites no evidence that the HHSEGS would accommodate growth levels greater than this. With respect to the transmission lines that will serve the project, the PSA states that “The proposed gen-tie line...could be available to serve other projects in the region (HHSO 2011a, pg. 3-2). Both transmission line options would provide power to substations that would be utilized by other development projects in Nevada and California.” Again, however, the relevant question for CEQA is whether the “project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.” Given that local plans for the Charleston View area contemplate substantial growth, there is no evidence showing that the transmission lines or the power delivered from the project will accommodate growth levels greater than that set forth in the County General Plan. Indeed, insofar as the project will be in lieu of a currently planned residential subdivision, the project will actually reduce, rather than induce, the planned growth in population and housing in the Charleston View area.

### Specific Comments:

We do not have specific comments on a line-by-line basis. If the revision to this section eliminates discussion of the facilities and impact in Nevada and if it focuses on whether there will be an increase in infrastructure or service capacity to accommodate growth levels *beyond those permitted* by local or regional plans and policies, then the section will be substantially shorter and properly focused.

### Findings of Fact:

The findings of fact should be replaced, as follows, to reflect the previous comments:

- ~~1. The HHSEGS would involve the construction and operation of a 230 kV and/or a 500 kV electric transmission line.~~
- ~~2. HHSEGS would require a 12- to 16-inch-diameter and a 36-inch-diameter natural gas pipeline.~~
- ~~3. Both linears would be located on BLM-managed lands in Nevada and would be analyzed in a DEIS scheduled to be released in June 2012.~~
- ~~4. The electric transmission lines and gas pipelines that serve HHSEGS could provide new infrastructure that could be utilized by other development projects in Nevada and California.~~
- ~~5. The Pahrump Valley groundwater basin, which includes the Charleston View area, is currently in severe overdraft and is a serious constraint on any significant development.~~

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regional land use plans, or in projections made by regional planning authorities. Significant growth impacts could also occur if a project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.” Both of these documents provide examples of an appropriate analysis of Growth Inducing Impacts under CEQA.

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~~Current land use designations are an additional constraint on new commercial/residential development in the local area.~~

1. The HHSEGS project will not foster growth or a concentration of population above what is assumed in Inyo County land use plans or in projections made by County planning authorities.
2. The HHSEGS project will not provide infrastructure or service capacity to accommodate growth levels beyond those permitted by County plans and policies.
3. The HHSEGS project will not result in significant growth in residential housing or services. Over the long term, the HHSEGS project will have no impact on population growth, as no significant long-term increase in employment would result from project operations.
4. The proposed project is not intended to supply power related to growth for any particular development, either directly or indirectly, and would not result in direct growth inducing impacts.

**Conditions of Certification:**

There are no conditions of certification in this section of the PSA.

## HAZARDOUS MATERIALS

### General Comments

No general comments.

### Specific Comments

1. Page 4.5-5, "Step 1": The following revision to the first sentence is recommended:  
  
Staff reviewed the chemicals and amounts proposed for on-site use, as listed in ~~Tables 5.5-2 and 5.5-3~~ and 5.5.4 of the Application for Certification (AFC) (HHSEG 2011a) and Tables 5.5-2R1 and 5.5-3R1 of Supplemental Data Response Set 2 (CH2 2012p), and determined the need and appropriateness of their use.
2. Page 4.5-8, 3<sup>rd</sup> full paragraph through Page 4.5-9, 1<sup>st</sup> full paragraph: The description of the natural gas supply system has been modified. The revised description contained previously in the General Document Comments should be used.
3. Page 4.5-9, 1<sup>st</sup> full paragraph, 3<sup>rd</sup> sentence: Pigging facilities will be installed at the HHSEGS meter station and the KGRT meter station.
4. Page 4.5-10, last paragraph, first sentence: Please update the sentence to state:  
  
Staff proposes Condition of Certification HAZ-1 to ensure that no hazardous material would be used at the facility except as listed in the AFC and as revised subsequently by the Applicant, and reviewed for appropriateness, unless there is prior approval by the Energy Commission compliance project manager (CPM).

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5. Page 4.5-10, last paragraph, second sentence: Suggest rewording sentence as follows:  
Staff reviewed the chemicals and amounts proposed for on-site use, as listed in Table 5.5-3R1 of the AFC Supplemental Data Response Set 2 (CH2, 2012p) and determined the need and appropriateness of their use.
6. Page 4.5-11, first partial paragraph, last sentence: Strike the words “or require” as follows:  
If staff feels that a safer alternative chemical can be used, staff would recommend ~~or require~~ its use, depending upon the impacts posed.

## **Findings of Fact**

No findings of fact listed.

## **Conditions of Certification**

7. Page 4.5-17, HAZ-1: Suggest adding the word “Verification” to the second paragraph of HAZ-1, as follows:  
**Verification:** The project owner shall provide to the CPM in the Annual Compliance Report, a list of hazardous materials contained at the facility.
8. Page 4.5-17, HAZ-2: If the intent of this condition is to provide the HMBP to both the Southern Inyo Fire Protection District (SIFPD) and Inyo County Environmental Health Services Department (ICEHSD); suggest revising the text as follows:  
**HAZ-2** The project owner shall concurrently provide a Hazardous Materials Business Plan to the ~~Hazardous Materials Division of the~~ Southern Inyo Fire Protection District (SIFPD), Inyo County Environmental Health Services Department (ICEHSD), and the CPM for review. After receiving comments from ~~the SIFPD, Inyo County Environmental Health Services Department (ICEHSD)~~ and the CPM, the project owner shall reflect all received recommendations in the final documents. If no comments are received from the county within 30 days of submittal, the project owner may proceed with preparation of final documents upon receiving comments from the CPM. Copies of the final Hazardous Materials Business Plan shall then be provided to the ICEHSD and the Southern Inyo Fire Protection District for information, and to the CPM for approval.
9. Page 4.5-17, HAZ-2: Suggest adding the word “Verification” to the second paragraph of HAZ-2, as follows. In addition, submittal of a final HMBP 30 days prior to receipt of hazardous materials on the site should be sufficient, since the CPM will already have reviewed a draft HMBP:  
**Verification:** At least ~~60~~ 30 days prior to receiving any hazardous material on the site for commissioning or operations, the project owner shall provide a copy of a final Hazardous Materials Business Plan to the CPM for approval.
10. Page 4.5-17, HAZ-3: A Safety Management Plan should only be required for hazardous materials that are delivered ~~in bulk~~ in large quantities, not for smaller containers of

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materials such as totes or paints. In addition, 30 days should be sufficient time for the CPM to review the plan. Suggest that HAZ-3 be revised as follows:

**HAZ-3** The project owner shall develop and implement a Safety Management Plan for delivery of liquid hazardous materials by tanker truck. The plan shall include procedures, protective equipment requirements, training and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of incompatible hazardous materials. This plan shall be applicable during construction, commissioning, and operation of the power plant.

**Verification:** At least ~~sixty thirty~~ (60)30 days prior to the delivery of ~~any~~ bulk liquid hazardous material to the facility, the project owner shall provide a Safety Management Plan as described above to the CPM for review and approval.

11. Page 4.5-18, last paragraph of HAZ-4: Suggest adding the word “Verification” to the last paragraph of HAZ-4.

**Verification:** At least thirty (30) days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan is available for review and approval.

12. Page 4.5-18, HAZ-5, first paragraph: Suggest revising HAZ-5 as follows:

**HAZ-5** The project owner shall prepare a site-specific Operation Security Plan for the operational phase ~~and that~~ shall be made available to the CPM for review and approval. The project owner shall implement site security measures addressing physical site security and hazardous materials storage.

13. Page 4.5-18, HAZ-5: Suggest moving the following text from page 4.5-19 and placing it after the second sentence in the first paragraph of HAZ-5 on Page 4.5-18:

**Verification:** At least 30 days prior to the initial receipt of hazardous materials on-site for operations, the project owner shall notify the CPM that a site-specific Operations Site Security Plan is available for review and approval. In the Annual Compliance Report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and updated certification statements are appended to the Operations Security Plan. In the Annual Compliance Report, the project owner shall include a statement that the Operations Security Plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

The level of security to be implemented shall not be less than that described below (as per NERC 2002<sup>36</sup>).

The Operation Security Plan shall include the following:

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<sup>36</sup> North American Electric Reliability Council, [www.nerc.com/files/V1-Communications.pdf](http://www.nerc.com/files/V1-Communications.pdf)



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1. Permanent full perimeter fence or wall, at least eight feet high around the Power Block and Solar Field;
2. Main entrance security gate, either hand operable or motorized;
3. Evacuation procedures;
4. Protocol for contacting law enforcement, and the CPM in the event of suspicious activity or emergency;
5. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site;
6.
  - a. A statement (refer to sample, attachment "A") signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to ascertain the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy;
  - b. A statement(s) (refer to sample, attachment "B") signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner) that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractor personnel that visit the project site. Background investigations shall be restricted to ascertaining the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy.
7. Site access controls for employees, contractors, vendors, and visitors;
8. Closed Circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if separate from the control room) capable of viewing, at a minimum, the main entrance gate; and
9. Additional measures to ensure adequate perimeter security consisting of either:
  - a. Security guard present 24 hours per day, seven days per week, **OR**
  - b. Power plant personnel on-site 24 hours per day, seven days per week and **one** of the following:
    - 1) The CCTV monitoring system required in number 8 above shall include cameras that are able to pan, tilt, and zoom (PTZ), have low-light capability, are recordable, and are able to view 100% of the perimeter fence to the power block, the outside entrance to the control room, and the front gate from a monitor in the power plant control room; **OR**
    - 2) Perimeter breach detectors or on-site motion detectors for the power block.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to the security plans. The CPM may authorize modifications to

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these measures, or may require additional measures, such as protective barriers for critical power plant components (e.g., transformers, gas lines, compressors, etc.) depending on circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Council, after consultation with appropriate law enforcement agencies and the ~~applicant~~ project owner.

~~At least 30 days prior to the initial receipt of hazardous materials on-site, the project owner shall notify the CPM that a site-specific Operations Site Security Plan is available for review and approval. In the Annual Compliance Report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and updated certification statements are appended to the Operations Security Plan. In the Annual Compliance Report, the project owner shall include a statement that the Operations Security Plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.~~

14. Page 4.5-20, HAZ-6: Suggest revising HAZ-6 Verification as follows:

**Verification:** At least 30 days before any fuel gas pipe cleaning activities conducted onsite involving fuel gas pipe of four-inch or greater external diameter, the project owner shall submit a copy of ~~the~~ a Fuel Gas Pipe Cleaning Work Plan which shall indicate the method of cleaning to be used, what gas will be used, the source of pressurization, and whether a mechanical PIG will be used, to the CBO for information and to the CPM for review and approval.

## LAND USE

### General Comments

The Applicant recognizes that the PSA's Land Use discussion is based, at least in part, on comments received from Inyo County regarding land use compatibility. We also recognize that the Commission will give due deference to the comments of local agencies regarding interpretation of applicable local land use laws, ordinances, regulations, and standards (LORS), consistent with the Commission's past practices. Since the filing of the AFC, the Applicant has been in discussions with Inyo County, seeking to build a positive, cooperative relationship. As a result, the Applicant has, to date, focused on strengthening that relationship and not on the Applicant's position regarding land use consistency.

As mentioned in several public meetings and as discussed in this section, the Applicant has always maintained that, based on the factual record, the Commission can find the HHSEGS project to be consistent with local land use LORS—without need for any General Plan Amendment or Rezone.

In valuing and seeking to advance its relationship with the County, the Applicant has not previously articulated the legal basis for its position that the HHSEGS project is consistent with local land use LORS. However, because the comment period on the PSA is the last public

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comment period prior to the issuance of the FSA, the Applicant finds it necessary to outline its position regarding land use issues, as set forth as follows.

1. The PSA should find that the project is compatible with surrounding land uses.

Private and public lands in the Charleston View area have, since at least 2009, been consistently identified by Inyo County as an “excellent location” and “appropriate” for solar energy development.<sup>37</sup> For example, in July 2009, Inyo County submitted comments on the Bureau of Land Management (BLM) and Department of Energy’s (DOE) Solar Programmatic Environmental Impact Statement (Solar PEIS) process encouraging those federal agencies to consider areas in Inyo County suitable for the establishment of a solar energy zone (SEZ), including the BLM lands surrounding the HHSEGS site.<sup>38</sup> Moreover, in October 2009, the Inyo County Board of Supervisors submitted comments on the Renewable Energy Transmission Initiative (RETI) identifying numerous areas in Inyo County as suitable for solar energy development.<sup>39</sup> That same month, Inyo County also submitted comments in the Desert Renewable Energy Conservation Plan process, including a map, designating the Charleston View area, including the HHSEGS project site, as a potential Competitive Renewable Energy Zone (CREZ).<sup>40</sup> Subsequent County comments on the Desert Renewable Energy Conservation Plan reiterated Inyo County’s position that the Charleston View area is appropriate for renewable energy development.<sup>41</sup> Other Inyo County’s comments in the Solar PEIS proceeding argue that failure to consider renewable energy development on BLM lands in Inyo County would be inconsistent with Inyo County’s General Plan.<sup>42</sup>

In April 2011, approximately 4 months prior to the filing of the AFC of the HHSEGS, Inyo

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See draft Inyo County draft proposed CREZ areas submitted to the CEC in 2009, [http://www.energy.ca.gov/reti/steering/workgroups/phase2A\\_update/2009-11-19\\_meeting/RETI\\_Paper\\_Attachment\\_2009-11-19.pdf](http://www.energy.ca.gov/reti/steering/workgroups/phase2A_update/2009-11-19_meeting/RETI_Paper_Attachment_2009-11-19.pdf); Report by Inyo County to RETI Steering Group in Nov. 2009, available at [http://www.energy.ca.gov/reti/steering/workgroups/phase2A\\_update/2009-11-19\\_meeting/RETI\\_Paper\\_2009-11-19.pdf](http://www.energy.ca.gov/reti/steering/workgroups/phase2A_update/2009-11-19_meeting/RETI_Paper_2009-11-19.pdf); Comments Regarding RETI Phase 2B Report Update from Mike Conklin, Inyo County Planning Department Director (April 23, 2010) (requesting that the proposed Charleston View Competitive Renewable Energy Zones (CREZ) be incorporated into Renewable Energy Transmission Initiative (RETI) and other renewable energy planning efforts ), available at [http://www.energy.ca.gov/reti/documents/phase2B/comments/2010-04-26\\_Inyo\\_County.pdf](http://www.energy.ca.gov/reti/documents/phase2B/comments/2010-04-26_Inyo_County.pdf); and see Inyo County Renewable Energy Overlay Map, August 2010, included for the BOS consideration in the adoption of Title 21 [http://www.inyoPlanning.org/documents/RenewEnergyARF8-10\\_002.pdf](http://www.inyoPlanning.org/documents/RenewEnergyARF8-10_002.pdf).

Letter from Supervisor Beverly A. Brown, Chairperson, RE: PEIS Solar Energy Scoping Process (July 28, 2009), available at [http://solareis.anl.gov/involve/mapcomments/dsp\\_commentlist.cfm?organization=Inyo%20County%20Board%20of%20Supervisors](http://solareis.anl.gov/involve/mapcomments/dsp_commentlist.cfm?organization=Inyo%20County%20Board%20of%20Supervisors).

Letter from Supervisor Beverly A. Brown, Chairperson to Andy Horne, California State Association of Counties and Joe Bertotti, Regional Council of Rural Counties, RE: Renewable Energy Transmission Initiative (Final Phase 2A Report) (Oct. 20, 2009), available at <http://www.inyoPlanning.org/documents/RenewLtrCA-SAC10.20.09.pdf>; also see <http://www.inyoPlanning.org/documents/RenewLtrCA-SAC10.20.09.pdf> and <http://www.inyoPlanning.org/documents/RE-DRECP11-9-10.pdf>.

See, for example, Letter from Mike Conklin, Inyo County Planning Department Director, RE: Draft Planning Agreement for the Desert Renewable Energy Conservation Plan Docket No. 09-Renew EO-01 (Nov. 16, 2009), available at <http://www.inyoPlanning.org/documents/RE-DRECP11-9-10.pdf>; Letter from Mike Conklin to Robert R. Copper, Director, RE: Desert Renewable Energy Conservation Plan Conservation Area Starting Points (March 31, 2010), available at [http://www.energy.ca.gov/33by2020/documents/2010-03-23\\_meeting/comments/Inyo\\_County\\_Letter\\_Regarding\\_Conservation\\_Area\\_Starting\\_Points\\_TN-56104.pdf](http://www.energy.ca.gov/33by2020/documents/2010-03-23_meeting/comments/Inyo_County_Letter_Regarding_Conservation_Area_Starting_Points_TN-56104.pdf).

Letter from Susan Cash, Chairperson, RE: Draft Solar PEIS (March 29, 2011), available at <http://www.inyoPlanning.org/documents/PEISBOSltr-3.29.11.pdf>.

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County adopted the Renewable Solar and Wind Energy General Plan Amendment commonly known as “REGPA.” The REGPA created a series of renewable energy “overlay” areas in Inyo County. The stated purpose of these overlay areas was to *limit* the areas in Inyo County available for renewable energy developments by identifying the areas in Inyo County that were “most appropriate” for solar and wind renewable energy development.<sup>43</sup> Charleston View, which is where the project is located, remained one of the areas in Inyo County open for development for renewable energy purposes under the REGPA.<sup>44</sup> Indeed, the effect of the “overlay” areas enacted by the REGPA was to expressly permit development of renewable energy projects in Charleston View, subject to environmental review and all other applicable laws.<sup>45</sup> Thus, at the time the HHSEGS’s AFC was filed with the Commission, the HHSEGS project was located within a designated renewable energy zone and, therefore, was consistent with the Inyo County General Plan as amended by the REGPA. Although the REGPA was ultimately rescinded by the County in September 2011 in response to legal challenge, its adoption—along with the County planning history dating back to 2009—demonstrates that the County has long viewed the project site as suitable for renewable energy development as a matter of public policy. The PSA should account for this planning history in its analysis of the projects land use impacts.

Despite the County’s long history of planning for renewable energy development on and around the project site, the PSA finds that the project would be incompatible with, and could have a significant and unavoidable impact on, surrounding land uses because the power towers “cannot be screened from the adjacent residents or the public that use the various recreational and wilderness areas within California and Nevada” (PSA, Page 4.6-21). First, this purported impact should be treated, if anything, as a potential visual impact, not as a land use impact. Moreover, it does not logically follow that a project is incompatible with surrounding land uses simply because it can viewed from the surrounding land. The PSA includes no evidence demonstrating that the mere sight of the project from surrounding land would result a significant impact on the use of such land. Similarly, it does not logically follow that the mere sight of the project from recreation areas will impede the use of those areas for recreational purposes. The PSA includes no evidence that sight of the project from recreational areas would limit their recreational value. Accordingly, the PSA’s conclusions regarding these impacts are arbitrary and unsupported by substantial evidence in the record.

2. The PSA should find that renewable energy generation on the project site is a use consistent with the Inyo County General Plan.

Prior to December 2004, the HHSEGS site was designated predominately as Open Space and Recreation (OSR), with a few parcels (those composing the common area) designated as Resort/ Recreational (REC), as depicted on Inyo County General Plan Land Use Diagram 29.<sup>46</sup> This changed on December 7, 2004, however, when the Inyo County Board of Supervisors

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Resolution 2011-17 Adopting REGPA, <http://www.inyoplanning.org/documents/REGPA-Resol2011-17.pdf>  
<http://www.inyoplanning.org/documents/REGPA-F.CharlestonV.pdf>  
Resolution 2011-17 Adopting REGPA.  
[http://www.inyoplanning.org/general\\_plan/graphics/landuse/Diag29.pdf](http://www.inyoplanning.org/general_plan/graphics/landuse/Diag29.pdf)

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amended the Inyo County General Plan with its adoption of Resolution No. 2004-61, which action is final and unappealable.<sup>47</sup> Per Resolution 2004-61, *all* privately owned parcels currently then designated Natural Resource and Open Space Recreation were re-designated as Rural Protection.<sup>48</sup> Thus, per Resolution 2004-61, that portion of the project site formerly designated as OSR—the vast majority of the project site—was redesignated as Rural Protection or “RP.”

The RP General Plan designation specifically provides for “. . . the managed production of resources...” on generally 40-acre parcels.<sup>49</sup> Policy GOV-10.1 of the Inyo County General Plan provides that “renewable energy sources,” such as solar, are to be treated as “natural resources” by the County.<sup>50</sup> The HHSEGS will provide for the managed production of 500 megawatts (net) of solar energy, a County natural resource of the County, as identified by the General Plan. The project site parcels designated as RP are all a minimum of 40 acres. Accordingly, the managed production of renewable energy on those portions of the project site designated as RP is a land use consistent with the General Plan. The PSA should be revised to reflect this fact.

The HHSEGS project is also a land use consistent with that small portion of the project site designated by the General Plan as REC. Per General Plan Policy LU-3.4, the REC land use designation allows for “... public and quasi-public uses ... .”<sup>51</sup> Furthermore, General Plan

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Resolution 2004-61, A Resolution of the Board of Supervisors of the County of Inyo, State of California, Adopting Negative Declarations of Environmental Impact Concerning, Making Certain Findings With Respect to, And Approving, General Plan Amendment 2004-06/Inyo County Which Changes Policy LU-5.5, Natural Hazards Designation, Adds Policy LU-2.95, Rural Protection Designation, and Which Changes Table 4-1 and Applies Those Additions and Changes to Certain Parcels (Dec. 7, 2004), available at [http://www.inyoplanning.org/general\\_plan/documents/GPA-NatHaz.pdf](http://www.inyoplanning.org/general_plan/documents/GPA-NatHaz.pdf) (“Resolution 2004-61”).

Resolution 2004-61, p. 2.

Resolution No. 2004-61, p. 1; Inyo County General Plan LU-2.95.

Specifically, Policy Gov-10.1 provides: “Development of energy resources on both public and private lands be encouraged with the policies of the County to develop these energy resources within the bounds of economic reason and sound environmental health. Therefore, the Board supports the following policies.

- a. The sound development of any and all energy resources, including, but not limited to geothermal, wind, biomass, and solar.
- b. The use of peer-reviewed science in the assessment of impacts related to energy resource development.
- c. The development of adequate utility corridors necessary for the transmission of newly generated energy.
- d. Maintain energy opportunities on state and federal lands maintaining and expanding access
- e. Treat renewable energy sources as natural resources, subject to County planning and environmental jurisdiction. Consider, account for, and mitigate ecological, cultural, economic, and social impacts, as well as benefits, from development of renewable energy resources. Consider developing environmental and zoning permitting processes to ensure efficient permitting of renewable energy projects while mitigating negative impacts to county services and citizens, with a goal to ensuring that citizens of the County benefit from renewable energy development in the County.”

Inyo County General Plan, Policy LU-3.4 provides, “this designation provides for a mixture of residential and recreational commercial uses, such as resorts, recreational facilities, motels, campgrounds, trailer parks, restaurants, general stores, service stations, and similar and compatible uses. This designation is oriented toward tourist use, however, it also permits permanent residential use and public and quasi-public uses. The FAR shall not exceed 0.40. The base residential density shall be 1 du/25 acres. Clustering of residential units is encouraged, with density of developed area allowed up to 24 du/net acre. [New]”

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Policy LU-2.16 includes “utility system components” in its description of “public, quasi-public, and supporting uses.” Electric generation is a component of a utility system. The PSA should be revised to reflect this fact.

3. The PSA should find the project is consistent with the Inyo County Code.

As explained as follows, the project is consistent with Title 18 and Title 21 of the County Code:

- A. The project is consistent with Title 18.

According to the PSA, the project is inconsistent with Title 18 and, therefore, would require a rezone. Specifically, the PSA concludes that, while large solar projects are not identified as an allowed use in any one zoning district, the HHSEGS is not a permitted use within the OS-40 zoning district applicable to the project site. This PSA conclusion is inaccurate.

The OS-40 zoning designation is intended to implement the land use policies and goals for the open space designation in the Inyo County General Plan. Renewable energy facilities such as the HHSEGS are not listed as a permitted or conditional use in any zoning district. Where a specific use is not listed in the Inyo County Zoning Ordinance, County Code Section 18.81.020 provides that the characteristics of the use in question are compared with the listed uses permitted in the relevant zoning district to determine if the use is of the same character as a permitted or conditional use in any zoning district. Therefore, to determine whether the HHSEGS is a use consistent with the OS-40 zoning designation, the Commission must compare the characteristics of the use in question, a renewable energy facility, to the listed uses permitted in the OS-40 designation to determine if the proposed use is of the same character as a permitted or conditional use in that zoning district.

In this case, the OS-40 open space zoning designation applicable to the project site allows the mining and processing of natural resources as a conditionally permitted use. As explained previously, the Inyo County General Plan provides that solar resources are to be treated as natural resources of Inyo County. Use of the HHSEGS project site for the processing of solar resources for the production of renewable energy is of the same character of use as the mining and processing of natural resources permitted in OS-40 districts. Therefore, because the HHSEGS is of the same character as a use permitted in the OS-40 district, HHSEGS is a use consistent with the OS-40 zoning designation applicable to the project site.

- B. The project is consistent with Title 21.

The PSA states that the project is not in compliance with Title 21 because the project is not consistent with the Inyo County General Plan. As stated previously, however, the HHSEGS is consistent with the Inyo County General Plan. Thus, a non-existent General Plan inconsistency cannot serve as a basis for the PSA’s finding of Title 21 non-compliance.

The PSA also states that the project must either apply for a zone reclassification, or in lieu of a rezone, apply for Renewable Energy Development Agreement or Renewable Energy Permit from Inyo County. However, given that a Renewable Energy Development Agreement and Renewable Energy Permit are discretionary approvals that are preempted



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by the Warren-Alquist Act, Applicant is not required to “comply” with Title 21 by obtaining a Renewable Energy Development Agreement or Renewable Energy Permit from the County. Therefore, the project cannot be found inconsistent with Title 21 on the basis that the project has not applied for discretionary permits, which are preempted by the Commission, from the local agency.

Rather, if the Commission determines that Title 21 is applicable, the Commission will “stand in the shoes” of Inyo County in applying the requirements of a renewable energy permit. It is Applicant’s understanding that the permitted use provisions, the conditional use provisions, and the development standards of the OS-40 designation would not apply under Title 21. Specifically, Title 21 of the Inyo County Code states that the following provisions of the Inyo County Zoning Ordinance do not apply to a solar thermal power plant that either (1) obtains a renewable energy permit or (2) enters into a development agreement with Inyo County:

- Permitted, conditional, and/or accessory uses related to a facility and its accessory uses and structures
- Distance between buildings
- Height, density, and intensity
- Light and glare
- Noise
- Wireless communications facilities directly related to the facility

Therefore, the Commission acting in Inyo County’s stead, will be responsible for determining the appropriate standards of development for the project.

Given that the Commission has not yet stated what standards will be applied if the Commission implements Title 21, Applicant is not clear as to how the project can be deemed inconsistent with those standards. In any case, as stated previously, given that the project is consistent with the Inyo County General Plan, the HHSEGS is consistent with Title 21.

4. The PSA should not require “financial assurances” any greater than the assurances required of other projects that have been licensed by the Commission. This condition should be deleted.

It is well settled that it has been unnecessary for the Commission to require bonding or other forms of security as a condition of constructing a plant licensed by the Commission. The Commission has previously rejected requests for bonds or other securities for decommissioning or site closure. As the Commission has found with all other facilities certified by it, there is no significant risk of default, the Applicant has more than sufficient resources to restore the site and the salvage value of the plant alone is more than sufficient to offset the costs of site restoration. Indeed, enforceable measures are already proposed (see, for example, COMPLIANCE-11) that will ensure proper decommissioning of the project. Such condition adequately addresses the substantive requirement of Title 21 relating to project site restoration. Therefore, LAND-1 should be deleted.

The PSA states that financial assurances will be required of HHSEGS “as part of Title 21 entitlements.” However, because certification by the Commission is in lieu of any permit,



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certificate, or similar document required by any state, local, or regional agency for the facility and use of the site, Applicant will not receive any entitlements pursuant to Title 21. Instead, Applicant will be receiving permission to construct and operate the HHSEGS project pursuant to the Warren-Alquist Act, not Title 21 of the Inyo County Code. Therefore, because there are no Title 21 entitlements to be issued to the project, there should be no financial assurances required of the project that are any different or greater than that required of other projects licensed by the Commission.

5. The PSA should find that there are noteworthy public benefits to land use from the project.

The PSA incorrectly states that HHSEGS would not yield any noteworthy public benefits relating to land use. The PSA fails to recognize that HHSEGS will put previously disturbed private lands, where previous attempts at development have failed, to productive use. Putting the land to productive use will increase property tax revenues for Inyo County, will attract new visitors to the area and may encourage general improvement of the neighborhood.

### **Specific Comments**

6. Page 4.6-1, Introduction, 2nd paragraph, last sentence: Add the following phrase to the end of the sentence: "Land use impacts associated with the portions of the project in Nevada will be analyzed in a separate environmental analysis prepared by the Bureau of Land Management pursuant to the National Environmental Policy Act (NEPA) and are exempt from CEQA pursuant to Public Resources Code §21080(b)(14)."
7. Pages 4.6-2, 4.6-10 and 4.6-11, Land Use Tables 1 and 2, Applicable LORS: References to the California Subdivision Map should be struck from both tables, and the Land Use section in general, as the Subdivision Map Act is not a LORS applicable to the project.
8. Page 4.6-2, Project Site, 3<sup>rd</sup> sentence: Please designate the communities as the "two closest California communities."
9. Page 4.6-3, 2<sup>nd</sup> paragraph, 3<sup>rd</sup> sentence: Please remove "landscaping," as there is no landscaping in the common area, only along Tecopa Road.
10. Page 4.6-3, 3<sup>rd</sup> paragraph, 2<sup>nd</sup> sentence: Please also mention the orchard.
11. Page 4.6-4, Natural Gas Pipeline, 1<sup>st</sup> paragraph: This paragraph should be revised to reflect the updated gas pipeline size and alignment information submitted as a part of Applicant's PSA comments.
12. Page 4.6-4, Surrounding Area, 2<sup>nd</sup> paragraph, last sentence: The following sentence should be deleted as it is not relevant to land use. The "use" is residential. Whether the occupant of the residence is lawfully occupying the property is not relevant to "land use" issues defined by CEQA.: ~~"In addition to permanent residents, Inyo County's Director of Health and Human Services indicates there exist a number of squatters on various lots throughout Charleston View area."~~
13. Page 4.6-5, Surrounding Area, 3<sup>rd</sup> bullet: Please insert the following sentence after the first sentence: "There are also private inholdings within these BLM lands."

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14. Page 4.6-5, Surrounding Area, 3<sup>rd</sup> bullet, last sentence: The St. Therese Mission facility is also under construction to the east of the project and should be identified in this section.
15. Page 4.6-5, General Plan Land Use, 1<sup>st</sup> paragraph: This section should discuss more thoroughly Inyo County's Renewable Wind and Solar Energy General Plan Amendment, why Inyo County viewed Charleston View as an area suitable for solar development, and the General Plan Overlays in place at the time the application for certification was filed, as detailed previously. This section should also be revised to discuss the Rural Protection land use designation and the 2004 amendment of the General Plan.
16. Page 4.6-6, Surrounding Area: There are also surrounding parcels designated as Rural Protection, which designation permits the managed production of natural resources, including solar resources.
17. Page 4.6-10, Land Use Table 2 – LORS, California Subdivision Map Act: As stated previously, references to the California Subdivision Map Act should be deleted, because it is not an applicable LORS. While the Subdivision Map Act specifies the procedures for merger of a parcel, the Act does not require merger.
18. Page 4.6-10, Land Use Table 2 – LORS, Inyo County General Plan: It should be noted that the Inyo County General Plan, other than stating that the County's renewable energy resources are to be treated as the County's natural resources, is silent as to the land use designation that would be appropriate for renewable energy projects. Previous statements by Inyo County have indicated that the Project site is suitable for renewable energy development, and that the siting of renewable energy facilities is consistent with the Inyo County General Plan.  
  
It is the County's recent position in this proceeding that has stated that siting renewable energy projects in that area is contrary to the County's General Plan.
19. Page 4.6-10, Land Use Table 2 – LORS, Chapter 3 Government Element Goal Gov – 10: Energy Resources Policy Gov-10.1: Development: This policy provides that "Development of energy resources on both public and private lands be encouraged with the policies of the County to develop these energy resources within the bounds of economic reason and sound environmental health," and provides a list of policies that the Inyo County Board of Supervisors should support. Because the HHSEGS will involve the development of energy resources on private lands, and the policy states that such development should be encouraged, the HHSEGS is in fact consistent with this policy.
20. Page 4.6-10, Land Use Table 2 – LORS, Chapter 3 Government Element Goal Gov – 10: Energy Resources Policy Gov-10.1: Development: This policy does not speak to consistency with the General Plan and zoning code, but provides broad policy statements for the encouragement of renewable energy development in Inyo County. Table-2 should be revised to reflect that the HHSEGS is consistent with this policy.
21. Page 4.6-10, Land Use Table 2 – LORS, Chapter 4 Land Use Element Commercial, Goal LU-3: As noted in the summary of the uses provided for in the General Plan designation "Resort/Recreational", "public and quasi public uses" are specifically provided for in this land use designation. However, the consistency determination in the PSA does not address

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the HHSEGS's consistency with the REC designation as a public/quasi-public uses. Table 2, and the corresponding analysis in the Land Use section, should be revised to reflect that both Commission precedent and the Inyo County General Plan provide that power plants constitute a public/quasi-public use. As a public/quasi-public use, the HHSEGS is therefore consistent with this land use designation of the Inyo County General Plan.

22. Page 4.6-11, Land Use Table 2 – LORS, Chapter 4 Land Use Element Commercial, Goal LU-5: The County has previously supported renewable energy development in the Charleston View area, and found that the adoption of a renewable energy overlay in this designation to be compatible with the Inyo County General Plan. Moreover, the PSA is incorrect as to the project site's General Plan land use designation. As described previously, County Resolution 2004-61 amended the General Plan to re-designate the project site from Open Space (OS) to Rural Protection (RP), which designation permits the managed production of resources, including solar resources, as described previously. The PSA's discussion of the General Plan should delete all references to the OS designation, as it no longer applies to the project site.
23. Page 4.6-11, Land Use Table 2 – LORS, Zoning Ordinance of the County of Inyo – Title 18: The PSA should recognize that the Inyo County zoning ordinance is completely silent as to renewable energy projects. If a proposed use is not contemplated in the zoning ordinance, the County typically looks at other uses allowed in the zoning district, to determine whether the proposed use is of the same character as uses listed in that district. In this case, the HHSEGS is of the same character as a use permitted in the OS-40 zoning district, the mining and processing of natural resources, so as to be consistent with the zoning code.
24. Page 4.6-12, 3rd paragraph, last sentence: Please replace "OSR" with "RP."
25. Page 4.6-12, 6th paragraph, last sentence: Please replace "OSR" with "RP."
26. Page 4.6-13, 1<sup>st</sup> paragraph, 1st sentence: Applicant disagrees with the PSA's characterization of whether renewable energy facilities are permitted uses in certain General Plan land use designations. It is important to note that the General Plan is silent as to the land use designations which would permit renewable energy facilities, and that such facilities are not identified as permitted or unpermitted uses in any land use designation. Because the General Plan is silent as to this issue, the County undertook the process to amend the General Plan to address renewable energy projects. Moreover, as stated previously, in terms of the REC land use designation, renewable energy facilities are appropriately considered a public/quasi-public use permitted in the REC land use designation, consistent with previous Commission decisions and the Inyo County General Plan.
27. Page 4.6-13, County of Inyo Zoning Ordinance, 1<sup>st</sup> sentence: The Inyo County zoning code is silent as to renewable energy facilities; therefore, please revise the sentence as follows:  
"The County of Inyo Zoning Code does not expressly identify large solar projects as an allowed use in any existing zoning district."

Please delete the 4<sup>th</sup> sentence since the Traffic and Transportation Glint and Glare analysis does not require additional set back for glint and glare: ~~In addition a larger setback may be necessary if it is determined that the glint and glare from the project would have adverse impacts to drivers on Tecopa Road and nearby residents.~~

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28. Page 4.6-15, 1<sup>st</sup> paragraph: The PSA should be revised to make clear that a PUD, development agreement, and/or permit are applicable only where the County has permitting authority, and are not options for the HHSEGS because of the Commission's exclusive jurisdiction over the project.
29. Page 4.6-16, 2<sup>nd</sup> paragraph: Please delete this paragraph. The Surface Mining and Reclamation Act and BLM requirements are not applicable LORS.
30. Page 4.6-16, 3<sup>rd</sup> paragraph: Please delete this paragraph. It is pure speculation and documents prepared by the membership organizations are not applicable LORS.
31. Page 4.6-16, 4<sup>th</sup> paragraph: Please delete this paragraph. County has no authority to require security where CEC has exclusive jurisdiction.
32. Page 4.6-16, Other Considerations, 1<sup>st</sup> paragraph: Please revise the second sentence as follows: "There appears to be some nonexclusive easements for utilities and roadway uses associated with those parcels that were conditionally offered for dedication to Inyo County."
33. Page 4.6-16, Other Considerations, 1<sup>st</sup> paragraph: Please add the following sentence immediately following the second sentence of this paragraph: "There is no evidence in the record that Inyo County ever formally accepted the nonexclusive easements offered for dedication when the property was subdivided."
34. Page 4.6-17, 1<sup>st</sup> full paragraph: Please delete this paragraph as it is inaccurate.
35. Page 4.6-17, 2<sup>nd</sup> full paragraph: Please add the following sentence immediately prior to the last sentence of this paragraph: "Applicant disputes County's claims in their entirety."
36. Page 4.6-20, 4<sup>th</sup> full paragraph (starting with "Regardless"): This paragraph should be deleted. The County has no jurisdiction. The County's permitting process is irrelevant.
37. Page 4.6-20, 5<sup>th</sup> full paragraph, 1<sup>st</sup> sentence: What "findings" does this sentence refer to? The County has not made any "findings" about the project.
38. Page 4.6-21, 3<sup>rd</sup> paragraph, 3<sup>rd</sup> sentence: Please revise this sentence for accuracy. The BLM lands in Nevada adjacent to the site is not designated wilderness area.
39. Page 4.6-21, 4<sup>th</sup> paragraph, 3<sup>rd</sup> sentence: Please revise for accuracy. There are no residences adjacent to the project site.
40. Page 4.6-21, 5<sup>th</sup> paragraph: Please delete this paragraph as it describes visual impacts, not land use impacts, and therefore this discussion is irrelevant to the land use impact analysis.
41. Page 4.6-22, Military Special Use Airspace: This section should be revised to state that the Department of Defense has reviewed the project, and concluded that the project will not have any military mission impacts.
42. Page 4.6-28, Noteworthy Public Benefits: At the very least, this section should also note that the project puts land to productive use, provides jobs, and increases the tax base in southern Inyo County, in addition to addressing state and federal renewable energy goals.

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## **Findings of Fact**

43. Revise Findings of Fact #2 to state the following:

Inyo County staff has determined that a solar thermal power plant is not an allowed use in the "Open Space and Recreation" and "Recreation" general plan designations and the "Open Space" zone.

44. Revise Findings of Fact #3 to state the following:

45. The HHSEGS facility will not conform with applicable provisions of the Inyo County general plan, zoning code and renewable energy ordinance.

## **Conditions of Certification**

46. The PSA states that proposed Condition of Certification LAND-1 is required to ensure consistency with Title 16 of the Inyo County Code and to ensure site control. First, Title 16 of the Inyo County Code is not applicable to the project. Second, the Commission has determined in previous decisions that lease agreements with private property owners establishes site control, particularly where, as here, the parcels cannot be separately conveyed in a way that would interfere with project operations or ownership. Therefore, LAND-1 should be deleted.

47. There is no relationship between LAND-2, which requires bonds or other financial assurances be paid to the Energy Commission to ensure restoration of the project site to pre-project conditions, and a *land use* impact caused by the project. Imposition of a bonding requirement is also inconsistent with long-standing Commission practice of not requiring bonding or additional financial assurances of project applicants for decommissioning activities. Furthermore, enforceable measures relating to closure and decommissioning of the HHSEGS are already proposed (see, for example, COMPLIANCE-11) that will ensure proper decommissioning of the project. Therefore, for all of the reasons state previously, LAND-2 should be deleted.

## **NOISE AND VIBRATION**

### **General Comments**

See the previous General Document Comments about project setting and project size of 3,096 acres.

### **Specific Comments**

No specific comments.

### **Findings of Fact**

No comments on the findings of fact.

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**Conditions of Certification**

1. Page 4.7-13, NOISE-1: Since there are no offsite linear facilities in California, please revise NOISE-1 as follows:

**NOISE-1** ~~At least 15 days prior to the start of ground disturbance, the project owner shall notify all residents within one mile of the project site boundaries and 1/2 mile of the linear facilities, by mail, or by other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed 24 hours a day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction where it is visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.~~

**Verification:** ~~At least 15 days prior to ground disturbance, the project owner shall transmit to the compliance project manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed, and describing the method of that notification. This communication shall also verify that the telephone number has been established and posted at the site, and shall provide that telephone number.~~

2. Pages 4.7-13 and 14, NOISE-2: The Applicant does not see any need or benefit in filing a copy of the Noise Complaint Resolution Form with the County. Therefore, please revise NOISE-2 as follows:

**NOISE-2** Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints.

**Verification:** The project owner or authorized agent shall:

- use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- attempt to contact the person(s) making the noise complaint within 24 hours;
- conduct an investigation to determine the source of noise in the complaint;
- if the noise is project related, take all ~~practicable~~ feasible measures to reduce the source of the noise; and
- submit a report documenting the complaint and actions taken. The report shall include: a complaint summary, including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant, stating that the noise problem has been resolved to the complainant's satisfaction.

**Verification:** ~~Within five days of receiving a noise complaint, the project owner shall file a Noise Complaint Resolution Form, shown below, with both the local jurisdiction and the~~

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CPM that documents the resolution of the complaint. If mitigation is required to resolve the complaint, and the complaint is not resolved within a three-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented~~performed and complete~~.

3. Page 4.7-14, NOISE-3: The Applicant has no comments to NOISE-3.
4. Pages 4.7-14 and 15, NOISE-4: Please revise as follows:

**NOISE RESTRICTIONS**

**NOISE-4** The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the operation of the project will not cause the noise levels due to plant operation alone to exceed an average of 54 dBA Leq continuously throughout the day and night measured at or near monitoring location CR1 and an average of 52 dBA Leq continuously throughout the day and night measured at or near monitoring location M1.

**Verification:** No new pure-tone components shall be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints<sup>52</sup>.

When the project first achieves a sustained output of 90-% or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at monitoring locations CR1 and M1, or at a closer location acceptable to the CPM. This survey shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been caused by the project.

The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected receptor locations to determine the presence of pure tones or other dominant sources of plant noise.

If the results from the noise survey indicate that the power plant noise at the affected receptor site exceeds the above value during the above time period, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to reduce~~eliminate~~ the pure tones.

**Verification:** The survey shall take place within 30 days of the project first achieving a sustained output of 90 % or greater of rated capacity. Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included

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<sup>52</sup> A legitimate complaint refers to a complaint about noise that is caused by the HHSEGS project as opposed to another source (as verified by the CPM). A legitimate complaint constitutes a violation by the project of any noise condition of certification (as confirmed by the CPM), which is documented by an individual or entity affected by such noise.



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in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limit, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

Within 15 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

5. Pages 4.7-15 and 16, NOISE-5: Please move the Verification section up as indicated as follows:

**OCCUPATIONAL NOISE SURVEY**

**NOISE-5** Following the project's attainment of a sustained output of 90% or greater of its rated capacity, the project owner shall conduct an occupational noise survey to identify any noise hazardous areas in the facility.

**Verification:** The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures to be employed in order to comply with the applicable California and federal regulations.

~~**Verification:**~~ Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request.

6. Page 4.7-16, NOISE-6: Since nighttime noise levels are protected by NOISE-2 and NOISE-4, please provide additional construction flexibility (especially due to desert temperature conditions) as follows:

**CONSTRUCTION RESTRICTIONS**

**NOISE-6** Heavy equipment operation and noisy construction work relating to any project features, including pile driving, shall be restricted to the times delineated below:

**Verification:** Mondays through Saturdays: 7 a.m. to 7 p.m.

~~Construction activities~~ Concrete pouring during hot summer days may be performed outside the above hours, with the CPM approval.

Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

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**Verification:**—Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

At least 5 days prior to pouring of concrete outside of the above hours, the project owner shall submit a statement to the CPM, specifying the time of night and the number of nights for which concrete pouring will occur, and the approximate distance of this activity to CR1 and M1.

## **POWER PLANT EFFICIENCY**

### **General Comments**

1. Please see the Applicant's comments in the Alternative's section for the comparison of different generating technologies.

### **Specific Comments**

2. Page 5.3-1, Summary of Conclusions, 2<sup>nd</sup> paragraph (also elsewhere in this section): States that "HHSEGS would occupy approximately 6.5 acres per MW of power output, . . ." Please refer to the comments in the Alternative section.
3. Page 5.3-2, Solar land use efficiency, 2<sup>nd</sup> set of bullets, 2<sup>nd</sup> bullet: Additional explanation is required to further describe/explain "the effect" as bolded in the following:

Energy-based solar land use efficiency is calculated by dividing the annual net electrical energy production in MWh per year by the total number of acres impacted by the power plant. Since different solar technologies consume differing quantities of natural gas for morning warm-up, cloudy weather output leveling, and maintaining system temperatures overnight (and some consume no gas at all), **this effect is accounted for**. Specifically, gas consumption is backed out by reducing the plant's net energy output by the amount of energy that could have been produced by consuming the project's annual gas consumption in a modern combined cycle power plant. (See EFFICIENCY APPENDIX A, immediately following.) This reduced energy output is then divided by acres impacted.

4. Page 5.3-4, Adverse Effects on Energy Supplies and Resources, last sentence: Add to the end of the last sentence a citation to CEC Natural Gas Assessment.
5. Page 5.3-4, Additional Energy Supply Requirements: Add to the statement a citation to CEC Natural Gas Assessment.
6. Page 5.3-5, Alternative Generating Technologies, 2<sup>nd</sup> paragraph: Additional metrics need to be taken into account. The 2<sup>nd</sup> paragraph requires updating. Different technologies remove land from alternative uses to varying degrees. Photovoltaic (PV), for example, may destroy all habitat value, while concentrating solar power (CSP) may preserve some habitat value. Thus, PV would remove land from a wider array of uses than would CSP.
7. Page 5.3-5, Alternative Generating Technologies, 3<sup>rd</sup> paragraph: Additional metrics need to be taken into account. The 3<sup>rd</sup> paragraph requires updating. Why is land use efficiency the only metric being focused on? What about water use efficiency or some other metric? As for

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land, why is only metric land area, as opposed to, for example, “graded and leveled land area?”

8. Page 5.3-7, Efficiency Table 1: Add a column to Table 1 for acres/megawatt (MW) to coincide with comparison described in text.
9. Page 5.3-7, Efficiency Table 1, 2<sup>nd</sup> row: The Rio Mesa project description has changed. Values need to be updated to reflect it being downsized to 500 MW (two plants).

Rio Mesa (11-AFC-4)	<del>500</del> 750	5,550	2,100,00	1,135,662	<del>0.14</del>	378	360
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10. Page 5.3-8, Alternative Heat Rejection System, 2<sup>nd</sup> paragraph, last sentence: This comparison of tradeoffs would be more meaningful if it were quantified. See also Water Resources.
11. Page 5.3-10, Conclusions, 4<sup>th</sup> paragraph, 1<sup>st</sup> sentence: Correct the following typo:

Also include~~include~~ MWh/acre-year.

### **Findings**

12. Finding #8: Please refer to the discussion of generating technologies and the comparison on a Mwh-per-acre-year basis.

### **Conditions of Certification:**

No conditions of certification are proposed.

## **POWER PLANT RELIABILITY**

### **General Comments:**

No general comments.

### **Specific Comments:**

1. Page 5.4-5, Fuel Availability, 2<sup>nd</sup> sentence: Please update size of natural gas line (12 inches).
2. Page 5.4-5, Fuel Availability, 5<sup>th</sup> sentence: Please quantify this statement.

### **Findings of Fact:**

No findings of fact in this section.

### **Conditions of Certification:**

No conditions of certification in this section.

## **PROJECT DESCRIPTION**

### **General Comments**

No general comments.

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**Specific Comments**

1. Page 3.1-1, 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence: The project site is 18 miles southeast of Pahrump, Nevada (by road), not 8 miles. Please correct or clarify that 8 miles is the straight line distance.
2. Page 3.1-1, 2<sup>nd</sup> paragraph, 4<sup>th</sup> sentence: It is a 230-kV switchyard, not 138-kV. Please correct.
3. Page 3.1-1, Project Location and Jurisdiction: APNs: Delete "Book 048, page 30, parcels 03 to 06 and 12 to 14; Book 048, page 62, parcels 03 to 06 and 11 to 14." These are not part of the project.
4. Page 3.1-1, last paragraph, 2<sup>nd</sup> sentence: The land on which the HHSEGS site is located was subdivided in the 1960s and 1970s.
5. Page 3.1-2, 1<sup>st</sup> full paragraph: Please add the following after the first sentence:

Project access would be from Tecopa Road to the project entrance road (Gold Street) on the east side of the project. Construction access would be from Tecopa Road to Quartz Avenue along the western project boundary (Project Description Figure 4).
6. Page 3.1-4, Solar Plants, 1<sup>st</sup> bullet: Please also revise as follows:

The SRS located at the top of the 590--620-foot-tall solar power tower is approximately 160-130 feet tall (of which the actual boiler is about 67 feet tall), resulting in an overall power tower height of approximately 750 feet, not including any additional appurtenances on the top.
7. Page 3.1-6, 1<sup>st</sup> paragraph after Table 1, 2<sup>nd</sup> sentence: The words "Once completed" should be added to the beginning of the sentence.
8. Page 3.1-6, Electrical Transmission System, 1<sup>st</sup> paragraph: The description of the Electrical Transmission System has been modified. The revised descriptions contained previously in the Applicant's General Comments should be used.
9. Page 3.1-6, Natural Gas Supply System: The description of the Natural Gas Supply System have been modified. The revised descriptions contained previously in the Applicant's General Comments should be used.
10. Page 3.1-9, General Grading and Leveling, 3<sup>rd</sup> sentence: Include the "primary access road to the power block" in the list of items to receive heavy to medium grading.
11. Page 3.1-10, Erosion and Sediment Control Measures, 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence: Add the phrase to the sentence:

To minimize wind and water erosion, other than mowing, open spaces would be preserved and left undisturbed maintaining existing vegetation to the extent possible with respect to site topography and access requirements.
12. Page 3.1-11, Restoration of Temporary Disturbances: Please revise as follows:

As proposed, temporarily disturbed areas will be restored to their preconstruction conditions, as appropriate. Temporary access roads used during construction will also be re-graded and restored to pre-existing function and grade. Approved seed mixes will be applied

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to temporarily disturbed areas, as required. No fertilizer will be used during stabilization or rehabilitation activities unless specifically authorized. No vegetation will be restored or encouraged within the solar field because of the fire hazard. Vegetation within the common area will be removed. ~~controlled to prevent containment from being compromised~~. When construction of storm water management structures is complete, contours will be carefully restored to the extent feasible.

### **Findings of Fact**

No findings of fact in this section.

### **Conditions of Certification**

No conditions of certification in this section.

## **PUBLIC HEALTH**

### **General Comments**

No general comments.

### **Specific Comments**

1. Page 4.8-2, Public Health Table 2, 3<sup>rd</sup> row under State: Please correct the error in California Health and Safety Code, Section 41700.

California Health and Safety Code section 41700	This section states that “a person shall <u>not</u> discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.”
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2. Page 4.8-13, 1<sup>st</sup> paragraph following Table 3: Please provide a list of the regulatory agencies cited in this paragraph. Additional minor edits are shown, for your consideration, as follows:

HHSEGS is proposed for an area where the fungus that causes Valley Fever<sup>53</sup> (*Coccidioides immitis*) ~~may occur~~occurs naturally. Construction ~~would~~could disturb ~~approximately up to~~ 3,276 acres<sup>54</sup> of top soil ~~which that~~that could harbor the spores of this fungus possibly exposing humans to the risk of Valley Fever. On-site workers could be exposed from inhaling these fungal spores from wind-blown dust generated from soil excavation work. To minimize the

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<sup>53</sup> Valley fever is an infection that occurs when the spores of the fungus *Coccidioides immitis* enter human body through the lungs.

<sup>54</sup> 1,483 acres in Solar Plant 1, 1,510 acres in Solar Plant 2, 103 acres in common area, and 180 acres in the temporary construction area (HHSG 2011a Section 5.6).

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potential for getting Valley Fever, staff would recommend that workers in the vicinity of such dust generation areas wet the soil before any excavation activities and wear protective masks as appropriate. Staying indoors during dust storms and closing all doors to avoid dust inhalation are measures recognized by the regulatory agencies as effective against Valley Fever in endemic areas where the risk of human exposure cannot be eliminated altogether. Staff considers the applicant's dust suppression plans as adequate to minimize the risk of contacting Valley Fever as generally happens in endemic areas. Please refer to staff's **Worker Safety and Fire Protection** section for more information.

3. Page 4.8-14, 3<sup>rd</sup> paragraph, 2<sup>nd</sup> sentence: Emission factors were obtained from Ventura County APCD factors (footnote provided in Table 5.1B-15 and -16). Text should be revised as follows:

The emission factors for these pollutants were obtained from the ~~Environmental Protection Agency (EPA) AP-42 database of emission factors~~ Ventura County Air Pollution Control District.

4. Page 4.8-16, Emission Levels, 2<sup>nd</sup> paragraph, 4<sup>th</sup> sentence: Because the analysis did not include produce (see Page 5.9-3, Footnote 2), reference to plant consumption should be removed. Remove the following text from the 4<sup>th</sup> sentence:

The applicable exposure pathways for the toxic emissions include inhalation, dermal (through the skin) absorption, soil ingestion, ~~consumption of locally grown plant foods, and~~ mother's milk.

5. Page 4.8-17, 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence: The emission factors for non-criteria pollutants used in this analysis are not U.S. Environmental Protection Agency (EPA) factors (see also Comment #2 in this summary). Revise the text as follows:

Emissions of non-criteria pollutants from the project were analyzed using emission factors previously approved by ARB and accepted by the Commission in other, similar proceedings ~~the U.S. Environmental Protection Agency (EPA)~~.

6. Page 4.8-20, Cumulative Impacts and Mitigation, 1<sup>st</sup> paragraph: Please revise the paragraph as follows:

Within the 6-mile radius of the HHSEGS site, neither newly permitted sources nor other sources of toxic air pollutants are reasonably anticipated in the near future except for the St. Therese Mission project. Additional planned development projects that will have-not filed applications for ~~involve~~ air permits include the Pahrump Valley General Aviation Airport (approximately 10 miles away) and the Element Power Solar Project (approximately 6.5 miles away). Potential cumulative impacts of other development projects within 10 miles of the project site are discussed in Appendix 5.1G of the AFC. Since all related toxic emissions would be below significant thresholds and highly localized, staff does not expect their additive impacts to be significant, particularly in light of their distance from the project site.

## **Findings of Fact**

No comments on findings of fact.

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## **Conditions of Certification**

No conditions of certification are proposed.

## **SOCIOECONOMICS**

### **General Comments**

1. The discussion of environmental justice populations is inconsistent throughout the PSA, and PSA sections (such as Traffic and Transportation, Visual Resources, and Land Use) should be revised to reflect the conclusion in the Socioeconomics section that there are no environmental justice populations within a 6-mile radius of the project in California.
2. **Socioeconomics – Figure 1**

According to the Environmental Justice discussion on Page 4.12-5 of the PSA, the 2010 Census showed that there were a total of 68 people living within a 6-mile radius of the project in California. Of these, 16 were minorities. Thus, the minority population comprised 24 percent of the total population within the 6-mile radius in California.

**Socioeconomics Table 2** shows the summary estimates at the 6-mile radius by area, and not by census blocks. Based on the numbers shown in **Socioeconomics Table 2** and **Socioeconomics – Figure 1**, the PSA concludes “there would be no socioeconomic impacts resulting from the construction or operation of the project to an environmental justice population.” This conclusion follows from the fact that the numbers in the figure and table do “not indicate the presence of a minority population.” Applicant agrees with this conclusion.

However, certain sections of the PSA interpret **Socioeconomics – Figure 1** as demonstrating the presence of an environmental justice population. **Socioeconomics – Figure 1** shows that there are two Census blocks within the 6-mile radius in California that have minority populations above 50 percent. The following table shows the distribution of minority population for these two census blocks.

Population Distribution for Census Blocks with Above 50 Percent Minority Population

<b>Census Block</b>	<b>Total Population</b>	<b>Non-Hispanic White</b>	<b>Minority</b>	<b>Percent Minority</b>
1634	3	1	2	67
1525	8	0	8	100

Source: U.S. Census Bureau, 2010.

As the numbers in the table show, the presence of a minority population that would trigger an Environmental Justice finding is based on populations that are very low. In the case of Census Block 1634, two out of the three people in that Census block are racial minorities (Native Hawaiian or Other Pacific Islander) while in Census Block 1525 all of the eight people in the Census block are of Hispanic origin. Even though a population that is more than



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50 percent minority typically result in a finding that an environmental justice population exists, in this particular case that conclusion is not reasonable for the following reasons. The first is that this is a low population density area; therefore, a minority population distribution of two out of three or eight out of eight individuals would not be unexpected. The second is that the use of a single Census block, especially one with low population density, is not reasonable to support the conclusion that an area has an Environmental Justice community. This is why the 6-mile radius is typically used in the evaluation of the presence of an Environmental Justice population, and is the reason the Socioeconomics section did not conclude that an Environmental Justice population was present. As a result, it is not reasonable to rely on these two Census blocks solely to determine whether there is an Environmental Justice population, given that the underlying populations in the Census blocks are very small. PSA sections finding that an Environmental Justice population exists should be revised to conform to the Socioeconomics section.

**Specific Comments**

3. Page 4.9-2, Table 1 LORS: No federal LORS are listed. Applicant recommends including the following:

Civil Rights Act of 1964	Prohibits discrimination on the basis of race, color, or national origin.	Applies to all federal agencies and agencies receiving federal funds.
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4. Pages 4.9-4 and 5, "Project-Specific Demographic Screening," "Minority Populations" sections and Socioeconomics Figure 1: See General Document Comments. These sections and figure establish that there is no minority population greater than 50 percent within a 6-mile radius surrounding the project site. However, a few sections throughout the AFC (Land Use, Page 4.6-1; see also Traffic and Transportation, Page 4.11-33; and Visual Resources, Page 47) find that there is an Environmental Justice population. Please correct the Environmental Justice analysis of these sections to be consistent with the Socioeconomics section.
5. Page 4.9-7, Induce Substantial Population Growth, 2<sup>nd</sup> sentence: This sentence omits a critical word "substantial." Please revise as follows:
- To determine whether the project would induce substantial population growth, staff analyzes the availability of the workforce and the population within the region, which includes Inyo County in California and Clark and Nye counties in Nevada.
6. Page 4.9-11, Construction Impacts, 2<sup>nd</sup> paragraph, 1<sup>st</sup> sentence: Staff states that the Applicant has selected Bechtel as the engineering, procurement, and construction contractor for the project; however, this is not final yet. At this time, Bechtel is performing preconstruction services under a Master Services Contract.
7. Page 4.9-18, Conclusion, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: The PSA states: "Due to the minimal resources of the local SIFPD, staff agrees with the SIFPD that the likely emergency response requirements of HHSEGS would likely create a significant public impact." However, the PSA does not explain the basis for this conclusion. The PSA fails to explain the standard or

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threshold used to determine whether an impact on public services is significant. The PSA states that the incident rate for three existing solar plants was 2.5 emergency calls per year or 0.83 emergencies per solar plant per year. While this number may not be “statistically significant,” it is extremely low. Regarding EMS, the PSA finds “incidents at gas-fired power plants that require EMS response are infrequent.” Given the foregoing, it is not clear what aspect of the HHSEGS would “significantly” impact SIFPD.

In addition, the impacts of the project on public services, if any, is not an “environmental impact” subject to CEQA. In the recent case of *City of Hayward v. Board of Trustees of the California State University*, A13424 (First District Court of Appeal, May 30, 2012), the City of Hayward and two community groups claimed that the University had violated CEQA because it did not agree to fund “mitigation” for the effect of campus expansion on fire and emergency medical services. The EIR concluded that the University’s plans would increase campus population, and that the City would need eleven additional fire fighters, a new fire station, and additional equipment to maintain response times and service levels. The trial court found the EIR deficient because it did not treat the plan’s effect on adequacy of fire protection services as an environmental impact. The city argued, as the PSA has concluded, that the impacts on these services are “real” and therefore must be significant.

On review, the court of appeal set the trial court’s ruling aside. It rejected the City’s claim that the risk of injury from “dangerously long” response times is an environmental impact subject to CEQA. The court of appeal concluded that providing fire and emergency medical services is the City’s legal responsibility. While campus expansion will increase the demand for those services, the court determined that this is an economic effect, not an environmental effect that must be mitigated under CEQA. The court held: “there is no authority supporting the city’s view that CEQA shifts financial responsibility for providing fire and emergency response services to the sponsor of a development project.” The court quoted from the CEQA guidelines: “Section 15382 of the CEQA guidelines defines ‘significant effect on the environment’ as ‘a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant’” (2012 Cal.App.LEXIS 761, \*18-19).

Therefore, the impact of the HHSEGS project on emergency response times is an economic effect, not an environmental effect that must be mitigated. The PSA should be revised accordingly.

While the project has no legal duty to mitigate the impacts, if any, on emergency response times, the Applicant is continuing discussions with SIFPD.

8. Page 4.9-18, Law Enforcement, Affected Environment, 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence: A word was omitted:

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There are two deputies stationed in Shoshone who are responsible for a 3,200 square mile area to the west of the substation.

### **Findings of Fact**

No comments on findings of fact.

### **Conditions of Certification**

No changes to the conditions of certification are proposed.

## **SOILS & SURFACE WATER**

### **General Comments**

No general comments.

### **Specific Comments**

1. Page 4.10-4, Table 2, Title: Please consider revising the title of the table as follows:  
"Lahontan RWQCB Basin Plan Beneficial Use Designation for Minor Surface Waters in the Pahrump Valley"
2. Page 4.10-6, Table 3: The following notes should be added to Table 3: (1) The percent composition cannot be applied to the HHSEGS site. This percent composition generally applies to the entire generalized soil association, which is extremely large. For example, within the HHSEGS site there may be only a few of these series present. (2) At least one of these series is expected to contain a petrocalcic horizon. (3) Here are many areas with cryptobiotic crusts and desert pavement; wind and water erosion could potentially be problematic once these are disturbed.
3. Page 4.10-7, Surface Water Features, 3<sup>rd</sup> paragraph, 3<sup>rd</sup> sentence: "Waters of the State" are defined by the State Water Resources Control Board, not the Department of Fish and Game; therefore please revise the sentence as follows:  
  
The Lahontan RWQCB and California Department of Fish and Game ~~is~~ are currently reviewing the project; ~~to determine whether any of the onsite washes are "Waters of the State".~~ the RWQCB will verify the extent of jurisdictional waters of the State on the site, and CDFG will verify which of these features will be subject to streambed alteration requirements under Section 1600 of the Fish and Game Code.
4. Page 4.10-7, 5<sup>th</sup> paragraph, last sentence: "The majority of runoff flows through the southern portion of the site due to offsite flows originating from the east." This sentence is not clear. Does it mean that offsite runoff is mostly on the southern boundary? Seems that it would mostly be on the western boundary.
5. Page 4.10-11, Linear Facilities, Offsite: The description of the electric transmission line and the natural gas pipeline have been modified. The revised description contained previously in the Applicant's General Document Comments should be used.

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6. Page 4.10-11, Linear Facilities, Offsite, last paragraph, 1<sup>st</sup> sentence: CEQA does not have connected actions. Therefore, delete the sentence ~~“Although the Hidden Hills Transmission Project is located entirely in Nevada (and therefore outside Energy Commission jurisdiction), this proposed transmission project is considered in this PSA as a connected action to the proposed HHSEGS project.”~~
7. Page 4.10-13, Soil Erosion, 1<sup>st</sup> paragraph: Please modify the first paragraph since it is vague and replace it with the following from the AFC:

Disturbed areas would be stabilized with effective soil cover (such as aggregate, paving, or vegetation) as soon as feasible but no later than 14 days after construction or disturbance is complete in that portion of the site. To reduce erosion potential, best management practices (BMPs) will be implemented in accordance with the SWPPP/DESCP. Vegetation will remain but will be cut (when necessary) to a height that will allow clearance for heliostat function while leaving the root structures intact. Occasional cutting of the vegetation will be performed as needed to permit unobstructed heliostat mirror movement.
8. Page 4.10-15, Contaminated Soil and Water, 2<sup>nd</sup> sentence: This sentence reads, in part: “It is recommended that near-surface soils be tested for the potential presence of *these compounds to assess* if there are any potential for unacceptable exposure risks...” (emphasis added). Please clarify what compounds are being referred to.
9. Page 4.10-20, 2<sup>nd</sup> bullet, 2<sup>nd</sup> sentence: Please revise the sentence as follows: “Since the initial filing of the original AFC, several some changes to the project have occurred such as the removal of two boilers from each power block facility layout and basic shape of each power block, the new alignment of onsite linear facilities, relocation of the project switchyard and modifications to the west perimeter retention area.
10. Page 4.10-21, 3<sup>rd</sup> paragraph, 1<sup>st</sup> sentence: The proposed project does not constitute an “unusual circumstance.” These best management practices (BMPs) are effective and have been proven in other desert projects.
11. Page 4.10-21, 3<sup>rd</sup> bullet, Footnote 6: Determination of “Waters of the State” is the job of the SWRCB (or the Lahontan RWQCB), not the California Department of Fish and Game (CDFG). Therefore, please revise: ~~“(by California Department of Fish and Game and Lahontan RWQCB)”~~ in the footnote.
12. Page 4.10-26, 3<sup>rd</sup> paragraph: Regarding the 2<sup>nd</sup> sentence, VTN performs hydrologic modeling in all sorts of desert environments. Please provide some reasoning for stating “...modeling is imprecise and untested in this desert environment.”
13. Page 4.10-30, last paragraph, 2<sup>nd</sup> sentence: Please delete the portion of the following sentence. It is inconsistent with the Socioeconomics PSA section concludes that “there is sufficient existing labor force in the region and the workforce would reside in existing, available housing” (CEC PSA Socioeconomics, page 4.9-15). The portion of the sentence which should be deleted reads: ~~“For example, additional housing may be needed to accommodate workers for construction and operation of the project, or ...”~~

## **Findings of Fact**

No comments on findings of fact.

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**Conditions of Certification**

14. Pages 4.10-36 through 39, SOILS-1: Please make the following changes to SOILS-1:

**SOILS-1** Prior to site mobilization, the project owner shall obtain the CPM's approval for a site specific DESCP that ensures protection of water quality and soil resources of the project site and all onsite linear facilities for both the construction and operation phases of the project. This plan shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, and identify all monitoring and maintenance activities.

**Verification:** The project owner shall complete all engineering plans, reports, and documents necessary for the CMP to conduct a review of the proposed project and provide a written evaluation as to whether the proposed grading, drainage improvements, and flood management activities comply with all requirements presented herein. The plan shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1** and shall contain the following elements:

**Vicinity Map:** A map shall be provided indicating the location of all project elements with depictions of all major geographic features to include watercourses, washes, irrigation and drainage canals, major utilities, and sensitive areas.

**Site Delineation:** The site and all project elements shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, underground utilities, roads, and drainage facilities. Adjacent property owners shall be identified on the plan maps. All maps shall be presented at a legible scale

**Drainage:** The DESCP shall include the following elements:

- a. Topography. Topography for offsite areas are required to define the existing upstream tributary areas to the site and downstream to provide enough definition to map the existing storm water flow and flood hazard. Spot elevations shall be required where relatively flat conditions exist.
- b. Proposed Grade. Proposed grade contours shall be shown at a scale appropriate for delineation of onsite ephemeral washes, drainage ditches, and tie-ins to the existing topography.
- c. Hydrology. Existing and proposed hydrologic calculations for onsite areas and offsite areas that drain to the site; include maps showing the drainage area boundaries and sizes in acres, topography and typical overland flow directions, and show all existing, interim, and proposed drainage infrastructure and their intended direction of flow.
- d. Hydraulics. Provide hydraulic calculations to support the selection and sizing of the onsite drainage network, diversion facilities and BMPs.

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**Watercourses and Critical Areas:** The DESCP shall show the location of all onsite and nearby watercourses including washes, irrigation and drainage canals, and drainage ditches, and shall indicate the proximity of those features to the construction site. Maps shall identify high hazard flood prone areas.

**Clearing and Grading:** The plan shall provide a delineation of all areas to be cleared of vegetation, areas to be preserved, and areas where vegetation would be cut to allow clear movement of the heliostats. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross-sections, cut/fill depths or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography tying in proposed contours with existing topography shall be illustrated. The DESCP shall include a statement of the quantities of material excavated at the site, whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported or a statement explaining that there would be no clearing and/or grading conducted for each element of the project. Areas of no disturbance shall be properly identified and delineated on the plan maps.

**Soil Wind and Water Erosion Control:** The plan shall address exposed soil treatments to be used during construction and operation of the proposed project for both road and non-road surfaces including specifically identifying all chemical based dust palliatives, soil bonding, and weighting agents appropriate for use at the proposed project site that would not cause adverse effects to vegetation; BMPs shall include measures designed to prevent wind and water erosion including application of chemical dust palliatives after rough grading to limit water use. All dust palliatives, soil binders, and weighting agents shall be approved by the CPM prior to use.

**Project Schedule:** The DESCP shall identify on the topographic site map the location of the site-specific BMPs to be employed during each phase of construction (initial grading, project element construction, and final grading/stabilization). BMP implementation schedules shall be provided for each project element for each phase of construction.

**Best Management Practices:** The DESCP shall show the location, timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during project element excavation and construction, during final grading/stabilization, and after construction. BMPs shall include measures designed to control dust and stabilize construction access roads and entrances. The maintenance schedule shall include post-construction maintenance of treatment-control BMPs applied to disturbed areas following construction.

**Erosion Control Drawings:** The erosion-control drawings and narrative shall be designed, stamped and sealed by a professional engineer or erosion-control specialist.

**Agency Comments:** The DESCP shall include copies of recommendations from the County of Inyo and the ~~California Department of Fish and Game (CDFG), and Lahontan Regional Water Quality Control Board (RWQCB).~~

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**Monitoring Plan:** Monitoring activities shall include routine measurement and photographs of the volume of accumulated sediment in the onsite drainage ditches, and storm water diversions.

**Verification:** ~~The DESC~~ shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1**, and relevant portions of the DESC shall be submitted to the chief building official (CBO) for review and approval. The DESC may be combined with the construction SWPPP. In addition, the project owner shall do all of the following:

- a. No later than ninety (90) days prior to start of site mobilization, the project owner shall submit a copy of the DESC to Inyo County for review and comment. The CPM shall consider comments received from Inyo County ~~and RWQCB~~ and approve the DESC.
- b. During construction, the project owner shall provide an analysis in the monthly compliance report on the effectiveness of the drainage-, erosion- and sediment control measures and the results of monitoring and maintenance activities.
- c. Once operational, the project owner shall provide in the annual compliance report information on the results of storm water BMP monitoring and maintenance activities.

15. Page 4.10-39, SOILS-2: Verification: Please revise the Verification as follows:

**Verification:** At least thirty (30) days prior to site mobilization, the project owner shall submit copies to the CPM of the construction SWPPP and shall retain a copy onsite. Within 10 days of its mailing or receipt, the project owner shall submit to the CPM any correspondence between the project owner and the Lahontan RWQCB about the general NPDES permit for discharge of storm water associated with this activity. This information shall include a copy of the notice of intent sent by the project owner to the State Water Resources Control Board and the notice of termination. ~~Thirty (30) days prior to site mobilization, the project owner shall submit the construction SWPPP to the CBO and CPM for approval. A copy of the approved construction SWPPP shall be kept accessible onsite at all times.~~

16. Page 4.10-40, SOILS-4: Applicant has no changes to the wording of SOILS-4.

17. Page 4.10-40 through 43, SOILS-5: Please revise SOILS-5 as follows:

**SOILS-5:** The project owner shall ensure that the heliostats are designed and installed to withstand storm water scour that may occur as a result of a 100-year storm event. The analysis of the storm event and resulting heliostat stability will be provided within a Pylon Insertion Depth and Heliostat Stability Report to be completed by the project owner applicant. This analysis will incorporate results from site-specific geotechnical stability testing, as well as hydrologic and hydraulic storm water modeling performed by the project owner applicant. The modeling will be completed using methodology and assumptions approved by the CPM.

The project owner shall also develop a Storm Water Damage Monitoring and Response Plan to evaluate potential impacts from storm water, including heliostats



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that fail due to storm water flow or otherwise break and scatter mirror debris on to the ground surface.

**Verification:** At least sixty (60) days prior to construction installation of the first pylon, the project owner shall submit to the CPM a copy of the Pylon Insertion Depth and Heliostat Stability Report for review and approval prior to construction. At least sixty (60) days prior to commercial operation, the project owner shall submit to the CPM a copy of the Storm Water Damage Monitoring and Response Plan for review and approval prior to commercial operation. The project owner shall retain a copy of this plan onsite at the power plant at all times. The project owner shall prepare an annual summary of the number of heliostats failed, cause of the failure, and cleanup and mitigation performed for each failed heliostat.

The basis for determination of pylon embedment depths shall employ a step-by-step process as identified below and approved by the CPM:

- A. Determination of peak storm water flow within each sub-watershed from a 100-year event:
  - Use of San Bernardino County (SBC) Hydrology Manual to specify hydrologic parameters to use in calculations; and
  - HEC -1 and Flo-2D models will be developed to calculate storm flows from the mountain watersheds upstream of the project site, and flood flows at the project site, based upon hydrologic parameters from SBC.
- B. Determination of potential total pylon scour depth:
  - Potential channel erosion depths will be determined using the calculated design flows, as determined in A above, combined with the Flo-2D model results. methodology presented in "FAN, An Alluvial Fan Flooding Computer Program, FEMA, 1990."
  - Potential local scour will be determined using the calculated design flows, as determined in A above, combined with the Federal Highway Administration (FHWA) equation for local bridge pier scour from the FHWA 2001 report, "Evaluating Scour at Bridges."
- C. The results of the scour depth calculations and pylon stability testing will be used to determine the minimum necessary pylon embedment depth within the active channels. In the inactive portions of the alluvial fans that are not subject to channel erosion and local scour, the minimum pylon embedment depths will be based on the results of the pylon stability testing.
- D. The results of the calculated peak storm water flows and channel erosion and heliostat scour analysis together with the recommended heliostat installation depths shall be submitted to the CPM for review and approval sixty (60) days before the start of heliostat installation.

The Storm Water Damage Monitoring and Response Plan shall be submitted to the CPM for review and approval and shall include the following:

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- Detailed maps showing the installed location of all heliostats within each project phase;
- Description of the method of removing all soil spoils should any be generated;
- Each heliostat should be identified by a unique ID number marked to show initial ground surface at its base, and the depth of the pylon below ground;
- Minimum Depth Stability Threshold to be maintained of pylons to meet long-term stability for applicable wind, water and debris loading effects;
- Above and below ground construction details of a typical installed heliostat;
- BMPs to be employed to minimize the potential impact of broken mirrors to soil resources;
- Methods and response time of mirror cleanup and measures that may be used to mitigate further impact to soil resources from broken mirror fragments; and
- ~~Monitoring, documenting, and restoring the downstream playa surface when impacted by sedimentation or broken mirror shards.~~

A plan to monitor and inspect periodically, before first seasonal and after every storm event:

- Security and Tortoise Exclusion Fence: Inspect for damage and buildup of sediment or debris
- Heliostats within Drainages or subject to drainage overflow: Inspect for tilting, mirror damage, depth of scour compared to pylon depth below ground and the Minimum Depth Stability Threshold, collapse, and downstream transport.
- Drainage Channels: Inspect for substantial migration or changes in depth, and transport of broken glass.
- Constructed Diversion Channels: Inspect for scour and structural integrity issues caused by erosion, and for sediment and debris buildup.
- Downstream Playa Surface: Inspect for changes in the surface texture and quality from sediment buildup, erosion, or broken glass.

Short-Term Incident-Based Response:

- Security and Tortoise Exclusion Fence: repair damage, and remove built-up sediment and debris.
- Heliostats: Remove broken glass, damaged structure, and wiring from the ground, and for pylons no longer meeting the Minimum Depth Stability Threshold, either replace/reinforce or remove the mirrors to avoid exposure for broken glass.
- Drainage Channels: no short-term response necessary unless changes indicate risk to facility structures.

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- Constructed Diversion Channels: repair damage, maintain erosion control measures and remove built-up sediment and debris.

Long-Term Design-Based Response:

- Propose operation/BMP modifications to address ongoing issues. Include proposed changes to monitoring and response procedures, frequency, or standards.
- Replace/reinforce pylons no longer meeting the Minimum Depth Stability Threshold or remove the mirrors to avoid exposure for broken glass.
- Propose design modifications to address ongoing issues. This may include construction of active storm water management diversion channels and/or detention ponds.
- Inspection, short-term incident response, and long-term design based response may include activities both inside and outside of the project boundaries. For activities outside of the project boundaries the owner shall ensure all appropriate environmental review and approval has been completed before field activities begin.

~~**Verification:** At least sixty (60) days prior to construction, the project owner shall submit to the CPM a copy of the Pylon Insertion Depth and Heliostat Stability Report for review and approval prior to construction. At least sixty (60) days prior to commercial operation, the project owner shall submit to the CPM a copy of the Storm Water Damage Monitoring and Response Plan for review and approval prior to commercial operation. The project owner shall retain a copy of this plan onsite at the power plant at all times. The project owner shall prepare an annual summary of the number of heliostats failed, cause of the failure, and cleanup and mitigation performed for each failed heliostat.~~

18. Page 4.10-43, SOILS-6: Applicant has no comments on SOILS-6.

19. Page 4.10-44, SOILS-7: Applicant has no comments on SOILS-7.

20. Page 4.10-44 to 45, SOILS-8: Please revise this condition as follows:

**SOILS-8:** The project owner shall comply with the requirements of the Inyo County Environmental Health Services Department (Inyo County Code 7.52.060) and the California Plumbing Code (California Code of Regulations Title 24, Part 5) while designing and operating the HHSEGS sanitary waste disposal facilities such as septic systems and leach fields. Compliance shall include an engineering report on the septic system and leach field design, operation, maintenance, and loading impact to groundwater. Use of the permanent facility septic systems and leach fields for onsite disposal of domestic wastes generated from temporary worker housing is prohibited without prior approval from the CPM.

~~**Verification:** The project owner shall submit all necessary the engineering report to Inyo County for review and to the CPM for review and approval. information and the appropriate fee to the Inyo County Environmental Health Services Department to ensure that the project has complied with county sanitary waste disposal facilities requirements. Written~~

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~~assessments prepared by Inyo County regarding the project's compliance with these requirements must be submitted to the CPM for review and approval at least thirty (30) days prior to use of the septic systems. Any requests to use the permanent facility septic systems for onsite disposal of domestic wastes generated from temporary worker housing must be made at least ninety (90) days in advance of the proposed use and shall be accompanied by a complete technical assessment demonstrating that the proposed use is consistent with the Inyo County sanitary waste disposal facility requirements and would not cause the system to fail or exceed regulatory standards.~~

## **TRAFFIC AND TRANSPORTATION**

### **General Comments**

1. Overall, the assessment of traffic and transportation impacts in the PSA is a very thorough, objective, and accurate analysis of the issue. We are concerned, however, that certain proposed conditions are more stringent than the conditions placed on other similarly situated projects licensed by the Commission. Therefore, as explained below, we recommend that these more-stringent conditions be deleted or revised. In several instances, we recommend use of the standard Commission language, rather than the more-restrictive language proposed in this section of the PSA.
2. Although the road south of the project site is often shown on maps as the "Old Spanish Trail Highway," we'd like to be consistent throughout the document and call it Tecopa Road to avoid confusion with the Old Spanish Historic Trail.
3. Condition of Certification TRANS-1 should be deleted. This condition has not been imposed on other similarly situated renewable energy projects and there has been no justification shown in the PSA for imposing this condition on the HHSEGS project. The condition is burdensome and unenforceable. Under California law, the owner of a vehicle is responsible for obtaining necessary highway permits. Thousands of vehicles are likely to travel to the HHSEGS during construction and operation of the facility. To require the Project Owner to obtain, retain, and report the permits for each of these vehicles would be an extraordinarily burdensome and costly task. Moreover, in the absence of any evidence that vehicles serving the HHSEGS project will not be in compliance with transportation laws, the condition is entirely unnecessary. Finally, it has not been shown that the Commission has the authority to impose a condition regarding the permits for vehicles that travel roads in California and Nevada. The Commission has jurisdiction over power plant "sites and related facilities." There has been no showing that the Commission has jurisdiction over vehicles that travel to and from the project site. Therefore, this condition would be a significantly burdensome and unnecessary expansion of the Commission's jurisdiction.
4. Inyo County has requested additional right-of-way along Tecopa Road to provide for acceleration and deceleration lanes. Condition of Certification TRANS-2 is written more broadly than necessary. As written, this condition would require the project owner to "offer to dedicate to the County of Inyo 24 feet of right-of-way along Old Spanish Trail Highway Road for the length of HHSEGS site." This condition should be revised to specify that the

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project owner shall provide the necessary right-of-way for acceleration and deceleration lanes at entrances or exits from the project site.

5. References to Environmental Justice populations within Census blocks is inconsistent throughout the PSA.

**Socioeconomics – Figure 1**

According to the Environmental Justice discussion on the presence of minority population on Page 4.9-5 of the Socioeconomics section, the 2010 Census showed that there were a total of 68 people living within a 6-mile radius of the project in California. Of these, 16 were minority (racial as well as Hispanic). Thus, the minority population comprised 24 percent of the total population within the 6-mile radius in California. **Socioeconomics Table 2** shows the summary estimates at the 6-mile radius by area and not by Census blocks. Based on the numbers shown in **Socioeconomics Table 2** and **Socioeconomics – Figure 1**, the PSA concludes “there would be no socioeconomic impacts resulting from the construction or operation of the project to an environmental justice population.” This conclusion follows from the fact that the numbers in the figure and table don’t “not indicate the presence of a minority population.” However, **Socioeconomics – Figure 1** shows that there are two Census blocks within the 6-mile radius in California that have minority populations above 50 percent. The following table shows the distribution of minority population for these two census blocks.

Population Distribution for Census Blocks with Above 50 Percent Minority Population

Census Block	Total Population	Non-Hispanic White	Minority	Percent Minority
1634	3	1	2	67
1525	8	0	8	100

Source: U.S. Census Bureau, 2010.

As the numbers in the table show, the presence of a minority population that would trigger an Environmental Justice finding is based on populations that are very low. In the case of Census Block 1634, two out of the three people in that Census block are racial minority (Native Hawaiian or Other Pacific Islander) while in Census Block 1525 all of the eight people in the Census block are of Hispanic origin. Even though a population that is more than 50 percent minority typically calls for a finding that an Environmental Justice population exists in an area per CEQ guidelines, in this particular case, that conclusion would not make a lot of sense for a couple of reasons. The first is that this is a low population density area and so minority population distribution of two out of three or eight out of eight individuals would not be unexpected. The second is that the use of a single Census block, especially one with low population density, does not seem reasonable to make the conclusion that an area has an Environmental Justice community. This is why the 6-mile radius is typically used in the evaluation of the presence of an Environmental Justice population and is the reason the Socioeconomics section did not conclude that an Environmental Justice population was present.

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Based on this reasoning, it would appear that any reference to these two Census blocks in determining the presence of an Environmental Justice population for purposes of evaluating impacts in other sections of the PSA such as Land Use (Page. 4.6-1), Traffic and Transportation (Page 4.11-33), and Visual Resources (Page 4.13-42) would not make sense without addressing the fact that this determination is actually based on populations comprising two and eight people in total. Thus, the underlying populations in the Census blocks are very small.

6. Condition of Certification TRANS-3 must be revised. The condition is different and more stringent than the standard condition that has been applied to similarly situated projects. The standard condition requires the project owner to restore all public roads that have been damaged due to project-related construction activities to "original or near-original condition" in a timely manner, as directed by the CPM. Condition of Certification #2, in contrast, requires the project owner to restore all public roads that have been damaged due to project-related construction activities to "original condition or better in compliance with the applicable jurisdiction's specifications." There is no justification for requiring restoration to exceed the original condition as evidenced by the photos and/or video taken prior to the start of construction. In addition, the verification language of Condition #2 differs from the standard condition and raises a number of potential ambiguities in the manner in which it would be applied. To avoid any possible confusion, we urge the Commission to apply the standard condition and verification language. We have provided recommended language later in this document.
7. Condition of Certification TRANS-4 states that "The project owner shall require all construction truck traffic use State Route 160 to the project site." We recommend that the Condition be revised to specify that all construction truck traffic originating from outside of Inyo County shall not use Tecopa Road from east of the project site. We expect that there will be some construction trucks that may originate from within Inyo County and we would not want to have a condition that would inadvertently preclude service or deliveries from Inyo County businesses.
8. Condition of Certification TRANS-6 requires the project owner to provide copies of all permits/licenses obtained for the transportation of hazardous substances. As noted previously in reference to Condition TRANS-4, under California law, the owner of the vehicle (not the customer) has responsibility for obtaining necessary vehicle permits. The Applicant agrees with a condition stating that the project owner shall contract with licensed hazardous material delivery and waste hauler companies. However, if a licensed company is not operating in compliance with California law once it leaves the project site, such conduct is beyond the control of the Project Owner and beyond the jurisdiction of the Commission.

### **Specific Comments**

9. Page 4.11-9, Level of Service, 3<sup>rd</sup> and 4<sup>th</sup> paragraphs: The levels of service (LOS) was calculated using seconds of delay nor a volume/capacity (V/C) ratio. Therefore, revise the 2<sup>nd</sup> paragraph as follows:

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Based on the traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the volume/capacity (V/C) ratios and levels of service (LOS) have been determined for each intersection.

\* \* \* \*

**Traffic and Transportation Table 2** summarizes the intersection roadway LOS criteria based on seconds of delay for associated V/C ratios.

10. Page 4.11-9, Table 2, Level of Service Criteria for Roadways and Intersections: Delete "Roadways and" in the table title since the definitions are only for roadways. A separate table for roadways and LOS may be warranted.
11. Page 4.11-9, Table 2, Level of Service Criteria for Roadways and Intersections, 2<sup>nd</sup> column, Control Delay (seconds/vehicles): The control delay listed in this column is for intersections.
12. Page 4.11-12, Bicycle and Pedestrian Facilities, 2<sup>nd</sup> paragraph, 1<sup>st</sup> sentence (note the font in the heading is inconsistent): A Class II bike lane is provided on either side of SR 160. Thus, please revise the first sentence as follows:

Due to the remoteness of the area there are no designated bicycle lanes in the area (other than SR 160) or adjacent to HHSEGS.

13. Page 4.11-14, Item 8: Applicant suggests that this item be deleted because it is not an applicable threshold of significance under CEQA.
14. Page 4.11-15, Construction Period Impacts and Mitigation, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: Only one intersection was analyzed. Suggest the following change:

Staff analyzed the proposed HHSEGS's potential traffic impacts by evaluating state route segments, roadway segments, and the intersections of SR 160 and Tecopa Road in the vicinity of the project site.

15. Page 4.11-15, Construction Workforce Traffic, first two paragraphs: The analysis has been revised to be consistent with revised impacts from using construction truck traffic levels used in the air quality construction impact assessment. Suggest the following changes be made:

The construction of HHSEGS (from perimeter fencing, site preparation, grading and commercial operation) would be completed over an approximately 29-month period. Solar Plant 1 construction would begin in the first quarter of 2013 and begin commercial operation the first quarter of 2015. Solar Plant 2 construction would begin in the first quarter of 2013 and begin commercial operation in the second quarter of 2015. The common area facilities would be constructed during construction of Solar Plant 1.

The construction workforce at the project site would peak during Month 14 with approximately 1,033 workers and average approximately 641~~634~~ workers a month during the course of construction. By month seven, 890 construction workers are projected (86~~82~~ percent of the peak workforce during Month 14).



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In addition, a peak of approximately 6642-workers would be required to construct the gas and transmission line, and linear compliance support which would occur during month 1614. However, the construction of these facilities would not coincide with the peak of the plant site construction employment.

16. Page 4.11-16, 4<sup>th</sup> paragraph: Please revise as follows:

Based on this assumption, HHSEGS would temporarily generate a total of 1,9101,912 daily construction-related auto trips, with 863860 trips occurring during the morning peak hour and 863860 trips occurring during the afternoon peak hour. The total project trip generation, including the construction truck traffic, during the peak construction month is summarized in Traffic and Transportation Table 4. The workforce trips per shift for Month 14 are summarized in Traffic and Transportation Table 5.

17. Pages 4.11-16 and 17, Tables 4 and 5: Please revise the tables and footnotes as follows:

**Traffic and Transportation Table 4  
Peak Construction Trip Generation (Month 14)  
AM Peak Hour                      PM Peak Hour**

	Daily Trips	In	Out	In	Out
Automobiles	<u>1,9101,912</u>	<u>863860</u>	0	0	<u>863860</u>
Trucks*	<u>768834</u>	<u>4347</u>	0	0	<u>4347</u>
Total	<u>2,7442,680</u>	<u>906907</u>	0	0	<u>906907</u>

Source: Source: Hidden Hills Solar Electric Generating System Application for Certification, Table 5.12-4.

\*Assumes peak of 384 truck deliveries are spread equally throughout the day from 6:00 a.m. to 6:00 p.m. with a 3-hour lag for unloading.

**Traffic and Transportation Table 5  
Peak Construction Workforce and Trips (Month 14)**

Project Site Workforce	Morning Shift (5:00am to 3:30pm)	Swing Shift (6:00pm to 4:30am)	Day Shift (6:00am to 4:30pm)	TOTAL
Craft	812	60	0	872
Non-Craft	<u>4138</u>	<u>03</u>	0	<u>4138</u>
Compliance	80	0	0	80
Owners	0	0	40	40
Total Workforce	<u>933930</u>	<u>6063</u>	40	1,033
Workforce Trips				
Number of	70*	<u>45**</u>	3***	<u>7778****</u>

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Carpools (7.5%)				
Total Employee Vehicles	<del>863860</del> *****	<del>5658</del>	37	<del>956955</del>
Total Trips (In/Out)	<del>1,7261,720</del>	<del>112116</del>	74	<del>1,9121,910</del>

Source: Hidden Hills Solar Electric Generating System Application for Certification, Table 5.12-5

\*~~933930~~ (Total Workforce) \* .075 (7.5 % carpools) = ~~69.9775~~

\*\*~~6063~~ (Total Workforce) \* .075 (7.5 % carpools) = ~~4.5725~~

\*\*\*40 (Total Workforce) \* .075 (7.5 % carpools) = 3

\*\*\*\*1,033 (Total Workforce) \* .075 (7.5 % carpools) = 77.475

\*\*\*\*\* Assumes one incoming trip per vehicle during a\_m\_am peak and one outgoing trip per vehicle during p\_m\_pm peak.

18. Page 4.11-17, 1<sup>st</sup> paragraph following Table 5: Please revise as follows:

A worst-case scenario, where all workers commute with only one occupant per vehicle, would yield a peak trip generation of approximately ~~933860~~ inbound trips during the morning peak period and another ~~933860~~ outbound trips during the evening peak period.

19. Pages 4.11-18: Please revise Tables 6 and 7 and related text as follows: Please note that in Table 7, LOS was recalculated with revised trips. LOS changed slightly during AM peak hour. LOS remained the same during PM peak hour. **Please note:** In AFC Table 5.12-8, the Existing Conditions with HHSEGS row, PM Peak/LOS column was shown as a LOS A. In the PSA, Traffic and Transportation Table 7 it is shown as LOS C. We assume the change from LOS A (in the AFC) to LOS C (in the PSA) was a typo.

**Traffic and Transportation Table 6**  
**State of California and State of Nevada**  
**Construction-Related Project Trip Distribution for Month 14**

Automobiles					Trucks	
Road	Direction (To/From)	Destination	Percentage	Peak Hour Trips*	Percentage	Peak Hour Trips*
State Route 160	West	Pahrump, Nevada	20%	173 Trips	0%	0 Trips
Tecopa Road	South	Barstow, California I-15 southbound	5%	43 Trips	0%	0 Trips
State Route 160, West of I-15	East	Enterprise/Spring Valley, Nevada	10%	86 Trips	0%	0 Trips
I-15	North	Las Vegas, Nevada	35%	3021 Trips	100%	43 Trips

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State Route 160/East Windmill Lane	East	Towards Henderson, Nevada	30%	2598 Trips	0%	0 Trips
Total			100%	863 Trips	100%	43 Trips

Source: Hidden Hills Solar Electric Generating System Application for Certification, Table 5.12-7

\* From Traffic and Transportation Table 4

**Traffic and Transportation Table 7** depicts the intersection of State Route 160 and Tecopa Road~~Old Spanish Highway~~ would operate at LOS A during the morning peak hour and LOS F during the afternoon peak hour under the existing plus project construction conditions. During the AM peak period, the LOS changes primarily on the eastbound left-turn from SR 160 to Tecopa Road~~Old Spanish Trail Highway~~. During the PM peak period, the operational issues are for the northbound movements—both left- and right turns (HHSG 2011a, page 5.12-19). LOS F is not an acceptable level of service on State of Nevada highways.

**Traffic and Transportation Table 7  
State of Nevada**

**Comparison of State Route 160/Tecopa Road~~Old Spanish Trail Highway~~ Intersection  
Existing Plus HHSEGS LOS**

	Approach/Movement	AM Peak		PM Peak	
Existing Conditions		Delay	LOS	Delay	LOS
	Northbound left/right	9.3	A	9.7	A
	Westbound left	8.1	A	7.9	A
Existing Conditions with HHSEGS	Northbound left/right	9.8	A	100+	F
	Westbound left	16.12	C	7.9	<u>A</u>

Source: Hidden Hills Solar Electric Generating System Application for Certification, Table 5.12-8

The change in~~decrease of the~~ LOS is consistent with the proposed construction traffic patterns as it is anticipated that approximately 95 percent of the project construction traffic is estimated to travel through the SR 160/Tecopa Road~~Old Spanish Trail Highway~~ intersection. Seconds of delay would increase from 9.8 seconds to 100 plus. As a result of this increase, vehicles could become stacked~~queues could increase on~~ Tecopa Road~~Old Spanish Trail Highway~~ as drivers merge onto SR 160.

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To reduce traffic impacts on ~~Tecopa Road~~~~Old Spanish Trail Highway~~, staff recommends Condition of Certification **TRANS-5**, which would require development and implementation of a traffic control plan (TCP) to reduce construction traffic impacts to LOS and to ensure sufficient parking and emergency access to the site.

The ~~Nevada Department of Transportation~~~~NDOT~~ commented that the required storage for the left turn lane on SR 160 should be determined and be lengthened if needed (CEC 2012v). Energy Commission staff is continuing to coordinate with NDOT to address the required storage and improvements on ~~SR~~~~State Route~~ 160, and with Clark County to address any additional roadway improvements on the Nevada portion of the ~~Tecopa Road~~~~Old Spanish Trail Highway~~ and the feasibility of the inclusion of the applicant's proposed mitigation measures, shown below, which would be required to reduce the significance of traffic impacts on the proposed roadway system within Nevada to be utilized by HHSEGS.

20. Pages 4.1-20 through 4.1-22, Construction Truck Traffic: Table 8 represents trucks per month, instead of trucks per day. The peak number of trucks in 1 day is estimated to be 90 trucks. However, to be consistent with the Air Quality analysis, a peak of 384 truck deliveries (768 truck trips) per day was used in the following revised analysis. As a result of our revised analysis, please change this section to read as follows. Also, it is unrealistic to think that trucking companies would turn their trucks and cargo over to unlicensed drivers. This is cautiousness beyond reality and Condition TRANS-1 should be deleted. Please make the following changes:

**Construction Truck Traffic**

Construction equipment deliveries and construction-related truck traffic would contribute additional trips during the construction period. The peak construction delivery periods would occur during Months 3 through 7 when materials for the concrete batch plant would be delivered for the solar tower foundations and towers. Monthly truck deliveries will peak at 717 trucks during Month 5. Peak daily truck deliveries can be estimated using delivery records from construction at Ivanpah SEGS. During the period October 2010 through April 2012, the highest number of daily truck deliveries at Ivanpah SEGS was 72. Adding a 25 percent contingency for HHSEGS would yield a maximum of 90 delivery trucks on a peak day.

The analysis of construction deliveries for the air quality assessment used a more-conservative method to determine the peak daily number of delivery trucks, using a calculation based on truck volumes during the highest 12 consecutive months. The result was a much more conservative estimate of 384 deliveries per day, or 768 one-way truck trips per day. To be conservative and consistent with the air quality analysis, this much larger value was used in the revised traffic analysis.

~~Although the deliveries would peak at 717 trucks during Month 5, the truck deliveries have been evaluated during Month 14, when the construction workforce is at its peak and total project trip generation would be at its highest. During Month 14, it is estimated that there would be 417 delivery vehicles per day (equivalent to 834 total truck trips), in addition to the construction worker trips. It is was assumed that the delivery truck trips would be~~

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spread evenly throughout the day, beginning at 6:00 a.m. and ending at 6:00 p.m. Also, it was assumed that all inbound deliveries would occur in the first nine hours, and all exiting delivery truck trips would occur in the last nine hours. The resulting estimate was 43 trips during the morning peak hour and 43 trips during the afternoon peak hour. ~~resulting in 47 trips during the morning peak hour and 47 trips during the afternoon peak hour.~~ **Traffic and Transportation Table 8** depicts the construction delivery schedule.

**Traffic and Transportation Table 8**  
**Monthly Construction Delivery Schedule (Number of Trucks/Trips by Month)**

Month	Equipment and Materials	Heliostat Components	<del>Total Vehicles</del> <b>Truck Deliveries/Month</b>	<del>Monthly Daily</del> <b>Trips (In/Out)</b>
0	35	0	<del>350</del>	<del>70</del>
1	55	0	55	110
2	480	0	480	960
3	420	245	665	1330
4	407	245	652	1304
5	472	245	717	1434
6	438	245	683	1366
7	411	245	656	1312
8	112	245	357	714
9	120	246	366	732
10	148	246	394	788
11	141	246	387	774
12	137	246	383	766
13	165	246	411	822
14	171	246	417	834
15	155	245	400	800
16	137	245	382	764
17	132	245	377	754
18	108	245	353	706
19	104	245	349	698
20	96	245	341	682
21	70	0	70	140
22	55	0	55	110
23	43	0	43	86
24	36	0	36	72
25	28	0	28	56
26	28	0	28	56
27	10	0	10	20
28	0	0	0	0
29	0	0	0	0

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*Source: Hidden Hills Solar Electric Generating System AFC Table 5.12-6.*

Construction truck traffic is proposed to use I-15 within both the State of California and the State of Nevada and SR 160 within the State of Nevada. Most truck traffic would originate from southern California heading towards Las Vegas then west on SR 160 to Tecopa Road ~~Old Spanish Trail Highway~~. Refer to **Traffic and Transportation Table 6** for the truck trip generation.

~~Oversized or overweight trucks with unlicensed drivers could present significant hazards to the general public and/or damage roadways.~~ To ensure that trucks comply with weight, size, and route limitations set by the Department of Transportation (Caltrans), ~~Nevada Department of Transportation~~ NDOT, and Inyo County, and that drivers are contractually obligated to be properly licensed, staff has included Condition of Certification **TRANS-1** to require the project owner to obtain roadway permits for vehicle sizes and weights, and truck routes.

21. Pages 4.1-22 and 4.11-23, Construction Truck Traffic: As a result of our revised analysis, please change this section to read as follows:

**Total Construction Traffic**

Per Traffic and Transportation Table 4, ~~the~~ HHSEGS is estimated to generate a maximum of 2,680 daily automobile and truck trips during the peak month with 906~~869~~ trips occurring during the morning peak hour and 906~~869~~ trips occurring during the afternoon peak hour.

The addition of 2,680 ~~2,744~~ daily trips would have a significant impact on the structural integrity of the ~~Old Spanish Trail Highway~~ Tecopa Road within both the State of Nevada and the State of California and could pose a significant public hazard due to the current and future conditions of the roadway pavement. ~~Old Spanish Trail Highway~~ Tecopa Road within Inyo County is approximately 22 feet wide, lacking both shoulders and designed drainage. According to Inyo County, the ~~Old Spanish Trail Highway~~ Tecopa Road was paved around 1971, and is not constructed to current roadway standards and as a result, not built or designed for the proposed heavy construction traffic and the hauling of equipment and materials. A section of the ~~Old Spanish Trail Highway~~ Tecopa Road, known as Emigrant Pass, is a winding section which hinders clear visibility of oncoming traffic. The portion of ~~Old Spanish Trail Highway~~ Tecopa Road within the State of Nevada also lacks shoulders and is not designed for the proposed heavy construction traffic and the hauling of equipment and heavy materials.

Inyo County Public Works Department (ICPW) submitted a letter dated April 30, 2012 (INYO 2012h) regarding access and circulation issues. ICPW expressed concern of potential vehicular truck-related conflicts at Emigrant Pass; additional right-of-way for acceleration and deceleration lanes; sufficient entrance drives; appropriate signage and traffic control; internal circulation and an interpretive stop.

Based on AFC Table 5.12-7 - Project Trip Distribution (HHSG 2001a), truck traffic to and from the west is not expected as all truck traffic is proposed to utilize SR-160 within the State of

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Nevada to the project site. Therefore, based on this trip distribution; and the public safety concern of oversized trucks maneuvering through the narrow widths of the ~~Old Spanish Trail Highway~~ Tecopa Road lacking shoulders or turnouts, staff recommends Condition of Certification **TRANS-4**, which requires all truck traffic utilize SR-160.

In order to accommodate the increased vehicle traffic, Inyo County has requested additional right-of-way along ~~Old Spanish Trail Highway~~ Tecopa Road which would provide for acceleration and deceleration lanes. Therefore, staff has recommended Condition of Certification **TRANS-2** to require the project owner dedicate 24-feet of right-of-way along ~~Old Spanish Trail Highway~~ Tecopa Road where turn pockets will be located, and Condition of Certification **TRANS-3**, which requires that the project owner repair and restore the portion of Tecopa Road damaged during construction activities.

As previously discussed, the project site and the surrounding private lands are characterized by a grid pattern of unpaved private roads that were established when the area was subdivided in the 1970s for residential development. Inyo County has stated to accommodate the proposed HHSEGS, the roads would have to be abandoned. However, this requirement is disputed by the Applicant. **Traffic and Transportation Figure 6** depicts the grid pattern of roads within the project area.

Energy Commission staff is continuing to research the appropriate mechanism to abandon the roads, if they need to be abandoned, pursuant to the requirements of the California State and Highways Code (Public Streets, Highways, and Service Easements Vacation Law, Section 8300 et.seq.) and Inyo County. In the FSA, staff will address the abandonment issue and recommend a possible condition of certification, should it be required.

22. Page 4.11-24, Workforce Traffic, 5<sup>th</sup> paragraph: Please clarify the last paragraph as follows:

The operation employees would generate 240 vehicle daily trips (in/out). However, out of the 240 vehicle trips, only 40 employee vehicle trips would be generated during the morning peak hours and the remaining 80 employee vehicle trips would be generated during the evening peak hours. The 240 daily vehicle trips is a minimal increase to traffic volumes in the area and would have a less than significant impact on overall traffic counts, congestion, and LOS along any of the state highways, roadways, and intersections employees would use to access the project site.

23. Page 4.11-25, Truck Traffic and Hazardous Materials Delivery, 3<sup>rd</sup> paragraph, 1<sup>st</sup> sentence: This sentence is incorrect. The Safety Management Plan required pursuant to Condition HAZ-3 pertains to the off-loading of hazardous materials on the HHSEGS site. It does not pertain to the delivery of hazardous materials while in transit to the site.

24. Page 4.11-27, Compliance with LORS, Table 8: This table should be numbered Table 9. Also, in the row "Section 7.2.4 Roadways and Highways – Policy RH-1.4 Level of Service." Please clarify whether the "Description" is intended for permanent development or just during temporary construction.

25. Page 4.11-30, Traffic Impacts, Table 9: This table needs to be renumbered as Table 10.



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26. Pages 4.11-32 and 33, Hidden Hills Transmission Project, 1<sup>st</sup> paragraph: Please start a new subsection called “Summary” after the first sentence. This paragraph reads like the Hidden Hills Transmission Project would require 1,622 workers.
27. Page 4.11-33, Noteworthy Public Benefits: Please revise to include the following noteworthy public benefits:
- These improvements could include: Re-engineering and repaving Tecopa Road from SR 160 to the project site and adding a right turn pocket at Tecopa Road and SR 160.
- Increased LOS of improved areas after construction is completed.
- Adding deceleration lanes to Tecopa Road at the project would improve the roadway along the project frontage with enhanced traffic patterns.
28. Page 4.11-33, Conclusions, 2<sup>nd</sup> and 3<sup>rd</sup> paragraphs: See the General Document Comments. The information about Socioeconomics is incorrect. There are no Census blocks within the 6-mile radius that have minority populations greater than 50 percent. See also Page 4.9-5 of the Socioeconomics section of the PSA, under the heading, “Minority Populations.”

### **Findings of Fact**

29. Facts 13 and 18 should be deleted because Conditions TRANS-1 and TRANS-6 should be deleted. Please see our comments on these proposed conditions under the Traffic General Comments and as later in this document.

### **Conditions of Certification**

30. Page 4.11-35, TRANS-1: Please delete TRANS-1 in its entirety. Under California law, the transporters, not the customer, are responsible for obtaining oversized /overweight permits from relevant jurisdictions. It is unnecessary, burdensome, and inconsistent with previous CEC projects to require that these permits be submitted to the CEC by the project owner.
31. Page 4.11-35, TRANS-2: Please revise as follows:

#### **TRANS-2 Right-of-Way**

Sixty (60) days prior to the start of construction, the project owner shall submit to the CPM a traffic study that will identify improvements along Tecopa Road in the vicinity of entrances to the project site that are necessary to provide adequate acceleration/deceleration lanes for construction traffic. Upon approval of the this traffic study, the project owner shall offer to dedicate to the County of Inyo the land identified in the traffic study that is necessary to accommodate these acceleration/deceleration lanes. Prior to any ground disturbance, improvements, or obstruction of traffic within any public road, the project owner shall dedicate to the County of Inyo 24 feet of right-of-way along Old Spanish Trail Highway for the length of HHSEGS site.

**Verification:** Upon approval of the traffic plan, the project owner shall construct the traffic improvements specified in the plan. In addition, the project owner shall provide evidence to the CPM that it has made an offer of dedication of the necessary right-of-way to the County, and shall inform the CPM when the County has accepted this offer d, if accepted by the

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County. Prior to the start of construction, the project owner shall provide evidence to the CPM that the dedication of right-of-way to Inyo County has been completed.

32. Page 4.11-36, TRANS-3: Please revise as follows:

**TRANS-3 Restoration of All Public Roads, Easements, and Rights-of-Way**

The project owner shall restore all portions of Tecopa Road, from the project site to the intersection of SR 160 that have been damaged due to project-related construction activities to original or near-original condition in a timely manner, as directed by the CPM.

~~The project owner shall restore all public roads, easements, and rights-of-way that have been damaged due to project-related construction activities. Restoration of significant damage which could cause hazards (such as potholes or deterioration of the pavement edges, damaged signage) must take place immediately after the damage has occurred. The restoration shall be completed in a timely manner to the road's original condition or better in compliance with the applicable jurisdiction's specifications.~~

**Verification:** Repair of significant damage that could cause hazards (such as potholes or deterioration of the pavement edges, damaged signage) must take place immediately after the damage has occurred. Prior to the start of site mobilization, the project owner shall photograph or videotape all of the affected public roads, easements, right-of-way segment(s), and/or intersections Tecopa Road from the project site to the intersection of SR 160 and shall provide the CPM and Inyo County with a copy of these images.

~~The project owner shall provide the photograph or videotape notice to the CPM, and the affected jurisdictions (California Department of Transportation (CalTrans), Nevada Department of Transportation, and Inyo County. The purpose of this notification is to request that these jurisdictions consider postponement of any planned public right-of-way repair or improvement activities in areas affected by project construction until construction is completed, and to coordinate any concurrent construction-related activities that cannot be postponed.~~

Within 60 calendar days after completion of construction, the project owner shall meet with the CPM and Inyo County to identify sections of public right-of-way to be repaired. At that time, the project owner shall establish a schedule to complete the repairs and to receive approval for the action(s). Following completion of these repairs, the project owner shall provide the CPM a letter signed by the County of Inyo stating their satisfaction with the repairs. If damage to public roads, easements, or rights-of-way occurs during construction, the project owner shall notify the CPM and the affected jurisdiction(s) to identify the section of the public right-of-way to be repaired. At that time, the project owner shall establish a schedule for completion and approval of the repairs. Following completion of any public right-of-way repairs, the project owner shall provide the CPM letters signed by the affected jurisdiction(s) stating their satisfaction with the repairs.

33. Pages 4.11-36 and 37, TRANS-4: Please revise TRANS-4 as follows:

**TRANS-4 – Truck Route**

The project owner shall require all construction truck traffic originating outside of Inyo County not use Tecopa Road west of the project site use State Route 160 (SR160) to the

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~~project site.~~ Throughout the construction and operation of the project, the project owner shall ~~document, investigate, evaluate, and attempt to resolve all project truck related~~ legitimate complaints concerning the use of Tecopa Road west of the project site by any construction trucks not originating in Inyo County.

**Verification:** The project owner shall prohibit use of Tecopa Road west of the project sites in its contracts for deliveries originating outside of Inyo County and provide the CPM with a copy of the instructions to be used in such contracts specifying the truck route. The project owner shall retain copies of all such contracts for inspection by the CPM for 1 year following commercial operation.

The project owner or authorized agent shall:

- Use the Traffic Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each traffic complaint of construction trucks originating outside of Inyo County using Tecopa Road west of the project site;
- Attempt to contact the person(s) making the traffic complaint within 24 hours;
- Conduct an investigation to determine the transportation company in the complaint and;
- Within 5 days of receipt of a truck route complaint, submit a report documenting the complaint and actions taken completed Traffic Complaint Resolution Form to the CPM.

~~The report shall include: a complaint summary, including the final resolution and, if obtainable, a signed statement by the complainant stating that the truck route problem has been resolved to the complainant's satisfaction.~~

**Verification:** ~~The project owner shall include this specific route in its contracts for truck deliveries and provide the CPM with a copy of the transmittal letter to the contractors specifying the truck route.~~

34. Pages 4.11-37 and 38, TRANS-5: Please revise TRANS-5 as follows:

**TRANS-5 Traffic Control Plan, Heavy Hauling Plan, and Parking/Staging Plan**

Prior to the start of construction of the HHSEGS, the project owner shall prepare a Traffic Control Plan (TCP) for the HHSEGS's construction and operations traffic. The TCP shall address the movement of workers, vehicles, and materials, including arrival and departure schedules and designated workforce and delivery routes.

The project owner shall consult with the ~~Department of Transportation (Caltrans)~~ District 9 office, ~~Nevada Department of Transportation (NDOT)~~ and Inyo County in the preparation and implementation of the Traffic Control Plan (TCP). The project owner shall submit the proposed TCP to Caltrans District 9, NDOT, and Inyo County in sufficient time for review and comment, and to the CPM for review and approval prior to the proposed start of construction and implementation of the plan.

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**Verification:** At least 60 calendar days prior to the start of construction, the project owner shall submit the TCP to the applicable agencies for review and comment and to the CPM for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to the agencies requesting review and comment.

At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from the agencies, along with any changes to the proposed development plan, to the CPM for review and approval.

The Traffic Control Plan (TCP) shall include:

- Provisions for redirection of construction traffic with a flag person as necessary to ensure traffic safety and minimize interruptions to non-construction related traffic flow;
- Placement of necessary signage, lighting, and traffic control devices at the project construction site and lay-down areas;
- A heavy-haul plan addressing the transport and delivery of heavy and oversized loads requiring permits from ~~Department of Transportation (Caltrans), Nevada Department of Transportation (NDOT)~~ other state or federal agencies, and/or the affected local jurisdictions;
- Location and details of construction along affected roadways at night, where permitted;
- Temporary closure of travel lanes or disruptions to street segments and intersections during construction activities;
- Traffic diversion plans (in coordination with the County of Inyo and NDOT) to ensure access during temporary lane/road closures;
- Access to residential and/or commercial property located near construction work and truck traffic routes;
- ~~Insurance of~~ Ensure access for emergency vehicles to the project site;
- Advance notification to residents, businesses, emergency providers and hospitals that would be affected when roads may be partially or completely closed;
- A plan for monitoring LOS during construction on SR 160 and ~~Old Spanish Trail Highway/Tecopa Road~~. The applicant shall ~~report record~~ report record LOS findings ~~to the Energy Commission's CPM once a week during the afternoon peak hour during the 3 peak construction months and report monthly to the Energy Commission's CPM in the monthly compliance reports as necessary;~~
- Assessment and implementation, if needed, of coordinated work hours and arrival/departure times outside of peak traffic;
- A coordinated park-and -ride program or rideshare program designed to transport construction workers to the project site via a van or bus service.
- Identification of safety procedures for exiting and entering the site access gate;

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- Parking/Staging Plan (PSP) for all phases of project construction and for project operation.

**Verification:** ~~At least 60 calendar days prior to the start of construction, the project owner shall submit the TCP to the applicable agencies for review and comment and to the CPM for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to the agencies requesting review and comment.~~

~~At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from the agencies, along with any changes to the proposed development plan, to the CPM for review and approval.~~

35. Page 4.11-38, TRANS-6: Please delete TRANS-6 in its entirety. As with TRANS-1, this requirement is established law and is the responsibility of the transporter, not the customer, and is therefore unnecessary, burdensome, and inconsistent with previous CEC projects.
36. Pages 4.11-38 and 39, TRANS-7: Condition TRANS-7 is acceptable with the following change to the 2<sup>nd</sup> paragraph of the Verification:

Within 5 days of completion of the solar power tower ~~exhaust stack~~ construction and prior to plant operation, the project owner shall install and activate permanent obstruction marking and lighting consistent with FAA requirements and shall inform the CPM in writing within 10 days of installation and activation. The lighting shall be inspected and approved by the CPM (or designated inspector) within 30 days of activation.

37. Pages 4.11-39 and 40, TRANS-8: Please make the following changes to TRANS-8:

**TRANS-8 Heliostat Operations Positioning and Monitoring Plan**

The project owner shall prepare a Heliostat Operations Positioning and Monitoring Plan (HPMP) that ~~would accomplish the following:~~ avoid potential for human health and safety hazards from solar radiation exposure.

**Verification:** ~~At least 90 days prior to commercial operation of and either of the two HHSEGS Solar Receiver Steam Generators, the project owner shall submit the Heliostat Positioning and Monitoring Plan to the CPM for review and approval. The project owner shall also submit the plan to Inyo County Airport Land Use Commission for review and comment and forward any comments received to the CPM. The project owner shall not test or operate the project until the HPMP is approved by the CPM.~~

The Heliostat Positioning and Monitoring Plan would accomplish the following:

1. Identify potential sensitive receptors and receptor locations including observers in aircraft, residential observers, local pedestrian and hikers, motorists on Tecopa Road, and motorists who could access locations closer to the project;
2. Prepare a HPMP that would avoid potential for human health and safety hazards at locations of sensitive receptors including the potential for momentary-solar radiation

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exposure to occur greater than the Maximum Permissible Exposure (MPE) thresholds of significance of 10kw/m<sup>2</sup> (for a period of 0.25 seconds or less).

- ~~a. MPE for momentary exposure (for a period of 0.25 second or less) is 2~~
- ~~b. MPE for continuous exposure (for a period greater than 0.25 second) is 1 kw/m2~~
- 3. Identify the heliostat movements and positions that could result in exposure of the identified observers to reflected solar radiation from heliostats and integrate these into the HPMP, to the extent possible, for exposure avoidance (forbidden zones) during all heliostat positioning transitions using defined safe path algorithms;
- 4. The HPMP will identify the set of heliostat movements and positions which would occur during reasonably possible malfunctions, which could lead to potential exposure of observers at locations outside the site and integrate these into the HPMP defined safe path algorithms.
- 5. Prepare a HPMP that would:
  - a) Verify that the HPMP would avoid the potential for human health and safety hazards at locations of sensitive receptors,
  - b) Verify the HPMP minimizes the potential for direct heliostat solar reflections using the defined safe path algorithms,
  - c) Provide requirements and procedures to document, investigate and resolve complaints regarding glint and/or glare exposure from the heliostats.

The monitoring plan should be coordinated with the CPM and Inyo County Airport Land Use Commission and be updated on an annual basis for the first 5 years, and at 2-year intervals thereafter for the life of the project as need basis, based on any legitimate complaints received.

**Verification:** ~~At least 90 days prior to commercial operation of any of the two HHSEGS Solar Receiver Steam Generators, the project owner shall submit the Heliostat Positioning and Monitoring Plan to the CPM for review and approval. The project owner shall also submit the plan to Inyo County Airport Land Use Commission for review and comment and forward any comments received to the CPM. The project owner shall not test or operate the project until the HPMP is approved by the CPM.~~

- 38. Page 4.11-40, TRANS-9: TRANS-9 is acceptable to the Applicant.
- 39. Page 4.11-41, Traffic Complaint Resolution Form: Please remove the items in the next-to-last cell of the complaint form. They are not appropriate for this form.

<b>Approximate cost of corrective measures:</b> \$ _____
<b>Date installation completed:</b> _____
<b>Date first letter sent to complainant:</b> _____ (copy attached)
<b>Date final letter sent to complainant:</b> _____ (copy attached)

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40. Page 4.11-56, Appendix TT-1, Conclusions: Delete the first sentence of the Conclusions. The first sentence contradicts the remainder of the paragraph. Staff does not have a significance criteria addressing the glare effects of the SRSG. Therefore, how can staff make a determination of a significant and unmitigable impact?

## **TRANSMISSION LINE SAFETY AND NUISANCE**

### **General Comments**

No general comments.

### **Specific Comments**

1. Page 4.12-1, Summary of Conclusions, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: The PSA-is referencing the lines in Nevada, outside the CEC's jurisdiction. Discussion needs to be limited to onsite transmission lines. Comment is referring to the following text in the first sentence: "...that construction and operation of either of the two candidate transmission lines..."
2. Page 4.12-3, Setting, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: The following text should be added to the end of the 1<sup>st</sup> sentence: "and a 103-acre Common Area for a total plant size of 3,096 acres."
3. Page 4.12-3, Setting, 1<sup>st</sup> paragraph, 3<sup>rd</sup> sentence: The project size is 3,096 acres (per general comment). The third sentence should be revised to reflect the correct project size.
4. Page 4.12-4, Setting, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: This sentence is confusing because the PSA is talking about the aboveground versus underground segments. Note the use of the following text: "Each transmission line option..."
5. Page 4.12-4, Setting, 2<sup>nd</sup> paragraph, 1<sup>st</sup> sentence: This sentence is confusing because the PSA is talking about the aboveground versus underground segments. Note the use of the following text: "two candidate connecting lines..."
6. Page 4.12-4, Project Description, 1<sup>st</sup> paragraph, last three sentences: These three sentences require updating once the EIS is published.
7. Page 4.12-4, Project Description, 2<sup>nd</sup> paragraph: Please see the revised transmission system project description in the General Document Comments.
8. Page 4.12- 5, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: Valley Electric Associate (VEA) would be the owner of most of the 230-kv facilities beyond the gen-tie. Replace "Southern California Edison (SCE)" at the end of this sentence with "VEA."

### **Findings of Fact**

No findings of fact listed.

### **Conditions of Certification**

9. Page 4.12-12, Proposed Conditions of Certification: General comment for this section— Make sure to state that the COCs are only applicable to California segments of the transmission lines.



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10. Page 4.12-12, TLSN-1, 1<sup>st</sup> sentence: Please revise as follows:

**TLSN-1** The project owner shall construct the ~~onsite chosen~~ 230-kV or 500-kV transmission line according to the requirements of California Public Utility Commission's GO-95, GO-52, GO-131-D, Title 8, and Group 2, High Voltage Electrical Safety Orders, sections 2700 through 2974 of the California Code of Regulations, GO-128 (in the case of any underground segment), and SCE's EMF-reduction guidelines.

**Verification:** At least 30 days before starting the construction of the chosen line option and related facilities, the project owner shall submit to the Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming that the lines will be constructed according to the requirements stated in the condition.

11. Page 4.12-12, TLSN-2, 1<sup>st</sup> sentence: Please revise as follows:

**TLSN-2** The project owner shall use a qualified individual to measure the strengths of the electric and magnetic fields from the ~~onsite gen-tie chosen~~ line at the points of maximum intensity along its route. The measurements shall be made after energization according to the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) standard procedures. These measurements shall be completed ~~nonot~~ later than six months after the start of operations.

**Verification:** The project owner shall file copies of the post-energization measurements with the CPM within 60 days after completion of the measurements.

12. Page 4.12-12, TLSN-3, 1<sup>st</sup> sentence: Please revise as follows:

**TLSN3** The project owner shall ensure that all permanent metallic objects within the California right-of-way of each of the ~~onsite chosen~~ project lines are grounded according to industry standards.

**Verification:** At least 30 days before the lines are energized, the project owner shall transmit to the CPM a letter confirming compliance with this condition.

## TRANSMISSION SYSTEM ENGINEERING

### General Comments:

1. Global: Page 5.5-1: Project name should be stated as follows: Hidden Hills Solar Electric Generating ~~Station~~ System (HHSEGS)

### Specific Comments:

2. Page 5.5-1, Summary of Conclusions, 2<sup>nd</sup> paragraph, last sentence: Please find attached the Valley Electric Associated Queue Cluster Alpha Phase I contained in the Appendix at the end of this document.
3. Page 5.5-4, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: It is unclear where the value of "297 MW" for the SRSGs has come from. Perhaps the following language would be better:

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The SRSG and Steam Turbine for each plant will generate a gross output of 270 MW. The plant will consume 20 MW for auxiliary loads resulting in a net power output of 250 MW per plant or 500 MW for the two plant project. From the generator terminals electric power will proceed through a gas-insulated (SF6) generator circuit breaker to the generator step-up (GSU) transformer for transmission to the grid and to the auxiliary transformer supplying power to the plant. The GSU transformer, rated at 210/280/350 megavolt amperes (MVA), will step-up the generator voltage to the 230 kilovolt (kV) grid voltage. The high side of the GSU transformer will be connected to the HHSEGP Switchyard through an underground segment of an appropriately sized 230 kV cable to the edge of the solar field and then transition to a 230 kV overhead line segment of 795 kcmil ACSR cable per phase connecting to the Switchyard.

4. Page 5.5-4, Interconnection Facilities, 1<sup>st</sup> paragraph: The AFC says 795-kcmil "DRAKE" ACSR conductor.
5. Page 5.5-4, Interconnection Facilities, Options 1 and 2: These paragraphs need to be revised. The transmission route has been modified by VEA. The General Document Comments at the beginning of this document contain the revised information.

### **Findings of Fact**

No findings of fact were listed.

### **Conditions of Certification**

Global: The text "onsite" should be inserted in front of the text "transmission line(s)." Since the CEC's jurisdiction is limited to the onsite transmission lines.

6. Page 5.5-10, TSE-1, Verification, 1<sup>st</sup> sentence: Please change "60 days" to "30 days":

**TSE-1** The project owner shall furnish to the Compliance Project Manager (CPM) and to the Chief Building Official (CBO) a schedule of transmission facility design submittals, a Master Drawing List, a Master Specifications List, and a Major Equipment and Structure List for all facilities located on the Project site.. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide designated packages to the CPM when requested.

**Verification:** At least ~~30~~60 days prior to the start of construction (or a lesser number of days mutually agreed to by the project owner and the CBO), the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the CBO ~~and to the CPM~~. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major equipment in **Table 1: Major Equipment List** below). Additions and deletions shall be made to the table only with ~~CPM and~~ CBO approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

**Transmission System Engineering Table 1  
Major Equipment List**

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Breakers
Step-Up Transformer
Switchyard
Busses
Surge Arrestors
Disconnects
Take Off Facilities
Electrical Control Building
Switchyard Control Building
Transmission Pole/Tower
Grounding System

7. Page 5.5-11, TSE-2: Please revise TSE-2 as follows. The CBO's approvals can be obtained from the CBO's Web site for the project. They should not have to be provided separately to the CPM.

**TSE-2** Prior to the start of construction, the project owner shall assign an electrical engineer and at least one of each of the following to the project: A) a civil engineer; B) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; C) a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; or D) a mechanical engineer. (Business and Professions Code Sections 6704 et seq. require state registration to practice as a civil engineer or structural engineer in California).

**Verification:**

**Protocol:** The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (e.g., proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The on-site transmission line may be the responsibility of a separate California-registered electrical engineer. The civil, geotechnical or civil, and design engineer assigned in conformance with Facility Design condition **GEN-5**, may be responsible for design and review of the TSE facilities.

**Protocol:** The project owner shall submit to the CBO for review and approval, the names, qualifications, and registration numbers of all engineers assigned to the project. If any one of the designated engineers is subsequently reassigned or replaced, the project owner shall

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submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. ~~The project owner shall notify the CPM of the CBO's approval of the new engineer.~~ This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to predicted conditions used as a basis for design of earthwork or foundations.

**Protocol:** The electrical engineer shall:

Be responsible for the electrical design of the power plant switchyard, outlet and termination facilities; and

Sign and stamp electrical design drawings, plans, specifications, and calculations.

**Verification:** ~~At least 30 days prior to the start of rough grading (or a lesser number of days mutually agreed to by the project owner and the CBO), the project owner shall submit to the CBO for review and approval, the names, qualifications, and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the engineers within five days of the approval.~~

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. ~~The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.~~

8. Page 5.5-12, TSE-3: No comments.
9. Page 5.5-12, TSE-4, Verification, last sentence: That information can be obtained from the CBO's Web site. Therefore, delete that text from the end of the sentence:

**TSE-4** For the power plant switchyard, outlet line, and termination, the project owner shall not begin any increment of construction until plans for that increment have been approved by the CBO. These plans, together with design changes and design change notices, shall remain on the site for one year after completion of construction. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. The following activities shall be reported in the Monthly Compliance Report:

1. Receipt or delay of major electrical equipment;
2. Testing or energization of major electrical equipment; and
3. The number of electrical drawings approved, submitted for approval, and still to be submitted.

**Verification:** At least 30 days prior to the start of each increment of construction (or a lesser number of days mutually agreed to by the project owner and the CBO), the project owner shall submit to the CBO for review and approval the final design plans, specifications, and calculations for equipment and systems of the power plant switchyard, outlet line, and termination, including a copy of the signed and stamped statement from the responsible

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electrical engineer attesting to compliance with the applicable LORS, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

10. Page 5.5-13, TSE-5: Please make the following changes. Verification, Item 1: The information in this paragraph will change due to the VEA Cluster Queue Alpha Phase I. The text should be updated according to the study.

**TSE-5** The project owner shall ensure that the design, construction, and operation of the proposed on-site transmission facilities will conform to all applicable LORS, including the requirements listed below. The project owner shall submit the required number of copies of the design drawings and calculations as determined by the CBO.

**Verification:**

1. The ~~HHSEGS~~HHSEGP project will be interconnected to the SCE grid via a 220-kV, 1272 kcmil per phase, and approximately 64 miles long single circuit (generator- tie line). The proposed ~~HHSEGS~~HHSEGP switching station would construct with six 230kV breakers, breaker- and- a- half configuration with 3- bays and 4 positions. The power plant outlet line shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95 and General Order 98 or National Electric Safety Code (NESC), Title 8 of the California Code and Regulations (Title 8), Articles 35, 36, and 37 of the "High Voltage Electric Safety Orders", California ISO standards, National Electric Code (NEC), and related industry standards.
2. Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.
3. Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards.
4. The project conductors shall be sized to accommodate the full output from the project.
5. Termination facilities shall comply with applicable SCE interconnection standards.
6. The project owner shall provide to the CPM:
  - a. The final Detailed Facility Study (DFS) including a description of facility upgrades, operational mitigation measures, and/or Special Protection System (SPS) sequencing and timing if applicable,
  - b. Executed project owner and California ISO Facility Interconnection Agreement.

**Verification:**—At least ~~3060~~ days prior to the start of construction of on-site transmission facilities (or a ~~fewer~~ lesser number of days mutually agreed to by the project owner and CBO), the project owner shall submit to the CBO for approval:

1. Design drawings, specifications, and calculations conforming with CPUC General Order 95 and General Order 98 or NESC; Title 8, California Code of Regulations, Articles 35, 36, and 37 of the "High Voltage Electric Safety Orders"; NEC; applicable interconnection

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standards, and related industry standards for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment.

2. For each element of the on-site transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on “worst-case conditions,”<sup>55</sup> and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or NESC; Title 8, California Code of Regulations, Articles 35, 36 and 37 of the “High Voltage Electric Safety Orders”; NEC; applicable interconnection standards, and related industry standards.
3. Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in responsible charge, a route map, and an engineering description of equipment and the configurations covered by requirements TSE-5 1) through 5) above.
4. The final Detailed Facility Study, including a description of facility upgrades, operational mitigation measures, and/or SPS sequencing and timing if applicable, shall be provided concurrently to the CPM.

11. Page 5.5-14, TSE-6: No comments

12. Page 5.5-14, TSE-7: Please revise as follows:

**TSE-7** The project owner shall be responsible for the inspection of the on-site transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with CPUC GO-95 or NESC; Title 8, CCR, Articles 35, 36 and 37 of the “High Voltage Electric Safety Orders”; applicable interconnection standards; NEC; and related industry standards. In case of non-conformance, the project owner shall inform the CPM and CBO in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

**Verification:** Within 60 days after first synchronization of the project, the project owner shall transmit to the CPM and CBO:

1. “As built” engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC GO-95 or NESC; Title 8, California Code of Regulations, Articles 35, 36 and 37 of the “High Voltage Electric Safety Orders”; applicable interconnection standards; NEC; and related industry standards, and these conditions shall be provided concurrently.
2. An “as built” engineering description of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in responsible charge or acceptable alternative verification. “As built” drawings of the electrical,

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<sup>55</sup> Worst-case conditions for the foundations would include for instance, a dead-end or angle pole.

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mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made available, if requested, for CPM audit as set forth in the "Compliance Monitoring Plan."

3. A summary of inspections of the completed transmission facilities, and identification of any nonconforming work and corrective actions taken, signed and sealed by the registered engineer in charge

## **VISUAL RESOURCES**

### **General Comments**

1. We have reviewed the Visual Resources chapter and our overall assessment is we do not agree with Staff's conclusion that the project would have significant impacts on visual impacts the project area's visual resources.
2. This section of the PSA discusses the potential Visual Resource Impacts from three Key Observation Points (KOPs) in the State of Nevada. Any discussion of the impacts of these facilities in Nevada is in violation of CEQA. CEQA does not apply to any project or portion thereof located outside of California, which will be subject to environmental impact review pursuant to the National Environmental Policy Act of 1969 (NEPA). The transmission lines and gas lines in Nevada will be subject to an Environmental Impact Statement (EIS) prepared by U.S. Bureau of Land Management (BLM). Therefore, all discussion of these facilities in Nevada and all discussion of the impacts of these facilities in Nevada should be deleted from this section of the Staff Analysis.
3. The PSA Visual Resources chapter pays insufficient attention to the policies that establish the context for evaluating the project area landscape's relative importance and sensitivity as a visual resource. For example, the BLM's Land Management Plan has assigned federal lands immediately adjacent to the site a visual resource management classification of IV that permits a high level of visual change. In addition, the Inyo County General Plan does not designate the project site or the area around it as scenic resources. Also, in a July 28, 2009 letter to BLM for the Programmatic Environmental Impact Statement (PEIS) Solar Energy Scoping Process, Inyo County stated that there are "private, undeveloped lands in the Charleston View area (south and west of Pahrump, Nevada) that would be excellent land on which to locate solar production as well as support operations for solar development both in Inyo County and Nevada." Furthermore, in 2011, the County designated the project site and a large area around it as a Renewable Energy Overlay Zone in which large-scale wind, solar, and transmission line projects would be permitted. The County included the project site in the Overlay Zone specifically because it did not contain sensitive scenic resources (Summary of Inyo County Renewable Solar and Wind Energy General Plan Land Use Diagram Overlay Development). While the overlay district designation has been rescinded, the designation was rescinded because of a legal challenge to the procedures under which the Overlay Zone was adopted, not because there was objection to the aesthetic effects of solar energy projects in this location. In summary, the County's and BLM policies consider the project site and surrounding area are as a place where visual change associated with renewable energy



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projects would be appropriate and would not significantly or adversely impact scenic resource values.

4. The PSA Visual Resources chapter places too much emphasis on the scenic values of areas that are not in the viewshed. The project cannot have an adverse visual impact from areas where the project cannot be seen. The Visual Resources chapter should clearly identify the project viewshed as we did in the AFC and restrict its analysis of impacts to those identified within the viewshed.
5. The PSA Visual Resources chapter attributes too much importance to the views of and from the portions of the wilderness areas in the project viewshed:
  - The federal legislation that establishes Wilderness areas. The Wilderness Act 1964, Public Law 88-577 (16 U.S.C. 1131-1136) provides no special protections to lands outside the Wilderness areas, either in terms of protection of views from those outside areas toward the Wilderness areas or in terms of the views from the Wilderness areas into the areas around them. For this reason, it is not valid to assume that viewers in Wilderness areas should have a presumption that the views they see from the Wilderness of lands in the surrounding region should be free of development.
  - Similarly, there is no legal basis for assuming that any view *from* a Wilderness area constitutes a “scenic vista.”
  - The discussion of the Wilderness areas does not include an identification of the portions of these areas that are located within the project’s viewshed. Maps that the Applicant filed with the CEC depict the areas from which the project will and will not be visible and indicate that from much of the Wilderness land in the project vicinity, the project will not be visible.
  - The analysis does not sufficiently weigh the fact that the numbers of people using the Wilderness areas in the project vicinity is small, and that the numbers who are likely to be in the portions of these Wilderness areas in the project viewshed, if any, are likely to be very small.
6. Like the Wilderness areas, the legislation establishing the Spring Mountains National Recreation Area (103rd Congress 1st Session, H.R. 63, Spring Mountains National Recreation Area Act) includes no goals or policies to protect views of or from this area. As a result, there is no legal basis for the PSA to assume that viewers in this recreation area should have an expectation that views from this area into the surrounding landscape should be pristine or that views from this recreation area necessarily constitute “scenic vistas.” From most of the recreation area, the project would not be visible, and to the extent to which the project could be seen, it would be a tiny element in the overall view because the project would be seen from a distance of 10 or considerably more miles.
7. The Old Spanish Trail (OST) and other historic roads and trails in the Pahrump Valley are cultural resources, and as such are protected by state and federal laws specific to cultural resources. These are described in detail Applicant’s Data Response No. 125. The PSA Visual Resources chapter fails to adequately evaluate the OST as a cultural resource, and is therefore out of compliance with state and federal regulations protecting cultural resources. These regulations require (among other things) detailed knowledge of the resource’s

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location, integrity (normally not all segments of a linear resource are “contributing segments”), historical context, and jurisdictional status prior to an analysis of potential impacts. This analysis is properly the domain of the Cultural Resources Staff. Hence, conclusions regarding impacts to the OST made in this chapter are deeply flawed from both a regulatory as well as a technical standpoint and should be deleted in their entirety.

8. The PSA assumes very low thresholds for determining what constitutes a “large” number of viewers. This threshold appears to have been changed from previous analyses the Commission has prepared. Why was this change made? What data was relied on in making this change? What was the consultation and decision-making process for making this significant modification of the standards? Please clarify.
9. The PSA attributes significant adverse impacts from locations that were not subject to KOP analysis and to areas that are not proven to have any actual viewers. What substantial evidence supports these determinations?
10. Proposed Condition of Certification VIS-6 reflects an acknowledgement that for many viewers, the proposed project may be a feature of positive visual interest and may be considered to have aesthetically attractive features. This fact is given no weight in the analysis, however. As a result, the PSA fails to, but should, account for the full range of likely viewer opinion and consideration of the project’s visual qualities.
11. This chapter’s discussion of Environmental Justice populations within Census blocks must be revised to be consistent with the analysis set forth in the PSA’s socioeconomic impacts analysis. .

### **Specific Comments**

12. Page 4.13-3, Regional Setting, 3rd paragraph: The PSA states: “Visual Resources Figure 1 shows the relationship between the proposed project site and the wilderness and recreation areas described above and the national historic trail in the area. Figure 1 clearly shows the ‘bowl’ whose bottom is the project site and whose sides are made up of areas of high scenic quality. It is this high-quality scenic landscape which is the backdrop for the proposed industrial-scale development of HHSEGS.”

Figure 1 does not document the scenic quality of the project area landscape. Figure 1 only depicts roads, communities, jurisdictional boundaries, and the boundaries of designated wilderness and recreational areas, but does not identify scenic qualities of the landscape; therefore, “high quality scenic landscape” is an unwarranted conclusion to be drawn from this figure and it is not supported by substantial evidence. In addition, Figure 1 shows regional uses outside the viewshed of the project. For visual resource analysis purposes, areas outside the viewshed are irrelevant.

“Industrial-scale” is a subjective and undefined term, which biases the PSA’s analysis. The project is large-scale, but if it is to be compared to industry, the PSA should explain which “industry.”

13. Page 4.13-3, Regional Setting, 4th paragraph: The PSA states: “The proposed project site is privately-owned land located in an area where most of the land is publicly-owned or managed by the Bureau of Land Management (BLM). The BLM lands surrounding the project

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site have been inventoried by the respective California and Nevada BLM field offices and both Visual Resource Inventory (VRI) and Visual Resource Management (VRM) classes have been applied.”

The accuracy of the above statements depends on the definition of the phrase “the area.” The viewshed? The region outside the viewshed? The foreground, middleground, or background? It would be more accurate to state that “The proposed project site is privately-owned land. The land immediately adjacent to the project is privately owned land and BLM land. The land in middleground and background views of the project is a mix of BLM and private land.”

The project site, which is a triangular shape is bounded by BLM lands on one side. BLM lands do not “surround” the project site. A mix of BLM and private lands surround the Charleston View area.

14. Page 4.13-4, Regional Setting, 3rd full paragraph: The PSA states: “Visual Resources Figure 3 shows the Visual Resource Inventory Classes for the BLM lands in the vicinity of the project area. Nearly 50 percent of the land shown in Figure 3 is Class I, areas of the highest scenic quality and viewer sensitivity. These Class I areas extend beyond the boundaries of the wilderness areas. The Class II areas are seen in both mountains and valleys adjacent to Class I areas and on the Pahrump Valley floor. Class III areas appear to be the smallest component of the areas shown in the figure. Class IV are found mostly in the Pahrump Valley. The figure demonstrates that, according to the BLM rating system, there is a generally a high degree of scenic quality in the vicinity of the project site.”

It is not true that 50 percent of the land shown in Figure 3 is Class I. Much less than 50 percent is Class I. However, the relevant question is not how much Class I is within Figure 3, but how much Class I is within the viewshed. Many of the Class I areas depicted in Figure 3 are not within the viewshed.

The whole paragraph is an incorrect and biased characterization of Figure 3. The entire Nevada side of the project viewshed is Class II, III, and IV lands. The southern side of the project is private lands adjacent to the project and Class I lands in the distance. To the west of the Project are private lands adjacent to the project, Class III in the mid-range, and Class I in the distance. Figure 3 demonstrates that within the project viewshed, according to the BLM rating system, there is a low to moderate degree of scenic quality on three sides of the project in the midrange, and a higher degree of scenic quality to the south and west in the distance.

15. Page 4.13-4, Regional Setting, 4th full paragraph: The PSA states: “Visual Resources Figure 4 shows the VRM classes assigned to the area in the most recent RMP. Note the significant migration of Class I areas to Class II, III and IV, and the significant downgrade of the valley floor and alluvial fans to Class III and IV. The only remaining Class I designations are the Nopah and Pahrump Valley Wilderness Areas. The two figures clearly illustrate the high degree of scenic quality that exists with the viewshed of the proposed project site.”

This statement is not supported by Visual Resource Figure 4. The Visual Resource Management classes shown on Visual Resource Figure 4 are not indicators of visual quality, but are rather indicators of the policy decisions BLM has made in developing its Resource

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Management Plan about how much visual change it has decided it will permit in specific areas. What Figure 4 shows is that the areas to the southeast, south, and west of the project site are private lands that are not under BLM jurisdiction, and where no visual resource management objectives have been assigned. The lands immediately adjacent to the project site on the east are BLM lands that have been designated as VRM Class IV, an area in which a high degree of visual change is permitted. The valley lands to the south of the large area of private land south of the project site have been assigned a VRM Class III classification, which permits a moderate level of visual change. The lands to the west of the private lands that border the project site on the west have been given a Class II designation.

16. Page 4.13-11, Visual Resources Table 2 (Applicable Laws, Ordinances, Regulations, and Standards), LOCAL, Row 1 – Policy and Strategy Description: The PSA states: “The proposed project would be located in parcels currently designated as REC, Resort/Recreational and OSR, Open Space and Recreation.”

This is not correct. See Land Use section.

17. Page 4.13-11, Visual Resources Table 2 (Applicable Laws, Ordinances, Regulations, and Standards), LOCAL, Row 2 – Policy and Strategy Description: The PSA states: “The County shall require landscaping to screen industrial uses.”

It is not clear that the County considers this an “industrial” use.

18. Page 4.13-11 Visual Resources Table 2 (Applicable Laws, Ordinances, Regulations, and Standards), LOCAL, Row 3 – Policy and Strategy Description: The PSA states: “The County shall require undergrounding of utility lines in new development areas...except where infeasible for operational or financial reasons. Additional implementation measures are found in Table 4-4, page 4-44.”

It is not clear that this is considered to be a “new development area.” This area has been subdivided and under development for decades.

19. Page 4.13-11, Visual Resources Table 2 (Applicable Laws, Ordinances, Regulations, and Standards), LOCAL, Row 4 – Policy and Strategy Description: The PSA states: “The County shall promote efficient water use by encouraging and enforcing water-conserving landscaping and other measures.”

This is not a Visual Resource LORS, although it mentions landscaping.

20. Page 4.13-11, Visual Resources Table 2 (Applicable Laws, Ordinances, Regulations, and Standards), LOCAL, Row 7 – Policy and Strategy Description: The PSA states: “The County shall consider the visual and environmental impacts associated with placement of regional conveyance corridors. Table 7-7, page 7-33, lists implementation measures.”

What is a conveyance corridor? Does the project propose one in the County?

21. Page 4.13-12, Visual Resources Table 2 (Applicable Laws, Ordinances, Regulations, and Standards), LOCAL, Row 10 – Policy and Strategy Description: The PSA states: “Within communities, building equipment shall be screened from public view.”

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It is not clear that the Project is proposed “within a community” as that term is used in the ordinance.

22. Page 4.13-12, Visual Resources Table 2 (Applicable Laws, Ordinances, Regulations, and Standards), LOCAL, Row 13 – Policy and Strategy Description: The PSA states: “Maximum height of buildings in OS Zone: Principal buildings 30 feet, accessory buildings 25 feet.”

This is not a Visual Resource LORS any more than other zoning code provisions that address the dimension, location, or appearance of structures.

23. Page 4.13-12, Visual Resources Table 2 (Applicable Laws, Ordinances, Regulations, and Standards), LOCAL, Row 14 – Policy and Strategy Description, 1st bullet: The PSA states:

“Potential adverse impacts may include scenic views which may be blocked or degraded, which may affect the attractiveness of the County for tourism. Other impacts may include light and glare. The County requires that adverse impacts are avoided or acceptably mitigated.”

This is not an Applicable LORS. This is a declaration in the ordinance, but not adopted as part of the County code.

24. Page 4.13-15 A. Scenic Vista, 1st paragraph: The PSA states: “For the purposes of this analysis, a scenic vista is defined as a distant view of high pictorial quality perceived through and along a corridor or opening, or from a designated scenic area.”

This is a novel definition. The question should be, according to the CEQA guidelines: Is the project site located in a *designated* scenic vista, or has the County designated the project site as an important visual resource? Are any of the roadways abutting or surrounding the project site designated or proposed scenic roadways? Are any KOPs identified as a designated scenic vista? The PSA should explain the legal basis for its definition of the term “scenic vista” and explain that the PSA uses such term in a manner that is not supported by CEQA or the CEQA Guidelines.

25. Page 4.13- 15 A. Scenic Vista, 2nd paragraph: The PSA states: “Yes. As seen in Visual Resources Figures 1 and 3, the project is surrounded by identified areas of high scenic value.”

An “identified area of high scenic value” is not a designated scenic vista.

26. Page 4.13- 15 A. Scenic Vista, 2nd paragraph: The PSA states: “Views of the Nopah Range and Wilderness Area, Kingston Range and Pahump Valley Wilderness Area and Spring Mountains National Recreation Area, including the prominent Mt. Charleston, would all be significantly and adversely impacted by the project.”

A mere view of a mountain range is not a designated scenic vista. Moreover, there is no evidence to support this sweeping assertion. From which KOP in California does the project “significantly and adversely” impact a designated scenic viewpoint?

Wilderness status protects the land that lies within the boundaries of the wilderness area, but there is no legal basis for presuming that this status provides for special treatment for views *toward* the wilderness area from locations outside of it.

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27. Page 4.13- 15 A. Scenic Vista, 2nd paragraph: The PSA states: “As described earlier, these areas were inventoried by the BLM as Classification 1, the highest scenic value that can be assigned. Views from these scenic resources will also be impacted in a significant and adverse way”

This statement reflects a misunderstanding of the BLM VRM classifications. The VRM classifications that BLM assigns in preparing its Resource Management Plans are intended to identify the amount of visual change permitted on the lands to which the classifications are assigned, and have absolutely no bearing on the amount of visual change allowed in the views from those areas.

This is a misapplication of the VRM analysis. The question for VRM analysis is not questions of views from these federal areas, but rather what changes in visual character should be allowed in the area where the project is located? The PSA analysis should be revised so that it correctly applies the BLM VRM classifications in the manner intended by applicable law.

28. Page 4.13- 15 A. Scenic Vista, 2nd paragraph: “as will some views from alignments of the Mormon and Old Spanish National Historic Trails.”

These “alignments” are not designated scenic vistas.

An “alignment” is not a viewer. The relevant question is whether there are a significant number of viewers who are even aware of the alignment, if they will be present along this alignment, whether the project is visible from the alignment, and if so, how the views will be impacted.

29. Page 4.13-15 A. Scenic Vista, 3rd paragraph: The PSA states: “KOPs 5 and 7 clearly show the impact of the project on the existing scenic view of Mt. Charleston, a prominent landmark of importance in pre-history and current times.”

On the contrary, these simulations make it clear that in these views, the project will not block or otherwise interfere with views toward Mount Charleston’s peak or ridgeline.

These KOPs are neither designated scenic vistas nor scenic roads. It is a mistake to equate a mere “visual disturbance” on a scenic view with a “substantial adverse effect” on a designated scenic vista.

30. Page 4.13-15 A. Scenic Vista, 4th paragraph: The PSA states: “KOP 3 manifests the negative impact of the project on the motorists’ view of the highly scenic Nopah Range and Wilderness Area.”

The roadway from which this view is seen is not a designated scenic highway and does not qualify as a scenic vista. In addition, the standard for a finding of significant impact is substantial adverse impact, not negative impact. Comparison of the existing view with the simulation of the view as it would appear with the project in place indicates that the current view already contains modifications, and that the visual changes brought about by the project would not constitute a “substantial degradation.”

31. Page 4.13-16 Project Site and Construction Laydown Area: The PSA states: “Construction activities at the project site and construction laydown area would substantially degrade the



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visual character or quality of the site and surrounding areas as viewed from KOPs 3, 4, 5 and 7, due in large part to the construction of the power towers.”

Construction activities are temporary. Can temporary impacts be substantial?

If it has low visibility, see below, how does it substantially degrade the site?

32. Page 4.13-16 Project Site and Construction Laydown Area, 4th paragraph:

“Construction-related truck traffic would be entering and leaving the project by way of what is now known as Topaz Street, at the westernmost boundary of the project site, and would introduce activity into the views not currently seen. The laydown area, where much of the storage and assembly would occur, is approximately one mile north of Old Spanish Trail Highway, and therefore would have low visibility from KOP 3 and the road. The construction of the power towers will be highly visible from all vantage points and therefore produce the most significant visual impact of the project.”

There is no KOP here. There is no assessment of the visual quality. The only activity is traffic, which already occurs at this location. Traffic does not constitute a “substantial degradation” of the visual quality of the site.

Subject characterizations of visual impacts, such as this, which are not supported by a KOP analysis, should be deleted.

33. Page 4.13-16 and 17, Light or Glare, 1st paragraph: The PSA states: “Nighttime construction and security lighting would have the potential to produce glare or off-site light trespass. If bright exterior lights were not shielded or directed onsite, they could introduce significant light or glare to the vicinity, particularly for motorists on Old Spanish Trail Highway, as represented by KOP 3 and 5. This has the potential to cause distraction in the form of glare and confusion as to the light source origin for motorists, who are used to travelling along a fairly dark stretch of highway. Depending upon the project setbacks, without screening and lighting controls, the impact upon motorists on Old Spanish Trail Highway would be adverse and significant.”

The Staff Analysis should analyze the project as proposed. It is legally inappropriate to analyze the project without screening and lighting controls, when these features are proposed as part of the project.

As a prelude to this discussion, there needs to be a clear statement of the kinds of nighttime lighting that will be installed at the site during the construction period and the extent to which it will be used.

There will also be lighting at the laydown area and the heliostat construction area that will be on at night. The AFC analysis provides correct assessment of the impacts of the lighting at laydown and heliostat construction areas, which will be controlled and shielded, and which will be far from offsite viewers and screened to some degree by intervening desert vegetation.

34. Page 4.13-16 and 17, Light or Glare, 1st paragraph: The PSA states: “As the power towers are constructed, aviation safety lighting would need to be operational as the towers reach



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each successive level of lighting required by the FAA. In addition, cranes used in the project construction would also require aviation safety lighting.”

All true, but the cranes are temporary and not a distraction for motorists at distances of several miles.

Has FAA lighting during the construction period been found to be a significant impact on any other project by the CEC or any other California agency?

35. Page 14.13-17, Light or Glare, 1st full paragraph: The PSA states: “The construction lighting and activity have the potential to create significant and unavoidable visual impacts on residents, motorists and other viewers.”

What other viewers? From which KOPs?

36. Page 14.13-17, Light or Glare, 1st full paragraph: The PSA states: “There is no mitigation for reducing the visual impact of the construction and lighting of the power towers, and would remain a significant and unavoidable visual effect.”

The lighting associated with the construction of the power towers will be temporary and short-term in nature, it will not constitute a significant impact. Has construction lighting of the towers or construction period aviation safety lighting found to be significant on any other project?

37. Page 14.13-17, Light or Glare, 2nd full paragraph: The PSA states: “Gas pipeline construction would occur primarily in Nevada on BLM-managed lands. Due to their temporary nature and low visibility, there would be no significant adverse impacts from construction of the pipelines.”

The FSA should not analyze impacts of project in Nevada.

38. Page 14.13-17, Conclusion, 1st paragraph, last sentence: The PSA states: “The adoption of the conditions of certification noted herein will mitigate some of the visual impacts at ground level but there is no mitigation for the visual impacts during construction of the power towers.”

Because any light-related impacts that may occur related to the construction of the power towers will be temporary and short-term, they will be less than significant.

39. Page 4.13-18, KOP 3, 1st paragraph, 2nd to last sentence: The PSA states: “The 17.5 acre campus-style environmental park will function primarily as a columbarium”

Where did this term “environmental park” come from and what does it mean?

40. Page 4.13-18, Visual Sensitivity, 1st paragraph: The PSA states: “The view would be cohesive and highly scenic due to the panoramic nature of the horizon line formed by the Nopah Range were it not for the roadside elements in the foreground and construction activity in the middle ground.”

Therefore, the view is not cohesive or highly scenic. This is like saying it would be a sunny day if it were not for the overcast sky.

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41. Page 4.13-18, Visual Sensitivity, 1st paragraph, last sentence: The PSA states: "The overall scenic and panoramic view at KOP 3 creates moderate-high viewer concern for passing viewers."

Why moderate to high? What is the basis for this statement? This statement is unsupported by substantial evidence.

42. Page 4.13-19 and 20, Visual Change, 1st paragraph, last sentence: The PSA states: "But the towers do interrupt the highly scenic panoramic of the Nopah Range and Wilderness Area, therefore view disruption is moderate."

Where overall viewer sensitivity is moderate and view disruption is moderate, does the CEC typically find the impact "substantially degrades" the visual quality of the site or the surroundings? Please explain the applicable thresholds of significance and how they are being applied in this case. Conclusory statements unsupported by substantial evidence, such as this, violate CEQA.

43. Page 4.13-20, 1st full paragraph: The PSA states: "This would create a potentially higher incidence of visual distraction from the motorist's perspective at KOP 3."

Visual distraction or visual interest?

44. Page 4.13-20, 1st full paragraph: The PSA states: "If the sun were low in the horizon to the south (as in the winter months) or to the west (as in the summer months), the visual dominance and the potential view disruption of the scattering effect of light would add to the overall visual change, which under these circumstances would now both be characterized as high. This results in the overall visual change at KOP 3 as high."

Please explain in the analysis how often and for how long are these circumstances expected to occur.

45. Page 4.13-20, 2nd full paragraph: The PSA states: "The contrast and dominance of the project structures in the landscape as seen in the simulation are high and the view disruption of the Nopah Range is high. The overall visual change at KOP 3 is high."

These characterizations are not reflected in KOP 3.

46. Page 4.13-20 KOP 3 Summary, 1st paragraph: The PSA states: "Taking into account the moderate visual sensitivity and the high overall visual change, visual impacts at KOP 3 would remain significant even with mitigation. Views of the dominant power towers and bright solar receivers cannot be effectively screened."

KOP 3 does not show high overall change in an already cluttered landscape.

This conclusion does not take into account the effect of the continuing development of the Saint Therese Mission project on this view. With completion of the Mission's structures and landscaping of the parking lot and other areas of the Mission site, views from this KOP toward the solar towers will be substantially screened.

47. Page 4.13-20 KOP 3 Summary, 1st paragraph: The PSA states: "Adoption of Condition of Certification VIS-6 will provide remedial mitigation for the loss of scenic views from KOP 3."

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KOP -3 is not a “scenic view.” While another element is added to view, it is already degraded.

48. Page 4.13-20 and 21, KOP 4, 1st paragraph: The PSA states: “The community has uninterrupted views of Mount Charleston and the Spring Mountains, hence the name Charleston View.”

These views are interrupted by the structures and vegetation within the community.

49. Page 4.13-21, KOP 4, 1st partial paragraph: The PSA states: “The subdivision, laid out and permitted in the 1960s, never even began to approach its full build-out capacity.”

This is not relevant to visual resources.

50. Page 4.13-21 Visual Sensitivity, 1st paragraph: The PSA states: “To the residents, who have chosen to live within this viewshed, it may be perceived as picture-postcard-like in its scenic value, and therefore of high quality. Other than the low-profile buildings and scattered plantings, there is little to obstruct the view, which is highly visible from the treeline above and down the linear corridor of Silver Street.”

This is a subjective characterization. Some residents may perceive this area as “picture-postcard-like.” Other residents, such as those who have abandoned vehicles and artifacts on their property, may not share this perception.

51. Page 4.13-21 Visual Sensitivity, 1st paragraph: The PSA states: “Census counts the population in the vicinity of Charleston View as 68. Therefore the number of permanent viewers is moderately high.”

The question is not the number of viewers in the community, but the number of viewers at this KOP. It would be wrong to attribute all residents to this KOP, since some residents may not have this viewpoint from their residence.

Has the Staff previously characterized the 68 residential viewers as moderately high?

52. Page 4.13-22 Visual Change, 1st paragraph: The PSA states: “The introduction of the structures for the HHSEGS facility into the view at KOP 4 dramatically alters the nature of the view from rural and highly scenic to highly industrial.”

The analysis does not support the conclusion that KOP 4 is highly scenic. And, as explained previously, “industrial” is a subjective and undefined term.

53. Page 4.13-22 Visual Change, 1st paragraph: The PSA states: “The industrial gray tone of the tower and the bright white solar receiver on top are in marked contrast from the low-key, natural desert palette.”

The use of the descriptor “industrial” for the gray tone of the solar towers is prejudicial. The flat gray color of the solar towers will be neutral, and will not necessarily be inconsistent with the colors of the natural desert palette.

54. Page 4.13-22 Visual Change, 2nd paragraph: The PSA states: “The two 750-foot towers with their luminescent solar receiver caps dominate the landscape so completely that it will be hard to imagine the unbroken, highly scenic quality of the existing view.”

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The view is not highly scenic. The view is from a rural desert community without existing aesthetic controls.

The description of change in view should be objective and the SA should not intermingle subjective viewer perception into the analysis.

“There is nothing in the entire valley that dominates the landscape in the way the towers would as shown in the KOP 4 simulation, therefore, dominance is high.”

This is not relevant to KOP 4. It is inappropriate to subjectively introduce the “entire valley” into an analysis of this KOP.

55. Page 4.13-22 KOP 4 Summary, 1st paragraph: The PSA states: “Adoption of Condition of Certification VIS-6 will provide remedial mitigation for the loss of scenic views the change in the character of the view from KOP 4.”

How is this remedial? If, as alleged, the project substantially degrades the view, how does creating a viewpoint to see the project remedy the problem? Does not the recommendation that a project viewing area be provided suggest that many viewers will find the project interesting and attractive, rather than a feature that degrades the view? This proposed mitigation measure clearly violates constitutional protections against mitigation requirements that do not proportionally reduce the impact they are intended to address.

56. Page 4.13-22 KOP 4 Summary, 1st paragraph: The PSA states: “The planting of trees, however, does not provide complete mitigation for the visual impact of the towers. Therefore, the visual impacts would remain significant and unavoidable.”

The relevant question is not whether there is complete mitigation. The question is whether with the proposed mitigation, the project as mitigated will substantially degrade the view from KOP 4. The answer is no.

57. Page 4.13-23, Visual Sensitivity, 2nd paragraph: The PSA states: “The Old Spanish Trail Highway snaking through the valley and the broad expanse of sky and mountains with ample vegetation is a picture-postcard quality scene of high visual quality and has a high degree of visibility.”

This is a subjective characterization of the visual sensitivity. The adjectives are highly “value” laden—a “snaking” highway, “broad expanses,” “ample” vegetation, “picture postcard” are all terms which impair the objectivity of the analysis.

58. Page 4.13-23, Visual Sensitivity, 2nd paragraph: The PSA states: “There are expected to be at least some recreationists in the Nopah Wilderness area who would have a higher level of viewer concern, due to the very nature of the designated scenic wilderness in which they have chosen to spend time, as the BLM describes it, in “places of solitude where people may experience freedom from our fast-paced industrialized society.” That would place the viewer concern as high.”

What, if any, recreational use of the portion of the Nopah Wilderness falls within the potential viewshed of the Project? This is not a KOP from the solitude of the wilderness. This is a KOP from a road.

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59. Page 4.13-24, 1st paragraph: The PSA states: "At a speed of approximately one mile per minute, the project's power towers will be in full view of the motorist for nearly five minutes, which is considered a high view duration. Likewise for the recreationist, who is hiking, or camping, possibly enjoying the solitude of the view, the duration would be high."

There is no hiking or camping here and no solitude roadside.

60. Page 4.13-24 Visual Change, 1st paragraph, 6th sentence: The PSA states: "The smooth gray concrete towers capped with a radiant solar generator do not blend in with the natural hues of the desert floor, mountains and sky."

On the contrary, the neutral gray color of the solar towers will be generally compatible with the color of the desert soils and under hazy and dusty atmospheric conditions, will readily blend into the backdrop.

61. Page 4.13-25, Visual Sensitivity, 2nd paragraph: The PSA states: "Viewers at this location are locals traversing the two-track path in their four-wheel drive vehicles and recreationists."

Why is it assumed the viewers are "locals" or recreationists. Is there any objective data regarding the type or number of viewers at this location?

62. Page 4.13-25 and 26, Visual Sensitivity, 2nd paragraph: The PSA states: "Recreationalists would naturally have a higher degree of viewer concern, as they would be traveling more slowly and taking in the surroundings, including the panoramic view as shown in KOP 7 as well as the views to and within the Pahrump Valley Wilderness Area."

This statement assumes a use different than off-road vehicle users. What is that use?

63. Page 4.13-26, 2nd full paragraph: The PSA states: "It should be noted that BLM is developing an OST Interpretive Auto Tour for California (Las Vegas to Los Angeles). The auto tour is modeled after the National Park Service National Trails System National Historic Trails Auto Tour Route Interpretive Guides and will be presented both in physical booklet form and online as a PDF. The auto tour stays on paved roads: highways, interstates, city roads, etc. and its path approximates the OST corridor. Selected OST historical sites, museums, state historical markers, parks and trails will be listed as tour stops. The publication of this auto tour may have the effect of increasing visitorship to the off-road trails and sites along the route in the future, thereby increasing the viewer concern."

This is not relevant to this KOP and should be deleted.

64. Page 4.13-26, Visual Sensitivity, 3rd full paragraph: The PSA states: "This is borne out as the KOP represents both the view from a wilderness area as well as from a point on a national historic trail, where viewer concern should be higher than average."

It is not in the wilderness and, if it is on a historic trail, it should not be disclosed here. While this KOP may be on federally managed (BLM) lands, it is far from the boundaries of the wilderness.

65. Page 4.13-26, Visual Change, 1st paragraph: The PSA states: "Were the towers and related facilities closer to the viewer, the dominance would be high."

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They are not “closer,” however. This is another example of the PSA assuming hypothetical circumstances (“were the towers closer”) in order to find an impact, even if there is no substantial evidence to support such a conclusion.

66. Page 4.13-27, KOP 7 Summary, 1st paragraph: The PSA states: “Adoption of Condition of Certification VIS-6 will provide remedial mitigation for the loss of scenic views from KOP 7.”

As above. How is this remedial?

67. Page 4.13-34, 1st full paragraph: The PSA states: “During operation, the proposed project has the potential to introduce light offsite to the roadway and surrounding properties, and up-lighting to the nighttime sky. If bright exterior lights were unshielded and lights not directed onsite they could introduce significant nighttime light to the vicinity.”

But the project does propose shielding. The analysis should assume these impacts will be mitigated by the project features proposed by the Applicant and not opine on impacts that will only occur if the project is not constructed as proposed.

68. Page 4.13-34, 3rd full paragraph: The PSA states: “The addition of the aviation safety lighting will substantially alter the nighttime appearance of the project area and will be prominently featured in the night sky due to the height of the towers and the number of lights required by the towers’ size.”

This is not correct. From viewpoints in the project area, the aviation safety lights will be visible in a very small sector of the 360-degree view of the night sky, leaving most of the sky unaffected. Because of their red color and design, in the small portion of the night sky in which these lights will be visible, they will appear as small points of flashing red light. They will have little to no effect on ambient lighting conditions in the area around them. In addition, they will have no detectable effect on the relative darkness of the night sky and thus no effect on the viewer’s ability to see the stars and planets.

69. Page 4.13-34, 3rd full paragraph: The PSA states: “The applicant indicates there will be eighteen FAA warning lights on each tower. Once the project becomes operational, the visual impact of the federally required aviation safety lighting is unmitigable, and therefore would be significant.”

As indicated previously, the required FAA aviation safety lighting will affect only a small area of the night sky, leaving most of the sky unaffected, and they will have no effect on ambient lighting conditions in the surrounding area or on the ability of viewers in the area to see the stars and planets. Thus, the impacts of this lighting would be less than significant.

In addition, with implementation of Condition of Certification Vis-7, which will bring about planting of trees around residences in Charleston View, there will be increased screening of views toward the solar towers from the residences in this area, reducing or not eliminating views of the aviation safety lighting that might otherwise be seen by viewers in this area.

Have other EIRs found the impact of aviation lighting to be significant?

70. Page 4.13-35, CUMULATIVE IMPACTS AND MITIGATION (Generally)

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As discussed in General Comments, the cumulative impacts analysis should not address projects in Nevada, nor projects outside the viewshed.

71. Page 4.13-36 Visual Resources Table 5 – Projects Considered in the Cumulative Impacts Analysis:

The PSA should address only projects in California and only projects in the viewshed.

72. Page 4.13-40 Visual Resources Table 6 – Compliance with Applicable Laws, Ordinances, Regulations, and Standards, Local, Row 1 (Inyo County General Plan, Goals and Policies...), Consistency Determination column:

“No”

Would the Staff position if adopted, be cured by the GPA and rezoning or would a LORS override be required?

73. Page 4.13-41 Visual Resources Table 6 – Compliance with Applicable Laws, Ordinances, Regulations, and Standards, Local, Row 4 (Inyo County Zoning Code Chapter 18.12.OS (Open Space)), Policy and Strategy Description column: The PSA states: “Maximum height of buildings in OS Zone: Principal buildings 30 feet, accessory buildings 25 feet.”

This is not a visual LORS.

## **Findings of Fact**

74. Pages 4.13-43 and 44: The following findings of fact are proposed by the Applicant:

1. Construction would occur over 29 months.
2. The project, with the mitigation proposed by Staff, will not substantially degrade the visual quality of the project site or surrounding areas.
3. The views from the KOPs will not be substantially degraded by the introduction of the project at the proposed site.
4. The project is not adjacent to a scenic highway or any designated scenic vista.
5. The existing visual quality in the project area is moderate and the project will not substantially degrade the existing visual character of the site and its surroundings.
6. The project’s proposed construction activities would not substantially degrade the existing visual character or quality of the site and its surroundings.
7. The project’s construction activities will be temporary and will therefore not create a significant adverse impact.
8. The project area is relatively dark at night, but there is some local lighting, and a high degree of skyglow created by bright lights in Las Vegas and Pahrump.



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9. The HHSEGS will introduce aviation warning lights at the top of the power towers, but these warning lights will not be a significant source of light at night.
10. The height and luminosity of the solar tower receivers will be visible at a distance, but will not substantially degrade the visual quality of the views seen from these distances.
11. The project's potential impacts on visual resources were analyzed from four defined KOPs at different locations in California.
12. There will be no significant adverse impacts in California to visual resources resulting from the HHSEGS linears, which are located in Nevada.
13. The visual effects of the HHSEGS in combination with past, present, and reasonable foreseeable projects in California will not be cumulatively considerable on Visual Resources in the viewshed of the greater Pahrump Valley.
14. The project will comply with Inyo County laws, regulations, and standards regarding scenic views and other requirements related to Visual Resources.
15. There are no Visual Resources Environmental Justice issues related to the operation of this project and minority or low-income populations would not be significantly or adversely impacted.

### **Conditions of Certification**

75. Page 4.13-49, VIS-1: Please revise as follows:

**VIS-1** The surfaces of the solar towers will retain the natural gray color of the concrete from which they are constructed, with the exception of a ring of white paint that will be applied to the area just below the solar boilers to protect the concrete. ~~However, the~~ The project owner shall treat the surfaces of all ~~of the other~~ project structures and buildings visible to the public such that a) their colors minimize visual intrusion by blending with the landscape or by providing architectural interest; b) their colors and finishes do not create excessive glare; and c) their colors and finishes are consistent with local policies and ordinances. Surface color treatment shall include painting or tinting of power towers, stacks, dry cooling structures, tanks, heliostat structures and other features in earth tone colors and values to blend in with the surrounding mountains and desert vegetation. Colors shall be chosen from palettes of color available from the manufacturers of the project's equipment that are similar to or consistent with the colors on BLM's Standard Environmental Colors. The colors selected should be ~~and~~ pre-tested in the field. Any transmission line poles and conductors associated with the project in California shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive.

**Verification:** At least 90 days prior to specifying to the vendor the colors and finishes of the first structures or buildings that are surface treated during manufacture, the project owner

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shall submit the proposed treatment plan to the CPM for review and approval and simultaneously to Inyo County for review and comment. If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) for review and approval by the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to the CPM for review and approval.

Prior to the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed and is ready for inspection and shall submit one set of electronic color photographs from the same key observation points identified in (c) above.

The project owner shall submit for CPM review and approval, a specific surface treatment plan that will satisfy these requirements. The treatment plan shall include:

- a.) a description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes, including the photographic results of field testing;
- b.) a list of each major project structure, building, tank, pipe, and wall; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, finish and number; or according to a universal designation system;
- c.) one set of 11" x 17" color photo simulations at life size scale of the treatment proposed for use on project structures, including structures treated during manufacture, from representative points of view, Key Observation Points 3 and 5, (Visual Resources Figure 20b and 22b of the Staff Assessment) or color-rendered elevation drawings on 18" x 24" minimum sheet size;
- d.) color samples on color card or painted steel;
- e.) a specific schedule for completion of the treatment; and
- f.) a procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan by the CPM. Subsequent modifications to the treatment plan are prohibited without CPM approval.

~~**Verification:** At least 90 days prior to specifying to the vendor the colors and finishes of the first structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval and simultaneously to Inyo County for review and comment. If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) for review and approval by the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to the CPM for review and approval.~~

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~~Prior to the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed and are ready for inspection and shall submit one set of electronic color photographs from the same key observation points identified in (c) above.~~

The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify a): the condition of the surfaces of all structures and buildings at the end of the reporting year; b) maintenance activities that occurred during the reporting year; and c) the schedule of maintenance activities for the next year.

76. Page 4.13-50, VIS-2:

As it is currently written, **VIS-2** calls for more landscaping than is necessary to respond to project's specific effects on critical viewing areas. This Condition needs to be revised in a number of ways:

Limit landscaping to the southern perimeter of the site, along Tecopa Road and delete the requirement for landscaping along the project's eastern and western boundaries. Because there are few, if any, viewers in close proximity to the eastern and western boundaries of the site, landscaping along these perimeters of the site would add little mitigation value. In addition, the establishment of unnecessary landscaping along these perimeters would create other issues, including increasing the project's overall water use and placing alien plant species in areas adjacent to native plant communities that the PSA characterizes as being largely intact.

The PSA's glint and glare analysis (Appendix VR-2) establishes that the heliostats will be programmed "such that reflectivity would never be directed toward ground level viewers located outside the of the project site" and that "Locations on the ground outside of the footprint of the plant will not receive any direct reflections of sunlight." Given the fact that there will be no ground-level reflections, there is no need for a wall, fence slats, or continuous thick landscaping to screen glint and glare emanating from the heliostats. Besides being unnecessary, this screening would be aesthetically counterproductive, adding additional solid forms to the near-foreground views from Tecopa Road and creating a high sense of enclosure along the road corridor. In addition, this screening would eliminate the potential for those driving by to catch glimpses of views into the facility. The project is likely to become a feature of interest to those traveling through the area, particularly with implementation of Condition of Certification VIS-6, which will provide interpretation of the project and its setting. Completely blocking the views from Tecopa Road into the project would be inconsistent with the goal of providing the traveling public the opportunity to see, understand, and appreciate the facility.

Based on the consultation the project developer has had with local residents and Inyo County, it would appear that decisions about the treatment of the frontage along Tecopa Road would be best left to Inyo County to ensure that the treatment selected is consistent with local preferences.

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This Condition should be revised as follows:

**VIS-2** The project owner shall provide landscaping that responds to the concerns and preferences of local residents and Inyo County. To achieve this objective, the project owner shall develop a plan for the treatment of the frontage along Tecopa Road in consultation with Inyo County. In developing this plan, considerations that should be taken into account include ~~reduces the visibility of the power plant structures and is in accordance~~ achieving conformity with local policies, and mitigating the project's effects on views from Tecopa Road and from the area of concentrated development in Charleston View. Consideration should be given to placing trees and other vegetation ~~shall be placed~~ along the facility boundaries, in conformance with the Conceptual Landscape Plan, Figures VR-1a, b and c, in the 11-AFC-02 Supplement A. ~~In addition, the project owner shall provide screening plantings along the property borders on the west and east. The objective shall be to create landscape screening of sufficient density and height to screen the power plant structures to the greatest feasible extent within the shortest feasible time from adjacent properties. In the short strip along the north side of Tecopa Road directly north of the most heavily developed portion of Charleston View, consideration should be given to the implementation of the landscape plan indicated in Conceptual Landscape Plan Figure VR-1b with the objective of providing an attractive project border and substantial screening of non-tower project facilities in views from nearby Charleston View residences and streets. In the remaining areas of the project's southern perimeter along Tecopa Road, consideration should be given to adapting the landscape plan indicated in Figure VR-1a for any required turn lanes and implementing it with the goal of creating an attractive, visually interesting border along Tecopa Road. While this landscape border may provide partial screening of views into the project site, it is not intended to provide full screening. Selected plants shall~~ would be drawn from the plant list the Applicant filed on Conceptual Landscape Plan Figure VR-1c, and should avoid invasive exotic species as identified by the USDA<sup>56</sup> and Invasive Species Council of California (ISCC)<sup>57</sup>. Any ~~landscape~~ plantings and other elements proposed must meet the requirements of the applicable General Plan and Zoning Regulations of Inyo County and any site development standards associated with those regulations.

~~The landscape plan shall also include the permanent perimeter fencing. In order to minimize the dangerous effects of glint and glare on passing motorists and on visitors to the St. Therese Mission, a solid wall of sufficient height to screen the view of the heliostat mirrored surfaces shall be included. All chain link or wind fencing shall include neutral colored privacy slats to screen views of the interior. Concertina~~

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<sup>56</sup> [NRCS Invasive Species Policy](#), [Invasive Species Executive Order 13112](#), Invasive and Noxious Weeds, California State Listed Noxious Weeds.

<sup>57</sup> **The California Invasive Species List**, Presented on April 21, 2010 by the California Invasive Species Advisory Committee (CISAC) to the Invasive Species Council of California (ISCC).

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~~razor wire or similar security obstacles shall only be installed on the interiors of the fencing and shall not be visible from the exterior.~~

**Verification:** The project owner shall submit to the CPM for review and approval and simultaneously to Inyo County for review and comment a Landscape Documentation Package whose proper implementation will satisfy these requirements and the requirements of the Water Efficient Landscape Ordinance (WELO).

The landscape plan shall be submitted to the CPM for review and approval and simultaneously to Inyo County for review and comment at least 90 days prior to installation. If the CPM determines that the plan requires revision, the project owner shall provide to the CPM and simultaneously to Inyo County a revised plan for review and approval by the CPM. The submittal shall include three printed sets of full-size plans (not to exceed 24 x 36 inches), three sets of 11- x 17-inch reductions and a digital copy in PDF format.

The plan shall include:

- a.) a detailed Landscape Design Plan, at a reasonable scale (1"=40' maximum). The plan shall demonstrate how the objectives defined by Inyo County~~requirements stated above~~ shall be met. The plan shall provide a detailed installation schedule demonstrating installation of as much of the landscaping as early in the construction process as is feasible in coordination with project construction. The Landscape Design Plan shall include a Planting Plan with Plant List (prepared by a qualified landscape architect familiar with local growing conditions) of proposed species, specifying installation sizes, growth rates, expected time to maturity, expected size at five years and at maturity, spacing, number, availability, and a discussion of the suitability of the plants for the site conditions and mitigation objectives, with the objective of providing the widest possible range of species from which to choose; specifications for groundcover, top-dressing of planting areas and weed abatement measures. Existing vegetation (if any) shall be noted on the Landscape Plan. ~~The Landscape Design Plan shall specify all materials to be used for interior roads, walks, parking areas and hardscape materials (i.e. gravel) to be placed in areas that are not paved or planted, and exterior fencing or walls.~~
- b.) an Irrigation Plan in compliance with the Water Efficient Landscape Ordinance. The plan shall include the following: complete Irrigation Design Plan, specifying system components and locations, and shall include the Water Efficient Landscape Worksheet.
- c.) maintenance procedures, including any needed temporary irrigation, and a plan for routine annual or semi-annual debris removal for the life of the project; and
- d.) a procedure for monitoring and replacement of unsuccessful plantings for the life of the project.

The plan shall not be implemented until the project owner receives final approval from the CPM.

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**Verification:** ~~The landscape plan shall be submitted to the CPM for review and approval and simultaneously to Inyo County for review and comment at least 90 days prior to installation. If the CPM determines that the plan requires revision, the project owner shall provide to the CPM and simultaneously to Inyo County a revised plan for review and approval by the CPM. The submittal shall include 3 printed sets of full-size plans (not to exceed 24" x 36"), 3 sets of 11" x 17" reductions and a digital copy in PDF format.~~

Planting must occur during the first optimal planting season following site mobilization. The project owner shall simultaneously notify the CPM and Inyo County within seven days after completing installation of the landscape plan, that the site is ready for inspection. A report to the CPM describing how the completed landscape meets the conditions of VIS-2 shall be submitted in conjunction with the inspection.

The project owner shall report landscape maintenance activities, including replacement of dead or dying vegetation, for the previous year of operation in each Annual Compliance Report.

77. Page 4.13-52, VIS-3. Please revise as follows:

- VIS-3** To the extent feasible, consistent with safety and security considerations, the project owner shall design and install all permanent exterior lighting such that:
- a.) lamps and reflectors are not visible from beyond the project site, including any off-site security buffer areas;
  - b.) lighting does not cause excessive reflected glare;
  - c.) direct lighting does not illuminate the nighttime sky; except for required FAA aircraft safety lighting;
  - d.) illumination of the project and its immediate vicinity is minimized, and
  - e.) the plan complies with local policies and ordinances.

**Verification:** At least 90 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to discuss the documentation required in the lighting mitigation plan. At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval and simultaneously to Inyo County for review and comment a lighting mitigation plan. If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM. The submittal shall include three printed sets of full-size plans (not to exceed 24 x 36 inches), three sets of 11- x 17-inch reductions and a digital copy in PDF format. The project owner shall not order any exterior lighting until receiving CPM approval of the lighting mitigation plan.

The project owner shall submit to the CPM for review and approval and simultaneously to Inyo County for review and comment a lighting mitigation plan that includes the following:

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- a.) Location and direction of light fixtures shall take the lighting mitigation requirements into account;
- b.) Lighting design shall consider setbacks of project features from the site boundary to aid in satisfying the lighting mitigation requirements;
- c.) Lighting shall incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated;
- d.) Light fixtures that are visible from beyond the project boundary shall have cutoff angles that are sufficient to prevent lamps and reflectors from being visible beyond the project boundary, except where necessary for security;
- e.) All lighting shall be of minimum necessary brightness consistent with operational safety and security;
- f.) Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied and
- g.) Statement of conformance with all federal, state and local statutes and regulations related to dark skies or glare, including, but not limited to, the Inyo County General Plan.

**Verification:** ~~At least 90 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to discuss the documentation required in the lighting mitigation plan. At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval and simultaneously to Inyo County for review and comment a lighting mitigation plan. If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM. The submittal shall include 3 printed sets of full-size plans (not to exceed 24" x 36"), 3 sets of 11" x 17" reductions and a digital copy in PDF format. The project owner shall not order any exterior lighting until receiving CPM approval of the lighting mitigation plan.~~

Prior to commercial operation, the project owner shall notify the CPM that the lighting has been completed and is ready for inspection. If after inspection the CPM notifies the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed and are ready for inspection.

Within 48 hours of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the Compliance General Conditions including a proposal to resolve the complaint, and a schedule for implementation. The project owner shall notify the CPM within 48 hours after completing implementation of the proposal. A copy of the complaint resolution form report shall be submitted to the CPM within 30 days.



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78. Page 4.13-53, VIS-4. Please revise as follows:

**VIS-4** Unless permanent fencing and or walls are constructed at the outset of construction, the project owner shall install temporary construction fencing on the project site along ~~Old Spanish Trail Highway~~ Tecopa Road in such a way as to screen views of the construction activity and equipment. The construction fencing shall meet the following requirements: chain link fence shall have a neutral-colored privacy screening of at least 75% opacity material applied to the fence to reduce or eliminate views into the project site.

**Verification:** At least ~~60~~ 30 days prior to site mobilization, the project owner shall submit to the CPM a Construction Fencing Plan. The plan shall include the following: written description and photographic images of the proposed construction fencing and privacy screening material.

79. Page 4.13-54, VIS-5. Please revise as follows:

**VIS-5** The project owner shall ensure that lighting for construction of the power plant is deployed in a manner that minimizes potential night lighting impacts, as follows:

- a.) all lighting shall be of minimum necessary brightness consistent with worker safety and security;
- b.) all fixed position lighting shall be shielded or hooded, to the extent feasible given safety and security concerns, and directed downward toward the area to be illuminated to prevent direct illumination of the night sky and direct light trespass (direct light extending outside the boundaries of the power plant site or the site of construction of ancillary facilities, including any security related boundaries); and
- c.) wherever feasible, safe and not needed for security, lighting shall be kept off when not in use.
- d.) FAA required security lighting shall be included on all construction structures per regulations.

**Verification:** Within seven days after the first use of construction lighting, the project owner shall notify ~~and~~ the CPM that the lighting is ready for inspection. If the CPM requires modifications to the lighting, within 15 days of receiving that notification, the project owner shall implement the necessary modifications and notify the CPM that the modifications have been completed.

Within 48 hours of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the General Conditions section including a proposal to resolve the complaint, and a schedule for implementation. The project owner shall notify the CPM within 48 hours after completing implementation of the

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proposal. A copy of the complaint resolution form report shall be included in the subsequent Monthly Compliance Report following complaint resolution.

80. Page 4.13-54, VIS-6. Please delete VIS-6 in its entirety since it does not mitigate any significant impacts.

~~**VIS-6**—The applicant/Project owner shall provide an Interpretive Center with parking and interpretive panels. The interpretive center shall be built within the roadway setback and as part of the landscape screening contained in **VIS-2**. A detailed plan shall be developed and shall include visitor interpretation of visual and cultural highlights which have been adversely impacted by the introduction of the project.~~

~~**Verification:**—At least 120 days before beginning installation of any permanent landscape treatments along the Tecopa Road frontage, a detailed plan shall be submitted to the CPM for review and approval, and to Inyo County and to Native American tribal representatives, identified by Cultural Resources staff, for review and comment. Plan details shall include:~~

- ~~a.) Parking and visitor area surface treatments;~~
- ~~b.) Landscape planting and irrigation plan;~~
- ~~c.) Parking area plan indicating lighting, parking striping, ingress and egress;~~
- ~~d.) Structural elements material finishes and details;~~

~~(a b c d above may all be incorporated into the landscape plan required in **VIS-2** and lighting plan required in **VIS-3**).~~

- ~~e.) Design plans for interpretive panels or displays which take into consideration the following design aspects:~~

~~Pahrump Valley history, including the Wiley Ranch;  
Native American history and uses and understanding of the landscape in the region after consultation with local tribal representatives identified by Cultural Resources staff;  
History of the Old Spanish Trail and the Mormon Trail;  
Identification of the wilderness and national recreation areas and the major landscape features visible from the site (i.e. mountain ranges and named peaks);  
Introduction to the solar electric technology in use on the site;  
Parking for passenger vehicles and one bus;  
Appropriate number of shade trees for the parking and visitor area.  
Maintenance plan for the interpretive area.~~

~~The project owner shall simultaneously notify the CPM and Inyo County within seven days after completing installation of the interpretive area plan that the site is ready for inspection. A report to the CPM describing how the completed interpretative area meets the conditions of **VIS-6** shall be submitted in conjunction with the inspection.~~

~~The project owner shall report maintenance activities for the previous year of operation in each Annual Compliance Report.~~

81. Page 4.13-55, VIS-7. Please revise as follows:

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**VIS-7** The project owner shall make provisions to plant trees on the properties of any Charleston View resident or property owner who indicates an interest in having them. The intent is to plant the trees in locations that will screen views looking toward the solar power towers from the residences on the property and from the property's primary outdoor living areas. This shall be available to the residents and property owners (so long as the property is used as a residence) for the life of the project first 2 years of project operation. The project owner shall meet the following requirements:

- a.) The project owner shall employ a professional arborist to identify a list of species that are well adapted to the local conditions and which have characteristics that provide effective screening of views. Selected plants shall avoid invasive exotic species as identified by the USDA and Invasive Species Council of California (ISCC). (See **VIS-2**)
- b.) ~~The arborist shall work with residents to select up to eight trees from this list of species and will assist the residents in indentifying appropriate locations for their installation. The project owner will take responsibility for purchasing and installing the trees, which shall be the equivalent of a 15-gallon standard nursery size. The project owner shall provide any residents of Charleston View who are interested in participating in this program with a credit with a local landscape contractor contracted to implement this program. The contractor shall work with residents to select up to eight trees from this list of species provided by the arborist and will assist the residents in indentifying appropriate locations for their installation. The contractor will provide the trees and will plant them for the property owner. The trees planted shall be the equivalent of a 15-gallon standard nursery size.~~
- c.) Tree planting is a one-time opportunity for property owners in Charleston View. Once installed, irrigation and maintenance of the trees will be the responsibility of the property owner and the project owner shall have no further responsibility.

**Verification:** ~~Within 120 days of beginning construction after project operations begin,~~ the project owner shall contact property owners in Charleston View and the CPM by registered mail to notify them of the tree planting program. The project owner shall provide in the Monthly Compliance Report a summary of the program, including the following:

- a.) parcel numbers of property owners contacted;
- b.) actions taken to ensure property owners fully understand the program;
- c.) list of installations by parcel number;
- d.) quantity and species installed on each parcel;
- e.) documentation of any property owner who declined to participate by parcel number.

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## **WASTE MANAGEMENT**

### **General Comments**

1. Page 4.14-7, Setting, Proposed Project, 2<sup>nd</sup> paragraph, 1<sup>st</sup> sentence: Site is not 3,900 acres. See General Comments at the beginning of the document.

### **Specific Comments**

2. Page 4.14-5, Table 1 LORS, Title 24, CCR, Part 11 2010 Green Building Standards Code (CalGreen): Suggest that this LORS be deleted because Inyo County has a local construction and demolition (C&D) debris diversion ordinance that achieves the same objective of diversion of 50 percent of construction waste from landfills. The CalGreen code only applies if there is no local ordinance.
3. Page 4.14-6, Table 1 LORS, Title 8, CCR §1529 and §5208: Suggest that this LORS be deleted, as this applies to existing facilities that need to be demolished that have asbestos-containing materials. It should not apply to the HHSEGS because there are no existing structures at the site that need to be demolished.
4. Page 4.14-8, 2<sup>nd</sup> paragraph, 2<sup>nd</sup> sentence: According to the State of Nevada, Class I and II landfills can also accept non-hazardous non-recyclable waste. Suggest that sentence be reworded as follows:

Waste would be recycled, where practical, and non-recyclable waste would be deposited in a Nevada Class III landfill licensed to accept such waste.

5. Page 4.14-11, Construction Impacts and Mitigation, Nonhazardous Waste, 1<sup>st</sup> paragraph, last sentence: Suggest that sentence be reworded as follows:

The non-hazardous waste that cannot be recycled from the HHSEGS will be disposed in a Nevada Class III landfill licensed to accept the waste (Nevada Administrative Code (NAC) Section 444.5715).

6. Page 4.14-17, 2<sup>nd</sup> paragraph, 4<sup>th</sup> sentence: Suggest revising the sentence as follows:

The CPM, after receiving comments from the and County, shall determine with the applicant if the plan is diverting recyclables to the maximum extent feasible.

7. Page 4.14-22, Conclusion #4: Please revise as follows:

Staff has reviewed **Socioeconomics Figure 1** which shows the environmental justice population is not greater than fifty percent within a six-mile radius of the proposed **HHSEGS**. Energy Commission staff has not identified any significant adverse direct or cumulative **Waste Management** impacts resulting from the construction or operation of the proposed project, including impacts to the environmental justice population. Therefore, there are no **Waste Management** environmental justice issues related to this project, as there are no disproportionately high and adverse human health or environmental effects on a and no minority or low-income populations, would be significantly or adversely impacted.

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8. Page 4.14-22, Conclusion #5: Suggest deletion of conclusion Number 5. Waste that will be generated onsite by the project is already covered by the waste management analysis. No new residences are foreseen as part of the project so no other increase in waste generation is anticipated beyond what is already described in the analysis.

### **Findings of Fact**

9. Page 4.14-23, Finding of Fact #9: Suggest deletion of this statement, as it is not a finding of fact:

The project owner will work with Inyo County and Energy Commission staff to determine what ~~mitigation~~ measures, if any, should be proposed in the Final Staff Assessment to ~~address potential help off set expected impacts to county services, if any, including~~ municipal solid waste disposal.

### **Conditions of Certification**

10. Page 4.14-23, WASTE-2: The Applicant suggests combining WASTE-2 and WASTE-3. Please delete WASTE-2 as the first two bullets are the same requirements as WASTE-3. The third bullet can be added to WASTE-3 to cover this requirement.
11. Page 4.14-24, WASTE-3: Please add the third bullet from WASTE-2. Please remove the 4<sup>th</sup> bullet because Title 14 CCR 18808.9 requires that a public contract hauler report quarterly on the total tons of solid waste exported from each jurisdiction of origin. It does not require site-specific information.

WASTE-3 (which will become WASTE-2) should be revised as follows:

**WASTE-23** The project owner shall prepare a Construction Waste Management Plan for all wastes generated during construction of the facility, and shall submit the plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

- a description of all construction waste streams, including projections of frequency, amounts generated, and hazard classifications; and
- management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans.
- a method for collecting weigh tickets or other methods for verifying the volume of transported and or location of waste disposal.
- Provide reporting demonstrating they have met the construction-diversion requirements-50 percent-the local Inyo County waste diversion ordinance.  
~~procedures for providing reports from contract haulers that transport waste from the project out of state pursuant to CCR 18808.9.~~

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**Verification:** The project owner shall submit the Construction Waste Management Plan to Inyo County for review, and the CPM for review and approval no less than 30 days prior to the initiation of construction activities at the site.

The project owner shall also document in each Monthly Compliance Report the actual volume of wastes generated and the waste management methods used during the year; provide a comparison of the actual waste generation and management methods used to those proposed in the original Construction Waste Management Plan; and update the Construction Waste Management Plan, as necessary, to address current waste generation and management practices. ~~The Monthly Compliance Report will also include reports submitted by contract haulers pursuant to CCR 18808.9.~~

12. Page 4.14-25, WASTE-5: Suggest removing references to Title 14 CCR 18808.9, as it requires that a public contract hauler report quarterly on the total tons of solid waste exported from each jurisdiction of origin. It does not require site-specific information.

**WASTE-5** The project owner shall prepare an Operation Waste Management Plan for all wastes generated during operation of the facility and shall submit the plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

- a detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications;
- management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans;
- Information and summary records of conversations with the local Certified Unified Program Agency and the Department of Toxic Substances Control regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary;
- a detailed description of how facility wastes will be managed and any contingency plans to be employed in the event of an unplanned closure or planned temporary facility closure; a detailed description of how facility wastes will be managed and disposed of upon closure of the facility.
- an explanation ~~to the CPM and Inyo County~~ demonstrating how they will divert operation material to the maximum extent feasible; and procedures for providing reports from contract haulers that transport waste from the project out of state pursuant to CCR 18808.9.

**Verification:** The project owner shall submit the Operation Waste Management Plan to the CPM for approval no less than 30 days prior to the start of project operation. The project

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owner shall submit any required revisions to the CPM within 20 days of notification from the CPM that revisions are necessary.

The project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year; provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan; and update the Operation Waste Management Plan, as necessary, to address current waste generation and management practices. ~~The Annual Compliance Report will also include reports submitted by contract haulers pursuant to CCR 18808.9.~~

13. Pages 4.14-25 and 26, WASTE-6: Please move the Verification to the start of the second paragraph:

**WASTE-6** The project owner shall ensure that all spills or releases of hazardous substances, hazardous materials, or hazardous waste are documented and cleaned up and that wastes generated from the release/spill are properly managed and disposed of in accordance with all applicable federal, state, and local requirements.

**Verification:** The project owner shall document management of all unauthorized releases and spills of hazardous substances, hazardous materials, or hazardous wastes that are in excess of EPA's reportable quantities (RQ), that occur on the project property or related linear facilities during construction and on the property during operation. The documentation shall include, at a minimum, the following information: location of release; date and time of release; reason for release; volume released; how release was managed and material cleaned up; amount of contaminated soil and/or cleanup wastes generated; if the release was reported; to whom the release was reported; release corrective action and cleanup requirements placed by regulating agencies; level of cleanup achieved; actions taken to prevent a similar release or spill; and disposition of any hazardous wastes and/or contaminated soils and materials that may have been generated by the release.

~~**Verification:**~~—A copy of the unauthorized release/spill documentation shall be provided to the CPM within 30 days of the date the release was discovered.

## **WATER SUPPLY**

### **General Comments**

14. The Applicant has made clear in its filings in this proceeding and actions that it recognizes the importance of water resources in the desert environment. Toward that end, the Applicant has been unwavering in the following commitment. First, the Applicant has committed to offset its water usage at a 1:1 ratio by the retirement of water rights up-gradient in Nevada. This 1:1 retirement will actually result in a net benefit to the aquifer as follows. The 140 acre-feet per year (AFY) that the Applicant will retire equals the maximum water usage allowed by the proposed conditions. In reality, the Applicant expects to use somewhat less water each year. The 140 AFY provides a



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reasonable and prudent margin to allow the power plant to operate. Thus, each and every year that the project operates below its maximum permitted usage of 140 AFY, the groundwater basin will be a net “positive” because the retirement of 140 AFY is in perpetuity. In a simple equation, each year the basin will be net positive as follows: 140 AFY retired at 1:1 minus actual water usage below the maximum equals net benefit recharge to the groundwater basin.

Second, the Applicant has been unwavering in its commitment to make sure that other water users in basin are not adversely affected by the Applicant’s water use. The applicant has proposed a reasonable yet rigorous monitoring plan. If the Applicant’s monitoring plan shows that project-related pumping has the potential to have an adverse effect, the Applicant has agreed to a series of measures, including the deepening of existing wells to ensure that other, existing water users are held harmless from the Applicant’s use. In reality, the Applicant believes that its proposed, rigorous groundwater monitoring program will confirm that there will be no project-related effects outside the project’s boundary. Nevertheless, as to other groundwater users in the basin, the applicant will ensure that their ability to use their existing wells will not be adversely affected.

Third, the Applicant has agreed to compensate any existing well owners if the project should result in increased pumping costs, in the form of higher electricity bills for their water pumps. The Staff has proposed a very detailed condition in this connection. So long as that detailed prescription is largely in verification language, the Applicant will not object. Of course, the Applicant believes a simpler condition could be crafted with more work by the parties.

15. The Applicant’s basic approach to water is stated above, and in the supporting materials filed by the Applicant in this proceeding. From the Applicant’s perspective, the following issues have arisen that require resolution, either with Staff in the FSA or through the evidentiary hearing process.

First, the Staff must acknowledge the benefits accruing from the Applicant’s commitment to retire water rights at a 1:1 ratio. As explained previously, the retirement of a maximum amount (140 AFY) when actual use will most certainly be less will result in a net benefit to the aquifer. This is also a benefit that other California water users would not have to bestow, given their overlying water rights are correlative and California law does not require such an offset. Frankly, the Applicant believes that the Committee could end the entire water inquiry right there. Rather than having a substantial impact, the project will have a substantial net benefit.

Second, California water law is unambiguous—the overlying landowner and the HHSEGS as its lessee has an unquestionable right to use groundwater from the site. California does not administer nor regulate the acquisition and exercise of groundwater rights. California law recognizes both overlying and appropriative rights to groundwater. An owner of land overlying a groundwater basin has the right to the reasonable and beneficial use of groundwater on the overlying land, correlative to the use of other overlying right holders (*City of Barstow v. Mojave Water Agency* [2000] 23 Cal. 4<sup>th</sup> 1224,

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1240). Overlying groundwater rights are superior to appropriative rights. Groundwater that is surplus to the needs of overlying right holders can be appropriated on non-overlying lands according to principle of prior appropriation (Id. at 1241).

Third, as described in the “Alternatives” PSA comments previously, the proper “No Project” alternative would be 170 homesites on the project site. Given that these 170 homesites would be residential users on 20 to 40 acre lots in a desert environment, the assumption of only 1 AFY per 170 residences is a very conservative assumption. Again, the project results in a net benefit relative to the No Project Alternative.

Fourth, the PSA’s analysis is focused almost wholly on Nevada and Nevada state resources, and it assumes potential impacts in Nevada. Factually, this is incorrect, based on the information presented by Cardno ENTRIX discussed later, and the other specific comments that follow. Potential effects will be localized, as the pump testing demonstrates, and to assume impacts in Nevada is not supported by substantial evidence.

Fifth, as discussed later, the modeling assumptions applied in the PSA are overly simplistic. To be both clear and fair, the Staff acknowledges that their modeling is course, more of a screening tool, and Staff is to be commended for that acknowledgment. In the spirit of advancing this proceeding, the Applicant respectfully requests that the FSA build on that screening level analysis with the more-refined and detailed modeling and modeling assumptions set forth in the work of the Applicant, in general, and the work of Cardno ENTRIX, in particular.

Finally, and perhaps of the greatest significance, as proposed, the Staff’s Conditions of Certification would require the project to curtail renewable power generation or shutdown all renewable power generation based on monitoring thresholds that are absolutely indistinguishable from the natural, background variation in groundwater levels due entirely to non-project related effects. A 6-inch drop in local groundwater levels (0.5 foot) is very difficult to detect and, significantly, almost impossible to attribute to any one natural factor, let alone any one use of water. The natural variation makes such a threshold almost immeasurable. More importantly, there is nothing in existing law to suggest that such a change is even an “impact,” let alone a significant impact requiring mitigation pursuant to CEQA.

16. On behalf of the Applicant, Cardno ENTRIX delivered a PowerPoint presentation on June 14, 2012, at the CEC PSA Workshop on the Hidden Hills Solar Electric Generating Station Project in Pahrump, Nevada. This presentation was docketed with the CEC on June 15, 2012. The main points made by the presentation include the following:
  - a. The pumping test data demonstrated that the aquifer can easily support the project.
  - b. Pumping represents about 8 percent of normal flow beneath the site.
  - c. The test data clearly showed that the aquifer receives recharge from leakance.
  - d. CEC staff assumed a flat aquifer with no recharge (not representative of site conditions).

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- e. Regional flow and recharge from leakance must be considered to match pumping test data.
- f. No drawdown will propagate to springs from the Hidden Hills site.
- g. No significant drawdown is expected at any private wells.
- h. Earlier models did not reflect aquifer properties as they are now understood.

The information in these slides should be incorporated into the FSA analyses.

17. Detailed information provided in the PowerPoint presentation referenced in General Comment 1 includes the following narratives. These narratives meant to augment the slide presentation should be reflected in the FSA:

**Slide 3:** Site location showing the location of two hypothetical pumping wells near the proposed power station locations. Also shown are the locations of Stump Springs and the monitoring well northeast of Stump Springs that is tied to the protection of the springs (Stump Springs Monitoring Well).

**Slide 4:** Schematic cross-sections of the valley fill aquifer.

The upper cross-section illustrates a simplified version of the aquifer that is used for simplistic analytical solutions. The model assumes three flat-lying, uniform layers; an upper layer of fine-grained clay with silty sand that is about 150 to 200 feet thick, the main aquifer layer consisting of interlayered silty sand and clay that extends to a depth of about 1,000 feet; and a deeper layer of finer-grained clay and silty sand that extends to the bedrock at depths of up to 9,800 feet deep (Blakely, 1998). The water table is assumed to be flat at a depth of about 100 feet below ground surface.

The private wells in the area are typically between about 175 and 300 feet deep, indicating that the upper finer-grained unit is a productive aquifer in spite of the fine-grained description on the logs. It is possible that sandy layers are present that were not sampled or described in the drill cuttings. The production wells for this project are expected to be between 500 and 1,000 feet deep. These conditions greatly simplify site conditions but are used to allow simple analytical solutions to be used to estimate aquifer properties from pumping tests or make simple projections of drawdown. These assumptions ignore the effects of groundwater flow (both horizontal and vertical) in the aquifer and are not meant to represent actual site conditions. Under these assumed conditions no water flows in the aquifer until pumping occurs. Including more complexity in the representation of the aquifer makes the analytical solutions too complex to solve and requires the use of more-complex numeric models to simulate the aquifer.

The lower cross-section illustrates a more-realistic picture of the conditions in the aquifer. The water table is sloped with groundwater flowing through the aquifer under ambient (non-pumping) conditions. Water flows from the recharge area in the Spring Mountains to discharge areas down gradient from the project site. Water

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also flows through the lower finer-grained portion of the valley fill, though at a lower rate due to the lower permeability of the unit.

While the assumptions represented in the upper cross-section are necessary for some of the methods used to analyze aquifer performance test data, they are not meant to represent actual aquifer conditions. Using these assumptions to determine the response of an aquifer to pumping yields unrealistic and inaccurate predictions.

**Slide 5:** Summary of the well construction of private wells near the project site.

CEC provided us with confidential well logs from eight private wells near the site. The wells ranged from 175 to 310 feet deep and pumped at 5 to 30 gallons per minute (gpm). The wells had specific capacity values of 3.5 to 12.5 gpm per foot, indicating the aquifer is fairly permeable in spite of the predominance of clay and fine silty sand that was identified on the well logs. This suggests that sand layers are present that produce water, though the sandy layers may not have been noticed during well construction and are not reported on the driller's logs.

**Slide 6:** Figure Water-5 from the CEC Preliminary Staff Assessment.

The figure shows the potentiometric surface as mapped by CEC using existing wells near the project site. The data show a gradient in the valley fill aquifer to the southwest. Water levels are approximately 250 feet higher in the Stump Springs Monitoring Well than at the project site.

**Slide 7:** Schematic showing groundwater flow across site under ambient conditions.

The top figure is a schematic cross-section of the aquifer showing water moving to the southwest (right to left in the figure) beneath the project site. The lower figure is a map view from the line of spring mounds to the project site. The map has been rotated so the groundwater gradient runs right to left across the figure. The vertical lines are groundwater elevation contours with a 50-foot interval showing approximately 250 feet of head change from the spring mounds to the project site. The horizontal arrows are groundwater flow lines showing that water is flowing to the southwest beneath the site under ambient (non-pumping) conditions. Assuming the aquifer is about 1,000 feet thick and has a permeability of about 0.8 foot per day (from pumping test data) with a gradient of about 0.01 (from CEC Figure Water-5), and the site has a footprint that is about 2,500 feet wide, then approximately 1,760 AFY flows beneath the site under existing conditions.

**Slide 8:** Schematic showing groundwater flow across site under projected pumping conditions.

This slide shows a schematic representation of the response to the aquifer from the projected pumping rate of 140 AFY. The top figure is a schematic cross section of the aquifer showing the cone of depression created by the pumping well. The cone of depression takes water from storage in the aquifer and intercepts regional groundwater flow to supply water to the well. The drop in head in the aquifer around the pumping well creates a vertical gradient between the aquifer and the finer grained units above and below the aquifer. Water flows from the finer-grained units into the aquifer and

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provides recharge to the aquifer in the form of vertical leakance. We have assumed that most of the leakance comes from the lower unit based onsite geology. This unit is approximately 8,000 feet thick and has a tremendous volume of water in storage. It also receives recharge through horizontal flow through its more permeable zones, though probably at a lower rate than in the main aquifer unit.

The lower figure is a map showing the interaction of the cone of depression created by the pumping well and the regional groundwater gradient. The cone of depression distorts the regional gradient and deflects water toward the well. The initial water pumped by the well comes from depletion of the storage in the aquifer and the cone grows to supply the water to the well. As the cone grows, more water is diverted from the regional flow to the pumping well. This is in addition to the water entering the aquifer from vertical leakance from the finer grained units. Eventually, enough water is diverted to the well from the regional gradient and vertical leakance to replace the water being pumped. Under these conditions, the cone of depression stabilizes and a new steady state equilibrium condition is established in the aquifer. Water levels in the aquifer stabilize and the cone of depression does not expand. The water being pumped from the site comes from capture of regional flow and induced leakance from the finer-grained units. The water leaving the site is reduced by the pumping rate of the well, less the volume of vertical leakance into the aquifer. For the conditions assumed for the project, this amounts to a reduction in down gradient discharge of about 8 percent (or less) of the normal groundwater flow beneath the site. The pumping test data indicates that the new steady state equilibrium conditions are established after about a day of pumping at the Orchard Well and within a week or so at Well 3.

**Slide 9:** Summary of the pumping test conducted on the project site in February 2012.

Two wells, the Orchard Well and Well 3, were pumped at 45 gpm (each), which is equivalent to 140 AFY. Water levels were measured in five monitoring wells constructed for the test and in two existing irrigation wells onsite. Water levels were monitored in the Stump Springs Monitoring Well using a data logger installed by BSE for the test for a period starting 30 days prior to the test and continuing for about 2 days after the test. The pumping test was terminated after 4.5 days of pumping due to vandalism that destroyed the pump in Well 3.

**Slide 10:** Summary of the observed drawdown during the test.

Two wells, the Orchard Well and Well 3, were pumped at 45 gpm (each), which is equivalent to 140 AFY. The Orchard Well experienced 72.3 feet of drawdown after 4 days of pumping. MW1, located 200 feet from the Orchard Well experienced 2.5 feet of drawdown at the end of the test. Well 3 experienced 13.3 feet of drawdown by the end of the test. MW3, located 200 feet from Well 3, experienced 1.4 feet of drawdown by the end of the test. No drawdown was observed in MW6, located 1,450 feet from Well 3 or in any of the other wells monitored during the test.

**Slide 11:** Figure Water-28 from the CEC Preliminary Staff Assessment.

This figure presents a summary of the pumping rates during the test. Pumping rates were measured by a flow meter on each pump and read frequently during the test.

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Pumping rates in both wells were held to within  $\pm 5$  percent of the nominal pumping rate of 45 gpm. We believe this represents very good control on pumping rates and is well within industry standards for aquifer performance tests. While the variation in pumping rates were minor, they did create minor fluctuation in water levels in the pumping wells and nearby monitoring wells. These changes are small and transient. We initially ignored them in our analysis because they did not significantly affect the results. Subsequently, we factored the changes in pumping rates into our analysis to document how the methods of analysis can incorporate these fluctuations into the type curve fits and how they do not significantly alter our initial interpretations.

**Slide 12:** Summary of observed drawdown at the end of pumping.

This figure presents a summary of the observed drawdown in the wells monitored at the end of the 4.5 days of pumping. The only drawdown observed occurred in the wells located with 200 feet of the pumping wells. No drawdown was observed in any wells located farther from the pumping wells. This illustrates the empirical data which documents that the cone of depression after 4.5 days of pumping was limited to the area within a few hundred feet around each well.

**Slide 13:** Summary of observed water levels at the Stump Springs Monitoring Well.

This figure presents a summary of the observed water levels in the Stump Springs Monitoring Well measured by a pressure transducer and data logger installed by BSE for the test. The upper plot shows the change in water levels in the well starting about 30 days prior to the test and continuing for approximately 2 days after pumping terminated. The water level in the well was declining during the entire period of measurement. The water level dropped approximately 0.4 foot from the day the data logger was installed to the start of the pumping test. Water levels declined at the same rate during the test and after the pumping stopped with no apparent change in slope. The data indicate that the water levels are responding to some other factors, but the pumping test had no influence on the well.

The lower plot presents historic water level measurements in the Stump Springs Monitoring Well made by BLM starting in late 2003. The water level in the well increased about 7 feet over a short period in 2005 in response to some unknown recharge event. Water levels have been slowly declining, relatively consistently, with seasonal oscillations, since the recharge event and were still approximately 2 feet above the initial conditions at the start of the pumping test. The declining water levels measured before and during the pumping test are apparently a continuation of this trend and do not appear to be associated with the aquifer performance test pumping. The historic water level data demonstrate that water levels in this well can vary by several feet over short intervals and that short period oscillation of 2 to 3 feet are typical.

**Slide 14:** Figure Water-21 from the CEC Preliminary Staff Assessment.

Aquifer performance test data is typically analyzed by plotting the change in drawdown versus time and fitting families of type curves to the data to determine the transmissivity (permeability times thickness), storage coefficient (release of water from storage in the aquifer when pumping), and boundary conditions (the fluxes of water at



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the edges of the aquifer) that describe the general structure of an aquifer and how it responds to pumping. Of significant note in this analysis is if water can flow vertically from finer-grained units above or below the aquifer (leaky conditions) or if the aquifer is tightly sealed and receives no vertical flow from adjacent beds (fully confined conditions). Each family of type curves has a distinctive shape and is diagnostic of the boundary conditions of the aquifer. Finding the best-fitting type curve is an unbiased method of determining the boundary conditions of the aquifer and yields the most reliable estimates of the aquifer properties and its response to pumping.

This figure shows two plots of the drawdown observed in MW4 during the pumping test plotted against time on logarithmic plots with a fit to the type curve for a fully confined aquifer. The figure illustrates CEC staff's attempt to fit the pumping test data from MW4 to a fully confined type curve (Theis solution). The plots appear to fit reasonably well but the drawdown data is plotted on an extended time (horizontal) axis, which has the effect of compressing the data and obscures significant deviations of the drawdown data from the type curve. We believe that the deviation is significant for understanding the actual response of the aquifer to pumping and for determining the proper boundary conditions that govern the response of the aquifer to pumping.

**Slide 15:** Comparison of curve fits for MW4.

This figure shows the drawdown data measured in MW4 (50 feet from Well 3) during the pumping test plotted with a time axis that fits the length of the test. The plot on the left is our best fit for a fully confined aquifer (Theis solution). The plot on the right is the best fit for a leaky aquifer (Hantush solution). The type curves for both solutions were corrected for variations in pumping rate, which resulted in minor perturbations along the normally smooth plots of the type curves.

The red oval on the left hand plot indicates the portion of the pumping test data that falls below the fully confined solution. This deviation is due to vertical flow from the finer-grained units into the aquifer in the form of recharge to the aquifer from vertical leakance. The leakance provides water to the pumping well from storage in the underlying unit and reduces the drawdown that would occur in the aquifer if it were fully confined. The plot on the right side of the slide shows the curve fit for a leaky aquifer (Hantush solution). The type curve fits the observed data nearly perfectly. The corrections for variation in the pumping rate create minor fluctuation in the data that are reproduced nearly identically in the type curve. The red oval highlights the later portion of the curve that follows the field data nearly perfectly. While the differences between these two curve fits may seem subtle at first, careful analysis indicates that the aquifer is in fact the leaky artesian type and that assuming fully confined conditions cannot reproduce the pumping test data.

The material below the aquifer at the project site is approximately 8,000 feet thick and receives slow recharge from the same recharge area as the aquifer unit. It contains a large volume of water that will not be exhausted in the life of the project and represents a sustainable source of water to the wells.

**Slide 16:** Comparison of curve fits for MW1.



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This figure shows the drawdown data measured in MW1 (200 feet from the Orchard Well) during the pumping test. The plot on the left is our best fit for a fully confined aquifer (Theis solution). The plot on the right is the best fit for a leaky aquifer (Hantush solution). The type curves for both solutions were corrected for variations in pumping rate, which resulted in minor perturbations along the normally smooth plots of the type curves.

The red oval on the left plot indicates the portion of the pumping test data that falls below the fully confined solution. The plot clearly indicates that vertical leakance is a much more important source of water to the well than in MW4. This is probably due to the fact that the aquifer is less permeable around the Orchard Well and more drawdown was created around the pumping well. The deviation from the confined type curve is obvious. The water level in MW1 stabilized just over 1 day after pumping started and remained stable for the remainder of the test. The type curve for a fully confined aquifer (blue line) shows that water levels would have continued to decline during the pumping test if the aquifer were fully confined. There should have been nearly three times more drawdown in the aquifer if it were fully confined than observed in the test data.

The plot on the right side of the slide shows the curve fit for a leaky aquifer (Hantush-Jacob solution). The type curve fits the observed data nearly perfectly. The corrections for variation in the pumping rate create minor fluctuation in the data that are reproduced nearly identically in the type curve. The differences between these two curve fits are stark and obvious. Analysis of the data indicates that the aquifer is in fact the leaky artesian type and that assuming fully confined conditions cannot reproduce the pumping test data.

**Slide 17:** Comparison of curve fits for MW2.

This figure shows the drawdown data measured in MW2 (50 feet from the Orchard Well) during the pumping test. The plot on the left is our best fit for a fully confined aquifer (Theis solution). The plot on the right is the best fit for a leaky aquifer (Hantush solution). The type curves for both solutions were corrected for variations in pumping rate, which resulted in minor perturbations along the normally smooth plots of the type curves. The plots clearly show that the data do not fit the fully confined type curve but fit the leaky (Hantush-Jacob) type curve nearly perfectly.

**Slide 18:** Comparison of curve fits for MW3.

This figure shows the drawdown data measured in MW3 (200 feet from Well 3) during the pumping test. The plot on the left is our best fit for a fully confined aquifer (Theis solution). The plot on the right is the best fit for a leaky aquifer (Hantush solution). The type curves for both solutions were corrected for variations in pumping rate, which resulted in minor perturbations along the normally smooth plots of the type curves. The red oval on the left plot illustrates that the pumping data falls below the confined solution indicating leakance is occurring. The plot on the right side of the slide indicates that the data fits the leaky type curve (Hantush) nearly exactly.

**Slide 19:** Comparison of curve fits for MW5.

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This figure shows the drawdown data measured in MW5 (25 feet from Well 3) during the pumping test. The plot on the left is our best fit for a fully confined aquifer (Theis solution). The plot on the right is the best fit for a leaky aquifer (Hantush solution). The type curves for both solutions were corrected for variations in pumping rate, which resulted in minor perturbations along the normally smooth plots of the type curves.

The red oval on the left plot illustrates that the pumping data falls below the confined solution indicating leakance is occurring. The plot on the right hand side of the slide indicates that the data fits the leaky type curve (Hantush) nearly exactly.

**Slide 20:** Comparison of projected drawdown based on fits for MW1 and MW3.

If capture from the regional gradient is ignored, and if no other boundaries exist in an aquifer, the water level in a monitoring well will follow the proper type curve indefinitely. Projecting the type curve out to later times is an easy way to predict the future drawdown in a well under idealized conditions. While these assumptions are unrealistic, they do allow us to simply project future drawdown around a well. In reality, capture of regional flow will stabilize the cone of depression, even for a fully confined aquifer, so water levels will tend to stabilize before the drawdown predicted by the later portions of a type curve occur.

This figure shows the difference in drawdown predicted after 25 years of pumping in MW1 and MW3 assuming either confined or leaky aquifer conditions. The left plot shows that in MW1 water levels are stable after a few days of pumping assuming leaky aquifer conditions (blue line) and the drawdown in the well will stay at about 2.5 feet for the life of the project. However, if the aquifer is assumed to be fully confined, drawdown will continue in the well and reach about 35 feet after 25 years (red line). This is inconsistent with the response of the aquifer during the pumping test and illustrates how using the wrong boundary conditions for the aquifer can grossly overestimate the drawdown in the aquifer.

The right plot shows that if there was no regional flow, water levels in MW3 would continue to decline slowly over 25 years of pumping to about 3 feet assuming leaky conditions (blue line). If fully confined conditions are assumed (red line), water levels drop at a faster rate and reach about 6 feet after 25 years. Ignoring the leakance causes the predicted drawdown to be about twice as high as aquifer properties suggest. In reality, the regional flow will stabilize water levels in the aquifer after a few weeks of pumping and actual drawdown will be lower.

**Slide 21:** Distance drawdown plot around Well 3 using 25 year drawdown projections.

It is possible to estimate the size of the cone of depression in an aquifer using a procedure known as a distance drawdown plot (Driscoll, 1986). The drawdown in an aquifer should plot on a straight line on a semi-log plot of distance from the well. This method is limited by similar assumptions as other analytical solutions, such as the aquifer is flat and homogenous. While it is limited by its assumptions, it is still a commonly applied means to estimate the extent of the cone of depression of a well.

We used the best fitting type curves for MW3, MW4, and MW5 to project the drawdown out to 25 years of continuous pumping (ignoring the effects of the regional

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gradient). We plotted the predicted drawdown values on a distance drawdown plot and projected a straight line through the data points. The points fell very close to a straight line. The slope of the line yields an estimate of the aquifer transmissivity of about 6,000 gpd per foot, which is very near the estimated average value for the aquifer, indicating that the projected drawdown values are reasonable. The best-fitting line was projected to the point of zero drawdown where it intercepted the distance axis at about 1,500 feet. This suggests that the drawdown from Well 3 will not extend beyond 1,500 feet after 25 years of pumping. This analysis is simplistic, but it demonstrates how limited the impacts of pumping will be in the aquifer if leakance is considered. This analysis does not include the effects of capture of the regional groundwater flow which in reality will limit the cone of depression to a smaller size.

**Slide 22:** Figure Water-23 from the CEC Preliminary Staff Assessment.

The CEC staff projected drawdown from the project assuming confined conditions for a range of transmissivity values. This plot shows the results using the CEC assumptions for a transmissivity and storage value about half of the site conditions and continuous pumping at 101 gpm (slightly over projected demand) for 30 years assuming fully confined conditions. They predicted approximately 7 feet of drawdown at the Stump Springs Monitoring Well using these assumptions. They ran other simulations using transmissivity and storage values estimated from the pumping data and at twice the estimated values. The predicted drawdown values assuming confined conditions range from 1.8 to 7 feet. We believe that the pumping test data indicates that assuming confined conditions is not justified. We believe that actual cone of depression will be much smaller and no drawdown will reach the Stump Springs Monitoring Well.

**Slide 23:** Site map showing modeled groundwater gradient.

We conducted some simple analytical element models using the Winflow modeling package. This map shows the location of the project site, Stump Springs, and the Stump Springs Monitoring Well. We included a regional gradient on this figure based on the water level data collected by Nye County to illustrate the direction of groundwater flow to the southwest, placing Stump Springs and the monitoring well at about 250 feet higher head and slightly side gradient from the site. Winflow is a simple modeling package that uses the same analytical solutions as the aquifer performance test analysis methods. While the model allows a gradient to be specified, the model does not incorporate the gradient into the drawdown calculations so it cannot predict the effects of the regional gradient on the propagation of the cone of depression or the capture of regional flow. Winflow does allow vertical leakance to be simulated. As a result, the model predicts the effects of leakance but does not factor in the capture of the regional groundwater flow.

**Slide 24:** Site map showing modeled pumping with no gradient for fully confined conditions

In an effort to initially replicate the CEC Staff assumptions using a simple groundwater modeling package, we used Winflow to simulate pumping two wells at a total of 140 AFY (45 gpm each) for 25 years assuming fully confined conditions and a storage term of 0.005. The model predicted between 2 to 3 feet of drawdown at Stump Springs

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and the Stump Springs Monitoring Well, confirming CEC's predictions for their assumption of fully confined conditions.

**Slide 25:** Site map showing modeled pumping for leaky conditions (ignoring gradient).

We then revised the Winflow model inputs to simulate pumping two wells at a total of 140 AFY (45 gpm each) for 25 years assuming leaky conditions with a storage term of 0.005. The model predicted the cone of depression does not propagate beyond the site boundary. The inset box in the upper left is a blow up of the site near the pumping wells. The model predicts the 0.1-foot contour line will extend approximately 1,400 feet from the wells, which is consistent with the results of the pumping test. Comparing this result to the result presented in Slide 24 demonstrates the importance of including leakance in the simulation to accurately predict future drawdown.

**Slide 26:** Summary of Major Points.

The data collected by the pumping test demonstrated the aquifer can easily support the water needs of the project. The project will only use about 8 percent or less of the groundwater that flows beneath the site. The aquifer also receives recharge from vertical leakance when pumped which reduces the amount of drawdown created in the aquifer from pumping. Vertical leakance must be considered to match the field data to aquifer performance test type curves. Ignoring the vertical leakance produces predictions of drawdown that greatly overestimate the size of the cone of depression. The aquifer parameters measured by the pumping test demonstrate that no drawdown will occur at Stump Springs due to the project and no significant drawdown will occur in the private wells adjacent to the site.

### **Specific Comments**

18. Page 4.15-1, Summary of Conclusion, 3<sup>rd</sup> paragraph, Item 1: The basin is not in overdraft but is over-permitted per the Nevada State Water Engineer. The Nevada State Water Engineer has no authority over water rights in California.
19. Page 4.15-1, Summary of Conclusions, 3<sup>rd</sup> paragraph, Item 2: We believe the following conclusion is not supported by the data for reasons explained in General Comment 2 above: "If not mitigated, the proposed project pumping could contribute to a water level decline in areas that support groundwater dependent vegetation, including the Stump Springs Area of Critical Environmental Concern."
20. Page 4.15-1, Summary of Conclusions, 3<sup>rd</sup> paragraph, Item 3: We believe the following conclusion is not supported by the data for reasons explained in General Comment 2 above: "If not mitigated, the proposed project could substantially lower the water level in neighboring domestic wells."
21. Page 4.15-1, Introduction, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: Please change "Bright Source Energy" to "the Applicant."
22. Page 4.15-2, Introduction, 1<sup>st</sup> full paragraph, last sentence: Please change "HHSO 2011a" to "HHSEGS 2011a."

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23. Page 4.15-5, heading: Please change “Hyrogeologic Setting” to “Hydrogeologic Setting.”
24. Page 4.15-8, 1<sup>st</sup> paragraph (partial paragraph), 3<sup>rd</sup> sentence in paragraph: Please reword the sentence as follows: “Recent water quality analyses from wells on the project site show the groundwater is relatively low in Total Dissolved Solids (between 250 and 361 ppm, based on 2011 and 2012 data) and has a bicarbonate character.”
- This is based on the water quality analyses performed as part of the aquifer pump testing in 2012.
25. Page 4.15-9, Method for Determining Significance, Water Resources, b: Please see comment under Alternatives. The significant impact should be measured against what the current beneficial use impact or potential impacts are. Need to consider what the current entitled draw from the project site would be if full development of residential lots were to occur.
26. Page 4.15- 9, Method for Determining Significance, Water Resources, c: Please define the term “affected” when stating that species or habitats would be affected. This criterion is better suited for the biological resources section.
27. Page 4.15- 9, Method for Determining Significance, Water Resources, c: The PSA should identify with specificity the legal authorities for these purported significance criteria. Citations to those legal authorities should be included in the FSA.
28. Page 4.15-10, 3<sup>rd</sup> full paragraph: Please reword the sentence as follows:
- The long-term declining trend estimated by these data is comparable to that estimated for the rest of this portion of the basin and is about 0.37 foot per year, or 4.44 inches per year.
29. Page 4.15-10, 3<sup>rd</sup> paragraph: Please provide WATER SUPPLY Figure 15 at a scale similar to that of the other figures. The scaling on this figure makes the slope on the Orchard Well figure look steeper than some of the other figures.
30. Page 4.15-10, 7<sup>th</sup> full paragraph, 1<sup>st</sup> sentence: The years 2005 through 2011 represent the period of heaviest drought in the area so are not representative of a trend. In addition, they only cover a span of 6 years, which is not sufficient data to make a determination of trends.
31. Page 4.15-10, 7<sup>th</sup> full paragraph, 3<sup>rd</sup> sentence: The magnitudes of water level changes indicated by Sen’s Test for slope indicate that the median water level change in the wells reviewed was about (-)0.273 feet per year (ft/yr), or approximately 3.28 inches per year.
32. Page 4.15-11, 2<sup>nd</sup> paragraph, 7<sup>th</sup> sentence: The PSA states: “The northern portion of the PVGB has an extensive record of pumping that shows an approximate loss in water levels of one-foot per year.”
- Is this net loss?
33. Page 4.15-11, 2<sup>nd</sup> paragraph, last three sentences: We suggest that the division between

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the subbasins is at the faults to the east of the site, placing only the Dry Lake Bed Well, Old Orchard Well, and Quail Well in the southern subbasin. This results in an arithmetic mean of -0.18, significantly lower than the mean for all eight wells (-1.185). This suggests that the boundary of the subbasin is more properly drawn along the faults.

34. Page 4.15-12, 1<sup>st</sup> full paragraph, 2<sup>nd</sup> sentence: The PSA states: "The average estimate of storativity is 0.005/ft."

This low value of storativity (also commonly called "storage coefficient") is for a confined (rather than unconfined; or semi-confined and leaky) aquifer, wherein the response to pumping is associated with the groundwater coming from compression of the water and aquifer matrix in an aquifer that is not dewatered (pumping of an unconfined aquifer will cause dewatering of the aquifer materials in the area of the cone of depression). For the semi-confined conditions at the HHSEGS site, the loss of storage from declining water levels represents dewatering of the aquifer materials in which case the effective porosity is a more-appropriate value to use. Assuming the effective porosity is on the order of 0.1 to 0.3, the net change in storage for the CEC subbasin is 4,210 AFY (using  $S=0.1$  and 0.273 foot per year decline). The net change for the subbasin west of the faults is on the order of 1,300 AFY using 0.18 foot per year decline and a subbasin of 72,000 acres. The project water use of 140 AFY is small compared to these values. This translates to a net increase in decline of 0.01 foot per year for the CEC subbasin and 0.02 foot per year for the subbasin west of the fault, which is an order of magnitude lower than CEC estimates.

35. Page 4.15-12. 2<sup>nd</sup> full paragraph: The PSA states: "This loss of storage would translate to an additional drop of water levels in the southern area of the PVGB of about 0.21 ft/yr, with a total decline equal to approximately 0.48 ft/yr." Per the previous comments, Staff's assumptions regarding the basin being a confined aquifer are incorrect given the evidence previously discussed. The actual project related impacts to the PVGB would not cause this level of water level decline.

36. Page 4.15-12. 2<sup>nd</sup> full paragraph: The PSA states: "Groundwater overdraft occurs when groundwater basin outflows exceed inflows. Overdraft can be characterized by groundwater levels that decline over a period of years and never fully recover, even in wet years. The southern portion of the PVGB exhibits these characteristics of overdraft. Historical water levels suggest a continuous decline over the long-term (past 60 years) and the recent six-year period of continuous monitoring. Staff believes that these water level trends in the southern portion of the PVGB indicate overdraft conditions and that project pumping could exacerbate basin wide overdraft."

It is possible the basin has been in overdraft for thousands of years as is evident from the dry lake bed. Thus, this trend will continue with or without development of the plant.

37. Page 4.15-12. 2<sup>nd</sup> full paragraph: Mitigation requirements (WATER SUPPLY-1) should provide credit for the reduction in water use from allowed current residential use and for the provision of storm water recharge via implementation of best management practices (BMPs).



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38. Page 4.15-12, 2<sup>nd</sup> full paragraph: The PSA states: "This condition requires the project owner to provide a water use offset within the PVGB that is equal to project pumping."

Is this defined as a ratio of 1:1 and any overdraft permitted rights? Meaning active or non active?

39. Page 4.15-13, Increased Cost of Pumping, Equation 2: The actual equation for the Cooper-Jacob modified non-equilibrium method is  $s=2.30Q/(4\pi T)\log (2.25Tt/r^2S)$ . A more-robust form of this equation is the Theis equation  $s=114.6QW(u)/T$  and  $u=1.87r^2S/Tt$  with Q in gpm, T in gpd per foot, r in feet and t in days.
40. Page 4.15-13, Increased Cost of Pumping, Equation 2 Assumptions: These are simplifying assumptions used to make the analytical solutions solvable. They are not meant as an expression of real aquifer conditions. They are limitations of the method that clarify how the solution will vary from real world conditions.
41. Page 4.15-15, Thresholds to Determine Significant Impact, 1<sup>st</sup> sentence: These calculations are based on assumed theoretical aquifer conditions that we believe do not reflect site conditions. Our modeling indicates that drawdown will not propagate to the domestic wells based on the regional gradient.
42. Page 4.15-15, Thresholds to Determine Significant Impact, 2<sup>nd</sup> sentence: Please reword this sentence as follows:
- One threshold therefore could be limiting drawdown to 10 feet below existing conditions or mitigating adverse effects of drawdown greater than 10 feet below existing conditions.
43. Page 4.15-15, Aquifer Parameters, 2<sup>nd</sup> paragraph, 1<sup>st</sup> sentence: Curve matching is a long-established industry standard. It is the basis for aquifer analysis dating back over 70 years and is not considered subjective. Please revise the PSA to reflect this fact.
44. Page 4.15-16, 1<sup>st</sup> full paragraph after Table 4: These estimates are not significantly different from what we derived for MW4 using our curve fits. MW3, MW4, and MW5 have lower leakance and can roughly be fitted to the Theis fully confined type curves. Figure 21 uses a compressed horizontal scale (7 log cycles), which make the fits look better than they are. MW1 and MW2 (around the Orchard Well) had higher leakance and cannot be fit to a Theis curve. Plots of the Theis curve fits and leaky artesian curve fits with a more-typical projection for the horizontal axis are included in these slides to show the improvement in the curve fits using leaky artesian curves rather than Theis curves. The differences in MW 1 and MW2 are stark and not subjective. The differences in MW3, MW4, and MW5 are not as pronounced, but the differences are significant. The differences in transmissivity are not large. The biggest loss of information from using the wrong curve comes in the assumptions made in the boundary conditions of the aquifer. We believe the monitoring well data is clearly leaky artesian and the assumption of fully confined conditions is not supported by the data.



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45. Page 4.15-16, 2<sup>nd</sup> full paragraph, 1<sup>st</sup> sentence: The PSA states: "Using staff's estimates of transmissivity and Equation 3 above it is possible water level declines in neighboring wells could be on the order of 10-15 feet after 30 years of project pumping."

Is the 10 to 15 inclusive of background declines currently predicted in the PSA by Staff's estimates?

46. Page 4.15-16, 2<sup>nd</sup> full paragraph: Actual drawdown for those assumptions is 7.84 feet after 30 years pumping at 101 gpm. This ignores recharge and regional flow. Actual drawdown will be less.
47. Page 4.15-16, last paragraph, 2<sup>nd</sup> sentence: The PSA is requiring Applicant to take responsibility for increased pumping costs and maintenance that may be experienced by residents of Charleston View. How is the effect of over pumping from neighbors' wells or from other projects within the basin to be accounted for? The HHSEGS will bear the burden of others' pumping under this scenario. In addition, the condition of certification may incentivize neighboring owners to over pump their wells, by eliminating financial deterrents, thereby hastening overdraft conditions.
48. Page 4.15-16, last paragraph, 3<sup>rd</sup> sentence: Conditions of Certification WATER SUPPLY-6 and WATER SUPPLY-7 require monitoring and mitigation of potential impacts to neighboring domestic wells. This should only pertain to impacts above the baseline.
49. Page 4.15-17, Groundwater-Dependent Vegetation and Stump Springs, 1<sup>st</sup> paragraph, last sentence: What is the basis for BLM's claim that Stump Springs still produces water at the site intermittently?
50. Page 4.15-17, 4<sup>th</sup> paragraph, 2<sup>nd</sup> sentence: Both of these assumptions are exceedingly conservative and essentially incorrect. Based upon our aquifer analysis and that of others in the basin, the aquifer is unconfined or leaky artesian; and, the clear existence of a regional groundwater gradient as indicated in Figure 5 of the PSA is a priori indication of the existence of recharge.
51. Page, 4.15-17, 5<sup>th</sup> paragraph, 1<sup>st</sup> sentence: These calculations are based on assumed theoretical aquifer conditions that we believe do not reflect site conditions. Our modeling indicates that drawdown will not propagate to Stump Springs based on the regional gradient and leakance without regard to the likely presence of a permeability barrier in the aquifer created by one or more faults.
52. Page 4.15-18, 1<sup>st</sup> paragraph after Table 5, 2<sup>nd</sup> sentence: This analysis would only be valid for a fully confined aquifer of infinite extent with no gradient. In reality the site wells are approximately 250 feet lower than Stump Springs and the aquifer is likely bounded by faults that will impede the propagation of drawdown to the springs.
53. Page 4.15-18, 1<sup>st</sup> paragraph after Table 5, 3<sup>rd</sup> sentence: The PSA states that the approach was supported by the Applicant in the AFC. However, such support was given by Applicant prior to performance of the Aquifer Pump Test. Since that time, the belief that in the possibility that the aquifer is confined is no longer held by the Applicant.

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54. Page 4.15-18, 1<sup>st</sup> paragraph after Table 5, 5<sup>th</sup> sentence: To correctly apply superposition, one must consider the actual flow field and the change in flow that occurs in response to pumping. The cone of depression, superimposed on the sloping potentiometric surface, changes the shape of the surface and causes some of the regional groundwater flux to be diverted to the pumping well. As the cone grows deeper and wider, more water is diverted to the well. At some point, enough water is diverted to the well to replace the water being pumped and the cone of depression no longer expands and a new stable potentiometric surface is established. This does not occur in a theoretical infinite aquifer with no gradient, and such aquifers do not exist. Our modeling shows the cone of depression will stabilize shortly after pumping begins, even with the assumption of no leakance, after which time water levels will no longer decline. This is entirely consistent with the results of the pumping test on site and consistent with normal aquifer responses.
55. Page 4.15-18, 1<sup>st</sup> paragraph after Table 5, 6<sup>th</sup> sentence: This model was designed to predict worst-case conditions before any site data was available. Although the model was intended to incorporate the regional gradient the Winflow modeling package does not factor the gradient into its drawdown calculations. While Winflow does allow a gradient to be specified, it does not include the gradient in the solution but only applies it after the fact to draw the contour lines.
56. Page 4.15-19, 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence: Please provide support for the statement that “any” decline in water levels could result in adverse impacts to groundwater dependent vegetation and define “adverse impacts.”
57. Page 4.15-20, 1<sup>st</sup> paragraph (partial), last two sentences: This calculation refers to groundwater flow velocity, which is essentially how long would it take for a drop of water to move to the river. This is different than the propagation of drawdown, which is based on confined storage and transmissivity of the aquifer.
58. Page 4.15-20, 2<sup>nd</sup> paragraph, 3<sup>rd</sup> sentence: The monitoring program described in WATER SUPPLY-8 will measure water level declines from any source, not just the project. Multiple factors could contribute to the decline.
59. Page 4.15-22, Drinking Water, 2<sup>nd</sup> paragraph, 1<sup>st</sup> sentence: The HHSEGS is expected to employ ~~100~~120 full-time employees and 50 to 60 shift workers during operations and many more during construction.
60. Page 4.15-22, Drinking Water, 4<sup>th</sup> paragraph, 1<sup>st</sup> sentence: Please reword this sentence as follows:

Staff recommends Condition of Certification **WATER SUPPLY-10**, if groundwater will be used for potable purposes, which that would require the applicant to submit information to the Inyo County Environmental Health Department at least sixty (60) days prior to commencement of construction at the site, that would typically accompany an application ~~obtain for obtain~~ a permit to operate a non-transient, non-community water system ~~with the Inyo County Environmental Health Department at least sixty (60) days prior to commencement of construction at the site. if groundwater~~

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~~will be used for potable purposes.~~ This condition would ensure that the applicant meets all provisions of Title 22, Section 3 to provide a suitable domestic water supply.

61. Page 4.15-23, 1<sup>st</sup> full paragraph: Please reword this paragraph as follows:

Staff also recommends Condition of Certification **WATER SUPPLY-3**, which would ensure that the domestic wells are constructed or modified in accordance with County standards and registered with the State of California through DWR. The applicant shall submit a well construction packet to the Inyo County Environmental Health Department for review and comment and to the CPM for review and approval. ~~A~~ Well Completion Report shall also be submitted to DWR prior to approval.

62. Page 4.15-23, Cumulative Impacts and Mitigation, 2<sup>nd</sup> paragraph: These calculations are based on assumed theoretical aquifer conditions that we believe do not reflect site conditions. Aquifer properties have not been determined at the Sandy Valley site.
63. Page 4.15-24, Basin Balance, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: The loss in storage attributable to the project would be equal to the pumping at the site, a maximum of 140 AFY, immediately after construction and would decrease to zero once the cone of depression stabilized.
64. Page 4.15-24, Basin Balance, 1<sup>st</sup> paragraph, 2<sup>nd</sup> sentence: The loss in storage attributable to the projects would be no greater than the sum of pumping at the sites, a maximum of 317 AFY, immediately after construction if they all started pumping on the same day, and would decrease to zero once the cones of depression stabilized.
65. Page 4.15-24, Basin Balance, 3<sup>rd</sup> paragraph, last sentence: Please reword the sentence as follows:
- Their combined use of up to ~~551~~ 317 AFY would represent about ~~4.6-3%~~ of the basin's safe yield.
66. Page 4.15-25, State Water Resources Control Board Resolutions, 1<sup>st</sup> paragraph: This 1975 Resolution is just that, a resolution. Its legal weight is questionable. It also focuses on new appropriations of surface water. It is inapplicable here on the facts.
67. Page 4.15-26, Order from the Genesis Solar Project Committee, 1<sup>st</sup> paragraph: This Genesis reference is NOT a decision of the Commission. It was an interim order of the Committee. It is NOT reflected in the Final Decision. This is not precedent because it is not a decision of the Commission. It is also directly contradicts California Water Law, the constitutional sections cited previously, about making reasonable and beneficial use of water. The California Constitution does not require "worst, feasible available water that applicant could use for particular purposes on a project."
68. Page 4.15-31, Conclusions, Conclusion 2: We believe this conclusion is based on an inaccurate understanding of the pumping impacts. See previous comments.
69. Page 4.15-31, Conclusions, Conclusion 3: We believe this conclusion is based on an inaccurate understanding of the pumping impacts. See previous comments.

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70. Page 4.15-51, Appendix A: February 2012 Pump Test Review, Type Fit Curves, 3<sup>rd</sup> paragraph: We believe the curve fits were in fact very good and much better than curve fits for fully confined conditions. Both wells are slotted starting from depths of near surface (Orchard well) and 123 feet (Well #3) and are screened across the full depth of each well, which is believed to be near the base of the aquifer. The formation logs for the wells onsite all show the aquifer consists of thin layers of silty sand and clay to depths of about 1,000 feet. There are no distinct aquifer units and confining units, rather a layer cake of aquifers and confining units. In short, both wells were essentially fully penetrating wells and the monitoring wells were completed in the producing interval. Partial penetration effects only occur when the pumping well is screened across a portion of a thick aquifer sequence and induces vertical flow components from converging flow near the well. Since both wells are essentially fully penetrating and the monitoring wells were completed within the producing interval of the aquifer, partial penetration effects are not a significant factor. It is also worth noting that partial penetration effects, when they are significant, result in additional drawdown in the production wells and monitoring wells. As such, partial penetration makes the aquifer look less productive and would produce calculated aquifer properties that are more conservative.
71. Page 4.15-52, 1<sup>st</sup> full paragraph, last two sentences: Both wells were completed across the intervals the monitoring wells are screened in. The formation logs of the wells show that the aquifer consists of thin layers of silty sand interbedded with clay. We believe that the monitoring wells were completed in the same material as the production wells. The pumping data from both production wells yields transmissivity values that are very similar to the values obtained from the monitoring well data indicating that production wells and the monitoring wells are behaving similarly and are completed in a common hydraulic unit.
72. Page 4.15-52, Applicant Projected Impacts, 2<sup>nd</sup> and 3<sup>rd</sup> paragraphs: We have stated the source of recharge to the wells is initially from loss of storage and leakage from the confining beds and comes from diversion and capture of regional groundwater flow over the longer term. This interpretation is consistent with traditional understanding of aquifer flow and well hydraulics and is confirmed with the latest modeling results based on staff's estimates of aquifer properties.
73. Page 4.15-52, Applicant Projected Impacts, 4<sup>th</sup> paragraph: The CEC analysis assumes a stagnant pool of water. There is a significant gradient across the site and the Pahrump Groundwater Valley. Under these conditions groundwater flows into the aquifer on the upgradient side of the site and flows toward the down gradient side. The wells are intercepting some of this flow by creating a cone of depression large enough to capture the volume of water pumped. Once the cone of depression diverts enough water from the regional flow, water levels in the aquifer stabilize in a new shape that diverts the volume of water needed to sustain the well. The ability of the cone of depression to propagate up-gradient is limited, particularly in an aquifer with significant gradients, like this one. The pumped water comes largely at the expense of reduced discharge down gradient of the site and to a very limited extent to induced recharge by steepening the gradient on the upgradient side of the site.

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74. Page 4.15-53, Pump Rate During February 2012 Pump Test, 1<sup>st</sup> paragraph: Pumping rates vary during tests due to a number of factors including the performance of the pump, changes in pump performance based on drawdown and pump curve efficiencies, and variations in the performance of generators over extended runs. Industry standards usually accept variations of up to  $\pm 10$  percent with variations of less than  $\pm 5$  percent considered as very good. For a target rate of 45 gpm, pumping rates within 49.5 to 40.5 would be considered acceptable. With the exception of a period of a few minutes when the generator at Well 3 tripped off, we maintained pumping rates with  $\pm 5$  percent, which should be considered quite good in real world pumping tests.
75. Page 4.15-53, Pump Rate During February 2012 Pump Test, 2<sup>nd</sup> paragraph: Type curves on logarithmic plots rely on the early time data to anchor the vertical and horizontal match of the curves. The trend of the later time data determines which family of type curves best fits the data (fully confined, leaky confined, etc). The data clearly fits the trend of leaky artesian type curves. Small scale variations of the water level data above and below the type curves are the response to the small variation of pumping rates. The most obvious of these effects is the sharp drop below the type curve that happens at about 600 minutes on MW3, MW4, and MW5 when the generator temporarily shuts off. All three wells returned to the type curve shortly after the pump was restarted. The fact that the all five monitoring wells follow the type curves very closely with minor fluctuations above and below the line demonstrates that the aquifer is following the predicted response for that solution and the aquifer properties derived by the curve fit are an accurate measurement of the aquifer properties. Minor variations in pumping rate and water levels are unavoidable in the real world. As long as the variations are small, any errors they introduce are minimal. Figure 29 shows the slight decrease in pumping rate amounted to at most 0.1 foot of variation in MW1, which is less than 4 percent of the drawdown measure in the field. This is well within the error range typical for measurements of aquifer properties.

### Conditions of Certification

76. Page 4.15-33, WATER SUPPLY-1: Please reword this condition as follows:

**WATER SUPPLY-1:** The Project owner shall submit a Water Supply Plan showing that it will ~~replace~~ offset 4,900 acre-feet or 163 AFY and the shall undertake one or more of the activities including, but not limited to, retirement of water rights, forbearance of water use, and water conservation, identified below to mitigate project overdraft impacts to PVGB. These activities shall result in offsetting ~~replacement~~ of 4,900 acre-feet or 163 AFY over the 30-year life of the project. The activities proposed for mitigation will be outlined in a Water Supply Plan that will be provided to the CPM for review and approval.

**Verification:** The Project Owner shall submit a Water Supply Plan to the CPM for review and approval 30 days before the start of extraction of groundwater for construction or operation. The Water Supply Plan shall include the following at a minimum:

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- a. Identification of the activity and water source that will offset ~~replace~~ 4,900 acre feet or 163 acre-feet per year for water pumped from the PVGB; and
- b. Demonstration of the project owner's legal entitlement to the offset water or ability to conduct the activity resulting in offsetting the water pumped; and
- c. Include a discussion of any needed governmental approval of the identified activities, including a discussion of the conditions of approval; and
- d. Discuss whether any governmental approval of the identified activities will be needed, and, if so, whether that approval will require compliance with CEQA or NEPA; and
- e. Demonstration of how water pumped from the PVGB will be ~~replaced~~ offset for each of the activities; and
- f. An estimated schedule for completion of the activities; and
- g. Performance measures that would be used to evaluate the amount of water replaced by the activities; and
- h. Monitoring and Reporting Plan outlining the steps necessary and proposed frequency of reporting to show the activities are achieving the intended benefits and ~~replacing~~ offsetting PVGB extractions.

The project owner shall implement the activities reviewed and approved in the Water Supply Plan in accordance with the agreed upon schedule in the Water Supply Plan. If agreement on identification or implementation of mitigation activities cannot be achieved the project owner shall not begin construction or operation until assurance that the agreed upon activities can be identified and implemented.

77. Page 4.15-34, WATER SUPPLY-2.: Please reword this condition as follows:

**WATER SUPPLY-2:** The proposed project's use of groundwater for all construction activities shall not exceed an average rate of 288 acre-feet per year of construction. The proposed project's use of groundwater for all operations and domestic use activities shall not exceed a 3-year rolling average of 140 acre-feet per year. Water usage shall be recorded using the metering devices specified in WATER SUPPLY-4. Water ~~quality~~ used for project construction and operation will be reported in accordance with Condition of Certification **WATER SUPPLY-6** and **WATER SUPPLY-7** to ensure compliance with this condition. Prior to the use of groundwater for construction, the project owner shall install and maintain metering devices as part of the water supply and distribution system to document project water use and to monitor and record in gallons per month the total volume(s) of water supplied to the project from this water source. The metering devices shall be operational for the life of the project.

**Verification:** Beginning six (6) months after the start of construction, the project owner shall prepare a semi-annual summary report of the amount of water used for construction purposes. The summary shall include the monthly water usage in gallons.



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The project owner shall prepare an annual summary report, which will include ~~daily usage~~, monthly range and monthly average of daily water usage in gallons per day, and total water used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary report will also include the yearly range and yearly average water use by source. For calculating the total water use, the term “year” will correspond to the date established for the annual compliance report submittal.

78. Page 4.15-34, WATER SUPPLY-2, Verification, 2nd paragraph “Water usage” is not defined. Does filling onsite storage tanks count as daily water usage? Or only water taken out of the water system count as “usage”? Please define this term.

79. Page 4.15-34, WATER SUPPLY-3: Please reword this condition as follows:

**WATER SUPPLY-3: PRE-WELL INSTALLATION.** The Project owner proposes to construct and operate six groundwater production wells onsite that will produce water from the Pahrump Valley basin. The Project owner shall ensure that each well is completed in accordance with all applicable state and local water well construction permits and requirements, including Inyo County code Chapter 14.28 Water Wells. Prior to initiation of well construction activities, the project owner shall submit for review and comment a well construction packet to the Inyo County Environmental Services and fees normally required for county well permits, with copies to the CPM; and a request for review within 10 business days. The Project shall not construct a well or extract and use groundwater without CPM approval to construct and operate the well; the CPM may approve without Inyo County’s review and comment if such comment is unreasonably delayed.

**POST-WELL INSTALLATION.** The Project owner shall provide documentation to the County with copies to the CPM that the well has been properly completed. In accordance with California’s Water Code section 13754, the driller of the well shall submit to the DWR a Well Completion Report for each well installed. The Project owner shall ensure the Well Completion reports are submitted. The Project owner shall ensure compliance with all county water well standards and requirements for the life of the wells and shall provide the CPM with two (2) copies each of all monitoring or other reports required for compliance with the Inyo County Environmental Health Services water well standards and operation requirements, as well as any changes made to the operation of the well.

**Verification:** The Project owner shall do all of the following:

- A. No later than sixty (60) days prior to the construction of the onsite groundwater production wells, the project owner shall submit to the CPM a copy of the water well construction packet submitted to the Inyo County Environmental Health Services for review and comment.
- B. No later than thirty (30) days prior to the construction of the onsite groundwater production wells, the Project owner shall submit a copy of written concurrence received review and comment from the Inyo County Environmental Health



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Department that the proposed well construction activities comply with all county well requirements and meet the requirements established by the county's water well permit program. The CPM may approve without Inyo County's review and comment if such review and comment is unreasonably delayed.

- C. No later than sixty (60) days after installation of each well at the Project site, the Project owner shall ensure that the well driller submits a Well Completion Report to the DWR with a copy provided to the CPM. The Project owner shall submit to the CPM, together with the Well Completion Report, a copy of well drilling logs, water quality analyses, and any inspection reports.
- D. During well construction and for the operational life of the well, the Project owner shall submit two (2) copies each to the CPM of any proposed well construction or operation permit changes and shall submit copies within ten (10) days of submittal to or receipt from the Inyo County Environmental Health Services for review and comment.
- E. No later than fifteen (15) days after completion of the onsite groundwater production wells, the Project owner shall submit documentation to the CPM, and the Lahontan RWQCB that well drilling activities were conducted in compliance with Title 23, California Code of Regulations, Chapter 15, Discharges of Hazardous Wastes to Land, (23 CCR, sections 2510 et seq.) requirements and that any onsite drilling sumps used for Project drilling activities were removed in compliance with 23 CCR section 2511(c).

80. Page 4.15-36, WATER SUPPLY-4: Please make the following changes:

WATER SUPPLY-4: Prior to the use of onsite groundwater for construction and operation of the HHSEGS, the project owner shall install and maintain metering devices as part of the water supply and distribution system to monitor and record the volume of water used by the project. The metering devices shall be operational for the life of the project.

**Verification:** A semi-annual summary of the HHSEGS construction ~~daily~~ monthly maximum, monthly average, monthly total, and annual total water use, shall be submitted to the CPM in the annual compliance report. An annual summary of the HHSEGS operation ~~daily~~ monthly maximum, monthly average, monthly total, and annual total water use, shall also be submitted to the CPM in the annual compliance report.

The ~~daily and~~ monthly water use shall be reported in gallons per day, and the semi-annual and annual water use shall be reported in acre-feet per year. For calculating the total water use, the term "year" would correspond to the date established for the annual compliance report submittal.

- 1. At least ~~sixty~~ ten (160) business days prior to use of any groundwater source for HHSEGS construction and operation, the HHSEGS owner shall submit to the CPM evidence that metering devices have been installed and are operational for HHSEGS construction and operation. The HHSEGS owner shall provide a report on the servicing, testing, and calibration of the metering devices in the annual compliance report.

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2. Beginning six (6) months after the start of construction, the HHSEGS owner shall prepare a semi-annual summary of the ~~daily~~monthly maximum, monthly average, monthly total, and annual total amount of water used for construction purposes.
  3. Annually, the HHSEGS owner shall prepare a summary of the ~~daily~~monthly maximum, monthly average, monthly total, and annual total water use.
81. Page 4.15-36, WATER SUPPLY-5: this condition should be deleted. WC 4999 et al. apply to groundwater extraction in Los Angeles, Riverside, San Bernardino, and Ventura counties only. It does not apply to Inyo County.
82. Page 4.15-36, WATER SUPPLY-6. Please reword this Condition as follows:

**WATER LEVEL MONITORING FOR NEIGHBORING WELLS, MITIGATION AND REPORTING**

**WATER SUPPLY-6:** The project owner shall submit a Groundwater Level Monitoring, Mitigation, and Reporting Plan (GLMMRP) to the CPM for review and approval in advance of construction activities and prior to the operation of onsite groundwater supply wells. The GLMMRP ~~Groundwater Level Monitoring, Mitigation, and Reporting Plan~~ shall provide detailed methodology for monitoring background, ~~on-and-site~~, and off-site groundwater levels. The monitoring period shall include pre-construction, construction, and Project operation periods. The plan shall establish pre-construction and Project related groundwater level trends that can be quantitatively compared against predicted trends near the Project pumping wells and near potentially impacted resources.

**Verification:** The GLMMRP shall make use of the monitoring well systems put in place pursuant to WATER SUPPLY-8.

The approved GLMMRP shall also identify the potential Project related groundwater decline trigger levels in monitor wells for implementation of mitigation measures. These levels shall be based on computer modeling, or distance drawdown plots, and analysis of existing and future pumping in the region. The trigger levels will be established to limit Project Related Drawdown to levels that correspond to drawdown levels at the springs and mesquite thickets and that do not create a substantial decrease in groundwater water levels in excess of the impacts associated with non-Project related causes.

**A. Prior to Project Construction**

1. A well reconnaissance review shall be conducted to investigate and document the condition of existing water supply wells located within 3 miles of the project site, provided that access is granted by the well owners. ~~The reconnaissance shall include sending notices by registered mail to all property owners within a 3 mile radius of the project area.~~
2. Monitor to establish preconstruction conditions. The monitoring plan and network of monitoring wells shall make use of existing and new monitoring wells installed after commencement of construction by the Project Owner pursuant to WATER SUPPLY-8. ~~All m~~Monitoring wells shall be installed to a depth that matches the depth of the project pumping wells or to a maximum depth of 600 feet (the

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locations and depth of each well shall be decided based on the acceptance of the GLMMRP), centrally located at each power block. A plan for design and construction of the monitoring wells and an evaluation of how they will be effective in evaluating project pumping impacts on domestic well owners shall be submitted to the CPM for review and approval prior to installation and monitoring pursuant to WATER SUPPLY-8. Construction activities unrelated to the monitoring wells shall be allowed to proceed while the plan is under CPM review. The monitoring network will include the following wells at a minimum:

One well at the northern end of the site.

The monitoring network protects areas that maybe within the influence of Project pumping during the Project life. The projected area of groundwater drawdown shall be refined on an annual basis during project construction and every year during project operations using the data acquired because of this condition.

3. As access allows, measure groundwater levels from the off-site and on-site wells within the network and background wells to provide initial groundwater levels for pre project trend analysis. Assess the significance of an apparent trend and delineate project induced drawdown using the method described in USGS Scientific Investigations Report 2006-5024: Documentation of a Spreadsheet for Time-Series Analysis and Drawdown Estimation (Halford, K.J., 2006) estimate the magnitude of that trend using the Kendall test for trend (Kendall and Kendall, 1980) and the Sen's slope estimator (Sen, 1968). Alternative analysis methods for trends may be used, subject to approval of the CPM.
4. Construct updated water level maps within the Pahrump Valley basin, within 5 miles of the site from the groundwater data collected prior to construction. Update trend plots and statistical analyses, as data are is available.

**B. During Construction:**

1. Collect water levels from wells within the monitoring network on a monthly basis (based on site and well access) throughout the construction period and at the end of the construction period. Perform statistical trend analysis for water levels. Assess apparent trend and delineate project induced drawdown using the distance drawdown method and the method described in USGS Scientific Investigations Report 2006-5024, or by using alternative trend analysis, as approved by the CPM. Observed changes in water level in the monitoring wells will be analyzed using the USGS trend analysis methods to remove extraneous factors such as regional declines, seasonal and annual cycles, pumping from other locations, and barometric effects. The remaining drawdown will be presumed to represent Project Related Drawdown. The Project Related Drawdown will be plotted on a distance-drawdown plot to see if it forms a consistent and technically defensible trend for drawdown associated with pumping on the project site. To be considered to be Project Related Drawdown, the magnitude of the drawdown must decrease with distance away from the pumping wells and, on a semi-log plot of distance vs. drawdown fit reasonably close to a linear trend on the plot, and the slope of the plot must be

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~~consistent with the transmissivity of the aquifer. Assess the significance of an apparent trend and estimate the magnitude of that trend using the Kendall test for trend (Kendall and Kendall, 1980) and the Sen's slope estimator (Sen, 1968).~~

**C. During Operation:**

1. On a monthly basis for the first year of operation and quarterly thereafter for the life of the project, collect water level measurements from wells identified in the groundwater monitoring program pursuant to WATER SUPPLY-8 (based on site and well access) to evaluate operational influence from the Project. Operational parameters (i.e., pumping rate) of the water supply wells shall be monitored. Additionally, ~~annual~~ quarterly groundwater-use in the southern Pahrump Valley shall be estimated based on available data.
2. On an annual basis, perform statistical trend analysis of water level data and compare to predicted water level declines due to project pumping. Analysis of the ~~significance of an apparent trend shall be determined and the magnitude of that trend estimated. Assess the apparent trend and delineate project induced~~ drawdown using the distance drawdown methods and the method described in USGS Scientific Investigations Report 2006-5024, or alternative trend analysis, as approved by the CPM. Observed changes in water level in the monitoring wells will be processed using the USGS trend analysis methods to remove extraneous factors such as regional declines, seasonal and annual cycles, pumping from other locations, and barometric effects. The remaining drawdown will be presumed to represent Project Related Drawdown. The Project Related Drawdown will be plotted on a distance drawdown plot to see if it forms a consistent and technically defensible trend for drawdown from pumping on the project site. To be considered to be Project Related Drawdown, the magnitude of the drawdown must decrease with distance away from the pumping wells and on a semi-log plot of distance vs. drawdown, fit reasonably close to a linear trend on the plot, and the slope of the plot must be consistent with the transmissivity of the aquifer. ~~Assess the significance of an apparent trend and estimate the magnitude of that trend using the Kendall test for trend (Kendall and Kendall, 1980) and the Sen's slope estimator (Sen, 1968).~~
3. If water levels in wells (as determined by static (non-pumping) water level measurements) have been lowered more than 10 feet below preconstruction levels at the southern site boundary, and monitoring data provided by the project owner show these water level changes are different from background trends and are caused by Project pumping, then the project owner shall provide mitigation to the impacted well owner(s). Mitigation shall be provided to the impacted well owners that experience 10 feet or more of Project-related ~~induced~~ drawdown (under non-pumping conditions) if the CPM's inspection of the well monitoring data confirms changes to water levels and water level trends relative to measured pre-project water levels, and the well (private owners well in question) yield or performance has been significantly substantially affected by Project pumping. The type and extent of mitigation shall be determined by the amount of water level decline induced by the

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Project, the type of impact, and site specific well construction and water use characteristics. If an impact is determined to be caused by drawdown from more than one source, the level of mitigation provided shall be proportional to the amount of drawdown induced by the Project relative to other sources. In order to be eligible, a well owner must provide documentation of the well location and construction, including pump intake depth, and that the well was constructed and usable before Project pumping was initiated. The mitigation of impacts shall be determined as follows:

- a. If Project pumping has lowered water levels by 10 feet or more (under non pumping conditions) and increased pumping lifts, increased energy costs shall be calculated. Payment or reimbursement for the increased costs shall be provided at the option of the affected well owner on an annual basis. In the absence of specific electrical use data supplied by the well owner, the project owner shall use **WATER SUPPLY-7** to calculate increased energy costs.
- b. If groundwater monitoring data indicate Project pumping has lowered water levels below the top of the well screen or slots (if known), and the well yield is shown to have decreased by 10% or more of the pre-Project average seasonal yield, compensation shall be provided for the diagnosis and maintenance to treat and remove encrustation from the well screen or slots. Reimbursement shall be provided at an amount equal to the customary local cost of performing the necessary diagnosis and maintenance for well screen encrustation. Should the well yield reductions be recurring, the Project Owner shall provide payment or reimbursement for periodic maintenance throughout the life of the Project. If with treatment the well yield is incapable of meeting 110% of the well owner's maximum daily demand, dry season demand, or annual demand the well owner should be compensated by reimbursement or well modification ~~replacement~~ as described under Condition 3.c.
- c. If Project pumping has lowered water levels to ~~significantly~~ substantially impact well yield so that it can no longer meet its intended purpose, causes the well to go dry, or causes casing collapse, an assessment of remedial options will be conducted by project owner, followed by payment or reimbursement of an amount equal to the cost of lowering the pump (as in item (e) below), deepening the well, or replacing the well (as cooperatively determined as the appropriate resolution) shall be provided to accommodate these effects. Payment or reimbursement shall be at an amount equal to the customary local cost of deepening the existing well or constructing a new well of comparable design and yield (only deeper). The demand for water, which determines the required well yield, shall be determined on a per well basis using well owner interviews and field verification of property conditions and water requirements compiled as part of the pre-project well reconnaissance. Well yield shall be considered ~~significantly~~ substantially impacted if it is incapable of meeting 110% of the well owner's maximum daily demand, dry-season demand, or annual demand – assuming the pre-project well yield documented by the initial well reconnaissance met or exceeded these yield levels.

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- d. The project owner shall notify any owners of the impacted wells within one month of the CPM approval of the compensation analysis for increased energy costs.
  - e. Pump lowering – In the event that groundwater is lowered as a result of Project pumping to an extent where pumps are exposed but well screens remain submerged the pumps shall be lowered to maintain production in the well. The Project shall reimburse the impacted well owner for the costs associated with lowering pumps.
  - f. Deepening of wells – If the groundwater is lowered enough as a result of Project pumping that well screens and/or pump intakes are exposed, and pump lowering is not an option, such affected wells shall be deepened or new wells constructed. The project owner shall reimburse the impacted well owner for all reasonable costs associated with deepening existing wells or constructing new wells shall be borne by the project owner.
4. After the first five-year operational and monitoring period the CPM shall evaluate the data and determine if the monitoring program for water level measurements should be revised or eliminated. Revision or elimination of any monitoring program elements shall be based on the consistency of the data collected. The determination of whether the monitoring program should be revised or eliminated shall be made by the CPM.
- ~~5. If mitigation includes monetary compensation, the project owner shall provide documentation to the CPM that compensation payments have been made by March 31 of each year of Project operation or, if lump-sum payments are made, payment is made by March 31 following the first year of operation only. Within 30 days after compensation is paid, the project owner shall submit to the CPM a compliance report describing compensation for increased energy costs necessary to comply with the provisions of this condition.~~
5. ~~6.~~ At the end of the first five years of monitoring, and thereafter, annually for any every subsequent five-year monitoring period, the collected data shall be evaluated by the CPM and they shall determine if the sampling frequency should be revised or eliminated.
6. ~~7.~~ During the life of the Project, the project owner shall provide to the CPM all monitoring reports, complaints, studies and other relevant data within 10 days of being received by the project owner.

The monitoring wells to be installed to satisfy this condition shall be installed pursuant to the requirements set forth in WATER SUPPLY-8.

**Verification:** — The project owner shall do all of the following:

At least 60 days prior to operation of the site groundwater supply wells, the project owner shall submit to the CPM, a comprehensive report presenting all the data and information required in item A. 1. above. The project owner shall submit to the CPM a report showing the results of the well reconnaissance, conditions of existing wells that



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will be used to evaluate potential project pumping impacts, and all calculations, assumptions, well logs, and reports made in development of the report data and interpretations.

At least 180 days prior to project construction the project owner shall submit a plan showing the proposed design and construction of the new monitoring well network and existing wells that will be used to evaluate potential impacts to groundwater dependent ecosystems and domestic well owners. The plan will include well design and installation methods. The plan will include all necessary information for compliance with the Inyo County well construction ordinance and will be submitted to Inyo County for review and comment. The owner will provide the plan with Inyo County comments to the CPM for review and approval prior to well installation.

During Project construction, the project owner shall submit to the CPM quarterly reports presenting all the data and information required in item B above. Data obtained from public records will be provided quarterly or when available. The quarterly reports shall be provided ~~60~~30 days following the end of the quarter. The project owner shall also submit to the CPM all calculations and assumptions made in development of the report data and interpretations.

No later than ~~March 31 of each year of construction or~~ 60 days prior to Project operation, the project owner shall provide to the CPM for review and approval, documentation showing that any ~~mitigation~~ required compensation payment to any qualified private well owner during Project construction was offered to such private well owners ~~satisfied, based on the requirements of the property owner as determined by the CPM.~~

During Project operation, the project owner shall submit to the CPM, in the Annual Compliance Report, ~~applicable quarterly, semi-annual and annual reports presenting all the data and information required in item C above. Quarterly reports shall be submitted to the CPM 30 days following the end of the quarter. The fourth quarter report shall serve as the annual report and shall be provided on January 31 in the following year. The project owner shall submit to the CPM all calculations and assumptions made in development of report data and interpretations, calculations, and assumptions used in development of any reports.~~

~~After the first five year operational and monitoring period, the project owner shall submit a 5 year monitoring report to the CPM that includes all monitoring data collected and a summary of the findings. The CPM will determine if the water level measurements and sampling frequencies should be revised or eliminated.~~

83. Page 4.15-40, WATER SUPPLY-7. Please reword this condition as follows:

**"WATER SUPPLY-7: Where it is determined that the project owner shall reimburse a private well owner for increased energy costs identified as a result of analysis performed in Condition of Certification WATER SUPPLY-6, the project owner shall provide CPM with evidence that the project owner has offered to compensate private well owners for the increased energy cost associated with pumping groundwater as a direct result of a drop in water levels associated with the project groundwater use.**



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**Verification:**

~~Where it is determined that the project owner shall reimburse a private well owner for increased energy costs identified as a result of analysis performed in Condition of Certification WATER SUPPLY 6, t~~The project owner shall calculate the compensation owed to any owner of an impacted well as described below.

Increased cost for energy =  $\frac{\text{change in lift/total system head} \times \text{total energy consumption} \times \text{costs/unit of energy}}$

**Where:**

change in lift (ft) = calculated change in water level in the well resulting from project

total system head (ft) = elevation head + discharge pressure head

elevation head (ft) = difference in elevation between wellhead discharge pressure gauge and water level in well during pumping.

discharge pressure head (ft) =  $\frac{\text{pressure at wellhead discharge gauge (psi)} \times 2.31}{\text{pressure at wellhead discharge gauge (psi)}}$

The project owner shall submit to the CPM for review and approval the documentation showing which well owners must be compensated for increased energy costs and that the proposed amount is sufficient compensation to comply with the provisions of this condition.

Any reimbursements (either lump sum or annual) to impacted well owners shall be only to those well owners whose wells were in service within six months of the Commission decision and within a 5-mile radius of the project site.

The project owner shall notify all owners of the impacted wells within one month of the CPM approval of the compensation analysis for increase energy costs.

Compensation shall be provided on either a one-time lump-sum basis, or on an annual basis, as described below, at the project owner's discretion.

**Annual Compensation:** Compensation provided on an annual basis shall be calculated prospectively for each year by estimating energy costs that will be incurred to provide the additional lift required as a result of the project. With the permission of the impacted well owner, the project owner shall provide energy meters for each well or well field affected by the project. The impacted well owner to receive compensation must provide documentation of energy consumption in the form of meter readings or other verification of fuel consumption. For each year after the first year of operation, the project owner shall include an adjustment for any deviations between projected and actual energy costs for the previous calendar year.

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**One-Time Lump-Sum Compensation:** Compensation provided on a one-time lump-sum basis shall be based on a well-interference analysis, assuming the maximum project-pumping rate of 140 acre-feet per year. Compensation associated with increased pumping lift for the life of the project shall be estimated as a lump sum payment as follows:

- The current cost of energy to the affected party considering time of use or tiers of energy cost applicable to the party's billing of electricity from the utility providing electric service, or a reasonable equivalent if the party independently generates their electricity;
- An annual inflation factor for energy cost of 3 percent; and
- A net present value determination assuming a term of 30 years and a discount rate of 9 percent;

**Verification:**—The project owner shall do all of the following:

1. No later than 30 days after CPM approval of the well drawdown analysis, the project owner shall submit to the CPM for review and approval all documentation and calculations describing necessary compensation for energy costs associated with additional lift requirements. 2. The project owner shall submit to the CPM all calculations, along with any letters signed by the well owners indicating agreement with the calculations, and the name and phone numbers of those well owners that do not agree with the calculations. Compensation payments shall be made by March 31 of each year of project operation or, if lump-sum payment is selected, payment shall be made by March 31 of the first year of operation only. Within 30 days after compensation is paid, the project owner shall submit to the CPM a compliance report describing compensation for increased energy costs necessary to comply with the provisions of this condition.

84. Page 4.15-42, WATER SUPPLY-8

**WATER LEVEL MONITORING FOR GROUNDWATER-DEPENDENT VEGETATION,  
MITIGATION AND REPORTING**

**WATER SUPPLY-8:** The project owner shall submit a Groundwater Level Monitoring, Mitigation, and Reporting Plan (GLMMRP) ~~to the CPM for review and approval in advance of construction activities and prior to the operation of onsite groundwater supply wells. The Groundwater Level Monitoring, Mitigation, and Reporting Plan~~ GLMMRP shall provide detailed methodology for monitoring background and site and off-site groundwater levels. The monitoring period shall include pre-construction, construction, and Project operation periods. The plan shall establish pre-construction and Project related groundwater level trends that can be quantitatively compared against predicted trends near the Project pumping wells and near potentially impacted resources. The wells established pursuant to this condition shall also be used for the purposes of WATER SUPPLY-6.

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**Verification:**

~~This condition proposes a threshold for significant impacts to groundwater-dependent vegetation caused by water level decline due to Project groundwater pumping. This condition also proposes mitigation that would, if initiated, reduce the impact to a level that is less than significant.~~

**A. Prior to Project Construction**

1. Monitor to establish preconstruction conditions. The monitoring plan and network of monitoring wells shall make use of existing and new monitoring wells installed ~~after commencement of construction~~ by the Project Owner. ~~All monitoring wells shall be installed to a depth that matches the depth of the project pumping wells, to the extent feasible (the locations of each monitor well shall be decided based on the acceptance of the GLMMRP), centrally located at each power block.~~ A plan for design and construction of the monitoring wells and how they will be effective in evaluating project pumping impacts on groundwater dependent ecosystems and domestic well owners shall be submitted to the CPM for review and approval prior to installation and monitoring. Construction activities unrelated to monitoring wells shall be allowed to proceed while the plan is under CPM review. The monitoring network will include the following wells at a minimum:

**Monitoring Well Locations**

The Project Owners will install up to 11 wells, subject to the ability to gain access and the right to use certain off-site well locations:

- Three wells directly up-gradient (gradient hereafter refers to inferred groundwater potentiometric surface included as part of staff analysis) from the Power Block 1 production well, in a linear array, within the property boundary. Wells shall be installed within one mile of the Power Block 1 production well (the "Power Block 1 Monitoring Well Array").
- One well directly up-gradient from the Power Block 1 production well (well site not yet identified), between 1.0 and 1.5 miles from the project property boundary at the western edge of the mesquite ~~bosque~~ thicket on BLM land ~~(herein known as the "BLM Mesquite Bosque Thicket Monitoring Well 1")~~.
- Three wells directly up-gradient from Power Block 2, in a linear array, within the property boundary. Wells shall be installed within one mile of the Power Block 2 production well (well site not yet identified) (the "Power Block 2 Monitoring Well Array").
- One well directly up-gradient from Power Block 2, between 1.0 and 1.5 miles from the project property boundary (the "BLM Mesquite Bosque Thicket Monitoring Well 2").
- One well at the southern end of the site within the project boundaries (the "Southern Monitoring Well").

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- One well at the northern end of the site within the project boundaries (the “Northern Monitoring Well”).

One well offsite in California between 2.0 and 3.0 miles from the southwest corner of the site, located between a bearing of southwest (225°) and west (270°) (the “Offsite California Monitoring Well”).

**On-Site and Off-Site Monitoring Well Locations**

The eight monitoring wells located within the project Site shall be known as the “On-Site Monitoring Wells.” The three monitoring wells located outside the project site (BLM Mesquite Thicket Monitoring Well 1, the BLM Mesquite Thicket Monitoring Well 2 and the Offsite California Monitoring Well) shall be known as the “Off-Site Monitoring Wells.”

The On-Site Monitoring Wells shall be installed and operational before the project begins commercial operations. Commercial operations shall be defined as when the project first synchronizes to the transmission grid for purposes other than testing of the facility.

The ability to gain access to and the right to use the Off-Site Monitoring Wells is subject to the Project Owner’s ability to obtain the right to use these sites for groundwater monitoring purposes. If the right to use one or more of the Off-Site Monitoring Wells is denied or delayed, the Project Owner shall continue to use commercially reasonable efforts to obtain the right to use these sites. If the right to use one or more of the sites cannot be obtained despite commercially reasonable efforts, the Project Owner shall propose for CPM review and approval alternative location(s) for Off-Site Monitoring Wells. During the time when the Project Owner is pursuing the right to use sites for the Off-Site Monitoring Wells, the Project Owner shall nevertheless be allowed to proceed with the GLMMRP and construction and operation of the Project.

~~The monitoring network protects areas that maybe within the influence of project pumping during the project life. The projected area of groundwater drawdown shall be refined on an annual basis during project construction and every year during project operations using the data acquired because of this condition.~~

2. As authorized access allows, measure groundwater levels from the off-site and on-site wells within the network and background wells to provide initial groundwater levels for pre-project trend analysis. Assess the apparent trend and delineate project induced drawdown using the method described in USGS Scientific Investigations Report 2006-5024 or by using alternative trend analysis, as approved by the CPM. ~~Assess the significance of an apparent trend and estimate the magnitude of that trend using the Kendall test for trend (Kendall and Kendall, 1980) and the Sen’s slope estimator (Sen, 1968).~~
3. Construct updated water level maps within the Pahrump Valley basin, within 5 miles of the site from the groundwater data collected prior to construction. Update trend plots and statistical analyses, as data are ~~is~~ available.

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**B. During Construction:**

1. Collect water levels from wells within the monitoring network on a monthly basis throughout the construction period and at the end of the construction period. Perform statistical trend analysis for water levels. Assess the apparent trends and delineate Project Related Drawdown using the distance drawdown method and the method described in USGS Scientific Investigations Report 2006-5024, or by using alternative trend analysis, as approved by the CPM. Observed changes in water level in the monitoring wells will be processed using the USGS trend analysis methods to remove extraneous factors such as regional declines, seasonal and annual cycles, pumping from other locations, and barometric effects. The remaining drawdown will be presumed to represent Project Related Drawdown. The Project Related Drawdown will be plotted on a distance drawdown plot to see if it forms a consistent and technically defensible trend for drawdown from pumping on the project site. To be considered to be Project Related Drawdown, the magnitude of the drawdown must decrease with distance away from the pumping wells and on a semi-log plot of distance vs. drawdown, fit reasonably close to a linear trend on the plot, and the slope of the plot must be consistent with the transmissivity of the aquifer. Assess the significance of an apparent trend and estimate the magnitude of that trend using the Kendall test for trend (Kendall and Kendall, 1980) and the Sen's slope estimator (Sen, 1968).

**C. During Operation:**

1. On a monthly basis for the first year of operation and quarterly or annual thereafter as approved by the CPM ~~for the life of the project~~, collect water level measurements from wells identified in the groundwater monitoring program to evaluate operational influence from the Project. Operational parameters (i.e., pumping rate) of the water supply wells shall be monitored. Additionally, ~~annual~~ quarterly groundwater-use in the southern Pahrump Valley shall be estimated based on available data, if available.
2. On an annual basis, or on a longer duration if approved by the CPM, perform statistical trend analysis of water level data and compare to predicted water level declines due to project pumping. Analysis of the ~~significance of an apparent trend~~ shall be determined and the magnitude of that trend estimated. Assess the apparent trend and delineate project induced drawdown using the distance drawdown method and the method described in USGS Scientific Investigations Report 2006-5024, or by using alternative trend analysis, as approved by the CPM. Observed changes in water level in the monitoring wells will be processed using the USGS trend analysis methods to remove extraneous factors such as regional declines, seasonal and annual cycles, pumping from other locations, and barometric effects. The remaining drawdown will be presumed to represent Project Related Drawdown. The Project Related Drawdown will be plotted on a distance drawdown plot to see if it forms a consistent and technically defensible trend for drawdown from pumping on the project site. To be considered Project Related Drawdown, the magnitude of the drawdown must decrease with distance away from the pumping

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wells and on a semi-log plot of distance vs. drawdown, fit reasonably close to a linear trend on the plot, and the slope of the plot must be consistent with the transmissivity of the aquifer. Assess the significance of an apparent trend and estimate the magnitude of that trend using the Kendall test for trend (Kendall and Kendall, 1980) and the Sen's slope estimator (Sen, 1968)

3. The annual monitoring report shall present a comprehensive technical analysis that quantifies the amount of Project Related Drawdown in the aquifer that occurs in the immediate vicinity of Stump Springs. The analysis shall be based on groundwater monitoring records and the data shall be compared to the computer modeling used in preparation of the GLMMRP. If that analysis indicates that a decline in the groundwater water level near Stump Springs has reached the trigger level identified in the GLMMRP. The Project owner shall reduce or modify pumping, or undertake alternative mitigation measures (as approved by the CPM) that will restore groundwater conditions to acceptable levels; provided, however, that the Project shall not be required to curtail renewable power generation or shutdown at any time. Potential adaptive management measures, such as moving onsite production wells, injection/recharge wells, etc. will be identified in the GLMMRP. ~~If either of the linear arrays of monitoring wells (three onsite wells) show there is a 0.5 ft decline beyond the documented pre-project decline at the eastern project boundary due to project pumping, and the significance threshold for decline in plant vigor is reached as identified in BIO-23 the Project owner shall substantially reduce, modify, or stop project pumping.~~
4. If either of the linear arrays of monitoring wells (three onsite wells) and the BLM Mesquite ~~Bosque~~ Thicket Wwell (1 or 2) show there is a 0.5 ft decline that reaches trigger levels that were identified in the GLMMRP ~~beyond the pre-project decline due to Pproject-Related Drawdownpumping and the significance threshold for decline in plant vigor is reached as identified in BIO-23~~, the Project owner shall substantially reduce or, modify, or stop project pumping or undertake alternative mitigation measures (as approved by the CPM) that will restore groundwater conditions to acceptable levels.
5. After the first five-year operational and monitoring period the CPM shall evaluate the data and determine if the monitoring program for water level measurements should be revised or eliminated. Revision or elimination of any monitoring program elements shall be based on the consistency of the data collected. The determination of whether the monitoring program should be revised or eliminated shall be made by the CPM.
6. ~~If mitigation includes monetary compensation, the project owner shall provide documentation to the CPM that compensation payments have been made by March 31 of each year of Project operation or, if lump-sum payments are made, payment is made by March 31 following the first year of operation only. Within 30 days after compensation is paid, the project owner shall submit to the CPM a compliance report describing compensation for increased energy costs necessary to comply with the provisions of this condition.~~

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7. At the end of every subsequent five-year monitoring period, the collected data shall be evaluated by the CPM and they shall determine if the sampling frequency should be revised or eliminated.
8. During the life of the Project, the project owner shall provide to the CPM all monitoring reports, complaints, studies and other relevant data within 10 days of being received by the project owner.

**Verification:** ~~The project owner shall do all of the following:~~

At least 60 days prior to operation of the site groundwater supply wells, the project owner shall submit to the CPM, a comprehensive report presenting all the data and information required in item A. 1. Above, based on available information. The project owner shall submit to the CPM a report showing the results of the well reconnaissance, conditions of existing wells that will be used to evaluate potential project pumping impacts, and all calculations, assumptions, well logs, and reports made in development of the report data and interpretations.

At least ~~180~~ 30 days prior to project construction the project owner shall submit a plan showing the proposed design and construction of the new monitoring well network and existing wells that will be used to evaluate potential impacts to groundwater dependent ecosystems ~~and domestic well owners~~. Construction unrelated to the monitoring wells plan shall be allowed to proceed during this review. The plan will include well design and installation methods. The plan will include all necessary information for compliance with the Inyo County well construction ordinance and will be submitted to Inyo County for review and comment. The owner will provide the plan ~~with Inyo County comments~~ to the CPM for review and approval prior to well installation. The CPM may approve without Inyo County's review and comment if such review and comment is unreasonably delayed.

During Project construction, the project owner shall submit to the CPM quarterly reports presenting all the data and information required in item B above. Data obtained from public records will be provided quarterly or when available. The quarterly reports shall be provided 60 ~~30~~ days following the end of the quarter. ~~The project owner shall also submit to the CPM all calculations and assumptions made in development of the report data and interpretations.~~

~~No later than March 31 of each year of construction or 60 days prior to Project operation, the project owner shall provide to the CPM for review and approval, documentation showing that any mitigation to private well owners during Project construction was satisfied, based on the requirements of the property owner as determined by the CPM.~~

During Project operation, the project owner shall submit to the CPM, ~~applicable quarterly, semi-annual and annual reports presenting all the data and information required in item C above~~ in the Annual Compliance Report. ~~Quarterly reports shall be submitted to the CPM 30 days following the end of the quarter. The fourth quarter report shall serve as the annual report and shall be provided on January 31 in the following year. The project owner shall submit to the CPM all calculations and~~



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~~assumptions made in development of report data and interpretations, calculations, and assumptions used in development of any reports.~~

~~After the first five year operational and monitoring period, the project owner shall submit a 5 year monitoring report to the CPM that includes all monitoring data collected and a summary of the findings. The CPM will determine if the water level measurements and sampling frequencies should be revised or eliminated.~~

85. Page 4.15-47. WATER SUPPLY-9. The Applicant's data, as described in these PSA Comments and in its filings in this proceeding, demonstrates that the project will have no significant adverse effects on water supplies. If anything, the Applicant's water usage will be less than the 170 residential units contemplated in the No Project Alternative. Accordingly, given (a) the project's lack of water supply-related impacts and (b) the lack of any water discharges associated with project operations, there will be no significant effects on water quality. The Applicant's proposed conditions Water Supply-6 and Water Supply-8 constitute a rigorous monitoring program that will demonstrate the lack of significant impacts in either water supply or water quality. Because no significant impacts on water quality have been identified, the FSA should not seek to impose mitigation. Water Supply-9 should be deleted.

86. Page 4.15-47, **WATER SUPPLY-10**. Please reword this condition as follows:

**WATER SUPPLY-10:** The Project is subject to the requirements of California Code of Regulations, Title 22, Article 3, Sections 64400.80 through 64445 (22 CCR § 64400.80 – 64445) for a non-transient, non-community water system (serving 25 people or more for more than six months). The Project owner shall submit water system plans to Inyo County Environmental Health Services for review and ~~approval comment and to the CPM for review and approval~~. In addition, the system will require periodic monitoring for various bacteriological, inorganic and organic constituents. The CPM may approve without Inyo County's review and comment if such review and comment is unreasonably delayed.

**Verification:** The project owner shall obtain submit the information that would normally accompany a permit to operate application for a non-transient, non-community water system with the Inyo County Environmental Health Services for review and comment at least sixty (60) days prior to commencement of construction at the site. In addition, the project owner shall submit to the CPM a monitoring and reporting plan for production wells operated as part of the domestic water supply system prior to plant operations. The plan will include reporting requirements including monthly, quarterly, and annual submissions.

The project owner shall designate a California Certified Water Treatment Plant Operator as well as the technical, managerial, and financial requirements as prescribed by State law. The project owner will supply the CPM updates on an annual basis regarding monitoring requirements, any submittals to the Inyo County Environmental Health Services, and proof of payment of fees associated annual renewal of the operating permit but for the Commission's exclusive jurisdiction. The CPM may approve without

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Inyo County's review and comment if such review and comment is unreasonably delayed."

## **WORKER SAFETY/FIRE PROTECTION**

### **General Comments**

1. Page 4.16-4, Setting and Existing Conditions, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: Revisions to this sentence are required to describe the correct entity.

The PSA states: "The mechanism of how these services would be sourced and paid for from another jurisdiction in the state of Nevada rather than from the local Authority Having Jurisdiction (AHJ), in this case SIFPD, has not been established." Yet the PSA also states: "SIFPD has mutual aid agreements with Pahrump Valley Fire-Rescue Service (PVFRS) and Round Mountain/Smoky Valley Fire Services and additional county resources as part of Nye County Emergency Services (NCES)." Therefore, the mechanism by which emergency services to the HHSEGS would be sourced from PVFRS will be established by the Mutual Aid agreements.

The PSA states: "Due to the minimal resources of the local SIFPD, staff agrees with the SIFPD that the likely emergency response requirements of HHSEGS would likely create a significant public impact." However, the PSA does not explain the basis for this conclusion. The PSA fails to explain the standard or threshold used to determine whether an impact on public services is significant. The PSA states that the incident rate for three existing solar plants was 2.5 emergency calls per year or 0.83 emergencies per solar plant per year. While this number may not be "statistically significant," it is extremely low. Regarding EMS, the PSA finds "incidents at gas-fired power plants that require EMS response are infrequent." Given the foregoing, it is not clear what aspect of HHSEGS would "significantly" impact SIFPD.

The PSA states, "[t]he fire, hazmat, and EMS needs at the proposed plant are real and would pose significant added demands on local fire protection and emergency medical services." As noted previously, while the impacts may be real, it is not clear why they are deemed substantial or significant. The impacts of the project on public services, if any, is not an "environmental impact" subject to CEQA. In the recent case of *City of Hayward v. Board of Trustees of the California State University*, A131412, A13424 (First District Court of Appeal, May 30, 2012), the City of Hayward and two community groups claimed that the University had violated CEQA because it did not agree to fund "mitigation" for the effect of campus expansion on fire and emergency medical services. The EIR concluded that the University's plans would increase campus population and that the City would need 11 additional fire fighters, a new fire station, and additional equipment to maintain response times and service levels. The trial court found the EIR deficient because it did not treat the plan's effect on adequacy of fire protection services as an environmental impact, and instead focused only on the possible impacts of building a new fire station. The City argued, as the PSA argues here, that the impacts on these services are "real" and therefore must be significant.

The court of appeal set the trial court's ruling aside. It rejected the City's claim that the risk of injury from "dangerously long" response times is an environmental impact subject to

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CEQA. Providing fire and emergency medical services is the City's legal responsibility. While campus expansion will increase the demand for those services, this is an economic effect, the court said, not an environmental effect that must be mitigated. The court held: "there is no authority supporting the city's view that CEQA shifts financial responsibility for providing fire and emergency response services to the sponsor of a development project." The court quoted from the CEQA guidelines: "Section 15382 of the CEQA guidelines defines 'significant effect on the environment' as 'a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant'" ( 2012 Cal. App. LEXIS 761, \*18-19).

Therefore, the impacts of the HHSEGS project on emergency and medical services is an economic effect, not an environmental effect that must be mitigated.

While the project has no legal duty to mitigate the impacts, if any, on emergency and medical services, the Applicant is actively engaged in discussions with SIFPD to ensure adequate fire and emergency service for the project.

## **Specific Comments**

2. Page 4.16-15, SIFPD Impacts, after 1<sup>st</sup> paragraph: The following text should be inserted after the 4<sup>th</sup> paragraph to explain the difference between the technologies:

"It should also be noted that there are substantial differences between the HHSEGS power tower technology and the parabolic trough technologies at the Daggett, Kramer Junction, and Harper Dry Lake facilities. As described in a recent Commission Decision, the trough technology is as follows:

With this technology, arrays of parabolic mirrors collect heat energy from the sun and refocus the radiation on a receiver tube located at the focal point of the parabola. A heat transfer fluid (HTF) is heated to high temperature (750°F) as it circulates through the receiver tubes. The heated HTF is then piped through a series of heat exchangers where it releases its stored heat to generate high pressure steam. The steam is then fed to a traditional steam turbine generator where electricity is produced (Blythe Solar Power Project Docket Number 09-AFC-6 Commission Decision, pp. 1-2).

In addition to the potential fire safety issues associated with a superheated liquid pumped around the project site, the parabolic trough's use of HTF is also a hazardous material, requiring special handling. HTF is also a hazardous materials spill threat. Therminol is an HTF mixture of 73.5 percent diphenyl ether and 26.5 percent biphenyl, and is a solid at temperatures below 54°F. While the risk of offsite migration is minimal, Therminol is highly flammable and fires have occurred at other solar generating stations that use it (Blythe Solar Power Project Docket Number 09-AFC-6 Commission Decision, p. 191). In marked contrast

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to these older technologies, HHSEGS technology does not use HTF. Instead, the HHSEGS uses water to create steam without any intermediate fluids.”

3. Page 4.16-17, SIFPD Impacts, 1<sup>st</sup> paragraph (after the numbered information): 0.83 emergencies per plant per year, even in a desert environment, does not constitute a “significant” drain on SIFPD resources. In addition, as explained in the General Comments, it is an economic impact, not an environmental impact subject to CEQA.
4. Page 4.16-17, SIFPD Impacts, last paragraph, 3<sup>rd</sup> sentence: With regard to response time, the response time stated (30 to 50 minutes) is inconsistent with Page 4.16-15, which says that Tecopa is 26 miles away with a 30 to 40 minutes response time. The applicant recommends that a response time of “approximately 40 minutes” be used.
5. Page 4.16-18, SIFPD Impacts, 2<sup>nd</sup> paragraph, last sentence: Based on this last sentence, the reasonable conclusion is that there is not a significant impact on SIFPD. In addition, as explained in the General Comments, it is an economic impact, not an environmental impact subject to CEQA.
6. Page 4.16-19, Emergency Medical Services Response, 2<sup>nd</sup> paragraph, 3<sup>rd</sup> sentence: Is this only for the construction period? Is the proposal to move equipment out of Tecopa?
7. Page 4.16-20, Cumulative Impacts, 1<sup>st</sup> paragraph, 1<sup>st</sup> sentence: Which facilities are being referenced in the first sentence and are they all within the SIFPD service area?

## **Findings of Fact**

No findings of fact were listed.

## **Conditions of Certification**

8. Page 4.16-21 and 22, Worker Safety – 1: Please revise as follows:

**WORKER SAFETY-1** The project owner shall submit to the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program containing the following:

- Construction Personal Protective Equipment Program;
- Construction Exposure Monitoring Program;
- Construction Injury and Illness Prevention Program;
- Construction Heat Stress Protection Plan that implements and expands on existing Cal OSHA regulations as found in 8 CCR 3395;
- Construction Emergency Action Plan; and
- Construction Fire Prevention Plan that includes the above-ground fuel depot.

**Verification:** The Personal Protective Equipment Program, the Exposure Monitoring Program, the Injury and Illness Prevention Program, and the Heat Stress Protection Plan shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable safety orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the Southern Inyo Fire Protection District for

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review and comment (within 2 weeks after receipt) prior to submittal to the CPM for approval.

**Verification:**—At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction Safety and Health Program.

9. Page 4.16-22, Worker Safety – 2: Please revise as follows:

**WORKER SAFETY-2** The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:

- an Operation Injury and Illness Prevention Plan;
- an Operation Heat Stress Protection Plan that implements and expands on existing Cal OSHA regulations ( Cal. Code of Regs., tit. 8, § 3395);
- a Best Management Practices (BMP) for the storage and application of herbicides;
- an Emergency Action Plan;
- Hazardous Materials Management Program;
- Fire Prevention Plan that includes the fuel depot should the project owner elect to maintain and operate the fuel depot during operations (8 Cal Code Regs. § 3221); and
- Personal Protective Equipment Program (Cal Code Regs., tit. 8, §§ 3401—3411).

**Verification:** The Operation Injury and Illness Prevention Plan, Heat Stress Protection Plan, BMP for Herbicides, and Personal Protective Equipment, and Personal Protective Equipment Program shall be submitted to the CPM for review and comment concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the Southern Inyo Fire Protection District for review and comment within 2 weeks after receipt.

**Verification:**—At least 30 days prior to commercial operation, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program.

10. Page 4.16-23, Worker Safety – 3: The sentence: “The CSS shall submit in the Monthly Compliance Report a monthly safety inspection report to include:” and corresponding bullets need to be moved to the Verification. Please revise as follows:

**WORKER SAFETY-3** The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of power plant construction activities and relevant laws, ordinances, regulations, and standards; is capable of identifying workplace hazards relating to the construction activities; and has authority to take appropriate action to assure compliance and mitigate hazards. The CSS shall:

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- have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;
- assure that all construction and commissioning workers and supervisors receive adequate safety training;
- complete accident and safety-related incident investigations and emergency response reports for injuries and inform the CPM of safety-related incidents; and
- assure that all the plans identified in Conditions of Certification Worker Safety-1 and -2 are implemented.

**Verification:** The CSS shall submit in the Monthly Compliance Report a monthly safety inspection report to include:

- record of all employees trained for that month (all records shall be kept on site for the duration of the project construction);
- summary report of safety management actions and safety-related incidents that occurred during the month;
- report of any continuing or unresolved situations and incidents that may pose danger to life or health; and
- report of accidents and injuries that occurred during the month.

**Verification:**—At least 60 days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the Construction Safety Supervisor (CSS). The contact information of any replacement CSS shall be submitted to the CPM within one business day after replacement.

11. Pages 4.16-23 and 24, Worker Safety – 4: Please revise as follows since the project linears are located in Nevada:

**WORKER SAFETY-4** The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO and will be responsible for verifying that the Construction Safety Supervisor, as required in Condition of Certification Worker Safety-3, implements all appropriate Cal/OSHA and Energy Commission safety requirements. The Safety Monitor shall conduct on-site ~~(including linear facilities)~~ safety inspections at intervals necessary to fulfill those responsibilities.

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**Verification:** At least ~~30~~60 days prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.

12. Page 4.16-24, Worker Safety – 5: No comments.

13. Page 4.16-24, Worker Safety – 6: Please revise as follows:

**WORKER SAFETY-6** The project owner shall provide a second access gate for emergency personnel to enter the site. This secondary access gate shall be at least one-quarter mile from the main gate. ~~Plans for the secondary access gate and the method of gate operation shall be submitted to the Southern Inyo Fire Protection District for review and comment and to the CPM for review and approval.~~

**Verification:** At least sixty (60) days prior to the start of site mobilization, the project owner shall submit to the Southern Inyo Fire Protection District for review and comment within 2 weeks after receipt and the CPM for review and approval preliminary plans showing the location of a second access gate to the site and a description of how the gate will be opened by the fire department. The final plan submittal shall also include a letter containing comments from the Southern Inyo Fire Protection District or a statement that no comments were received.



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**Desert Tortoise Mitigation Compensation  
Analysis for the Hidden Hills Solar Electric  
Generating System**

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# Desert Tortoise Mitigation Compensation Analysis for the Hidden Hills Solar Electric Generating System

Prepared for  
Hidden Hills Solar I, LLC, and  
Hidden Hills Solar II, LLC

July 2012

Prepared by

**CH2MHILL®**

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# Desert Tortoise Mitigation Compensation Analysis

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## 1.0 Introduction

Hidden Hills Solar I, LLC, and Hidden Hills Solar II, LLC (the Applicant) reviewed the desert tortoise protocol survey results and habitat and botanical data available for the Hidden Hills Solar Electric Generating System (HHSEGS) project to evaluate the consistency of this information with the findings presented in the California Energy Commission's (CEC) Preliminary Staff Assessment regarding impacts to desert tortoise habitat and recommended mitigation ratios. The CEC used the presence of tortoise sign and habitat degradation within the project site to define impacts to desert tortoise habitat and determine mitigation ratios to mitigate these impacts. The CEC defined areas that were coarsely delineated by Garcia and Associates (CH2M HILL, 2011) as shadscale scrub as lower quality tortoise habitat warranting a 1:1 mitigation ratio and defined areas delineated as Mojave Desert scrub as higher quality tortoise habitat warranting a 3:1 mitigation ratio. They based the 3:1 ratio on precedence from other solar projects, specifically including High Desert Power Project, Victorville 2 Hybrid Power Project, and Calico Solar Energy Project.

After careful review of the information available for the project site, the Applicant suggests that the CEC's basis for determining mitigation ratios should be refined because: (1) these coarse-grained habitat classes do not adequately reflect tortoise habitat quality and use of the site, and (2) the projects cited by Staff did not, in fact, have simple 3:1 ratios for desert tortoise and there are other projects that also should be included in the analysis. The Applicant recommends that the CEC consider a more detailed and refined assessment of the ecological circumstances on the project site to ensure adequate and appropriate mitigation for loss of desert tortoise habitat. Specifically, we recommend that the CEC rely on the project's focused tortoise survey data and other site characteristics as the primary indicators of habitat quality for desert tortoise, and that this information be used as the basis for determination of mitigation ratios instead of the coarse-scale habitat classification provided in the botanical survey report for the project. This report presents an analysis of habitat quality, concluding with the recommendations that the CEC's designation of the Mojave Desert scrub habitat onsite as high quality be reconsidered, and that the entire project be considered a lower quality habitat. The findings of this report support a tiered mitigation approach consisting of mitigation ratios for loss of desert tortoise habitat of 0.5:1, 1:1 and 1.5:1 in identified areas of the project site.

## 2.0 Environmental Setting—Factors Affecting Desert Tortoise Habitat Quality

Habitat quality is affected by a series of factors that together comprise elements of the physical and biotic environment of the species under consideration. The nature of the substrate and surface roughness are two important elements of the physical environment that affect plant community composition and density which, in turn, are chief elements determining the carrying capacity of the local ecosystem. Especially in desert ecosystems, changes in plant community composition strongly affect carrying capacity for the associated vertebrate species, and net primary productivity as measured by aboveground vegetative biomass has long been known (for example, Shmida et al., 1986) to be a strong predictor of vertebrate carrying capacity in desert ecosystems. On the HHSEGS project site, the impact of these factors on habitat quality for desert tortoise is notable, the details of which are discussed below.

### 2.1 Geologic and Geomorphic Setting

The influence of substrate on plant community composition and productivity in the northeastern Mojave Desert has been a subject of study since at least the early twentieth century. Toward the bottom of most valleys in the Basin and Range Province soils become finer grained and charged with evaporites and carbonates. The saline, alkaline, clay-rich soil conditions are tolerated by only a subset of perennial plants common to the Mojave Desert, chiefly species of the saltbush *Atriplex*. In addition, Janice Beatley's research not far to the north at the Nevada Test Site (for example, Beatley, 1974) pointed to the climatic factors as well as edaphic factors influencing the distribution of saltscrub (desert scrub dominated by saltbush usually of the genus *Atriplex*) versus creosote bush-

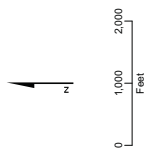
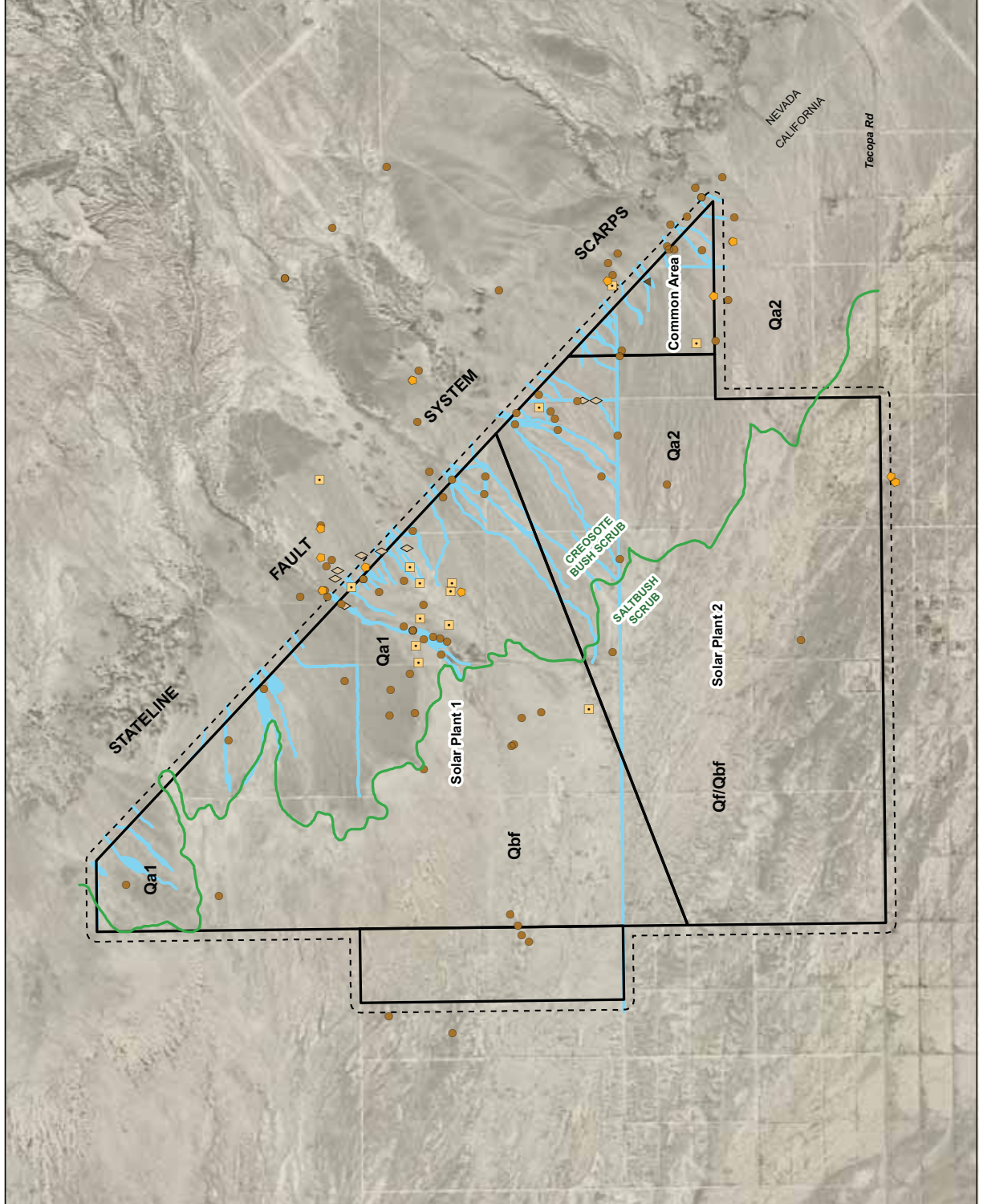
burrobush (*Larrea tridentata* – *Ambrosia dumosa*) scrub. In the case of a fossorial vertebrate such as the desert tortoise, aspects of the substrate are important not only for their effect on plant diversity and abundance, but also for the influence on habitability because burrows are critical to the animal's ability to withstand environmental extremes and escape predators.

The project area lies in the axial basin of the Pahrump Valley. This linear basin, oriented northwest-southeast, is typical of elongate valleys, or bolsons, that lack a hydrologic outlet and therefore fill with fine-grained sediment over tens to hundreds of thousands of years. The eastern margin of this basin lies just to the east of the HHSEGS project area, and is formed by the fault scarps of the Stateline Fault System (SFS; Scheirer et al., 2010). The HHSEGS project area has the general shape of a right triangle with the legs of the triangle running north-south and east-west, and the hypotenuse lying parallel to the California-Nevada border and the scarps of the SFS, which also generally parallel the border on the Nevada side (Figure 1). Scarps associated with the SFS comprise successively higher-elevation, subparallel lineaments, between about 0.25 mile and 2 miles northeast of the border. To the east of the SFS scarps lies the west bajada, or alluvial fan complex, of the Spring Mountains, and to the west is the HHSEGS project area in the Pahrump Valley bolson. This basin marks the position of the graben, or down-warped segment of crust, that lies to the west of the SFS (Lundstrom et al., 2002; Scheirer et al., 2010).

### 2.1.1 Surficial Geology

One of the principal features of the SFS is the dunes and sand sheets that have accumulated at the foot of the fault scarps in that area. And, due to differential uplift on the east side of the SFS, tongues of sandy alluvium have splayed out across the bolson floor onto the HHSEGS project area as Late Holocene (last 4,000 years) drainages channeled reworked eolian sand and minor gravels out onto the valley floor (Units Qa1 and Qa2 in Figure 1). This blanket of younger, generally loose, sandy alluvium mantles a second, much older sedimentary unit of starkly different properties. This older unit, which underlies Unit Qa on the eastern portion of the site and which is exposed at the surface elsewhere, is a loose to moderately indurated, carbonate-rich, buff to white light-colored silty clay to clayey sand. This older basin fill appears to be highly weathered, and is likely at least Late Pleistocene in age. More formal descriptions of the two surficial geological units that typify the HHSEGS site are provided below, and their distribution is shown in Figure 1.

- Qa Late Holocene sandy, gravelly alluvium, grey to light brown in color, blanketing the eastern approximately one-third of the HHSEGS site. Lateral facies changes typical of bar-and-swale alluvial deposition, although generally lacking clasts coarser than medium gravels. The abundance of reworked eolian sands notwithstanding, profiles usually display a moderately consolidated and cohesive sedimentary unit below about 50 centimeters (cm) (approximately 20 inches; see Photo 1). Unit Qa1 alluvium is deposited by drainages issuing from the SFS to the northeast, while Qa2 alluvium is an older Holocene unit. Alluvium of Unit Qa2 originated from now-abandoned drainages formerly integrated into a wash system issuing onto the HHSEGS site from the east (Figure 1). Unit Qa (both Qa1 and Qa2) supports burrobush-creosote bush (*Ambrosia dumosa*–*Larrea tridentata*) scrub with a suite of perennial associates that becomes increasingly diverse to the east as the state line is approached.
- Qbf Quaternary basin fill of Plio-Pleistocene age exposed at the surface on the western approximately two-thirds of the HHSEGS site. Carbonate and clay-rich, generally massively bedded basin fill possessing a typically high albedo (white to buff colored). Highly pedogenically altered with soil profiles often displaying friable, crumbly structure (Photo 2). Lateral facies changes include relict spring discharge carbonates (tufa ledges) and clay-filled paleo-drainages and small depobasins. Erosional exposures, particularly along roads, show that Qbf is mantled by Unit Qa debouching from the east onto the project area (Figure 1). The clay-rich, calcareous soils of Unit Qbf support saltscrub (*Atriplex* spp.) with a weedy flora in which the noxious species tumbleweed (*Salsola tragus*) and halogeton (*Halogeton glomeratus*) are abundant over areas that extend for acres. In the southern part of the HHSEGS site, the surface of Unit Qbf is sculpted of a linear bar and swale topography oriented generally west-northwest–east-southeast, with large (30 to 150 meters) whalebacks frequently mantled by a thin veneer of older, darker fluvial gravels (Units Qf and Qf/Qbf in Figure 1).



Qa1 - Holocene alluvium from the northeast  
 Qa2 - Holocene alluvium from the east  
 Qf - Quaternary (Late Pleistocene and Holocene?) fluvial deposits  
 Qbf - Quaternary (Late Pleistocene or older) basin fill

**Figure 1**  
**Land Surface Units**  
 Hidden Hills Solar Electric Generating System



Photo 1

**Trench profile showing stratigraphy typical of Unit Qa**

*Tags are at 10 cm (~4 inches) intervals. The trowel at about 50 cm (~20 inches) depth lies at the transition between friable sediments above and more compact, indurated sediments below that depth.*



Photo 2

**Trench profile showing a thin mantle of Unit Qa overlying the pedogenically altered and friable clays of upper Unit Qbf**

*The pedogenically altered zone is also heavily churned by rodent burrows. The sediments above about 1 meter (~39 inches) are poorly consolidated, while the clays below are massive and consolidated.*





Geotechnical and geoarchaeological test trenching through the Unit Qa sediment of the alluvial fans extending west from the SFS reveal primarily sandy strata intercalated with less frequent gravel lenses (Photo 1). Reworked eolian sand appears to be the primary component of this alluvium, with the more limited gravel lenses representing the bedload of each flood event, which rapidly fines upward to sand and then silty sand. Farther to the west where Unit Qa thins out and the calcareous basin fill of Unit Qbf is near the surface (Photo 2), if not exposed there, relatively indurated silty sand units do not exist. There are, however, some areas within Unit Qbf on the west side of the project area where limited tufa ledges are found that could provide some of the sheltering stratigraphy that contributes to attractive burrowing habitat for fossorial animals such as desert tortoise.

### 2.1.2 Surface Relief and Incision

As seen in Photos 1 and 2, the thickness of Unit Qa alluvium varies from less than 1 foot to in excess of 10 feet, with thicknesses generally increasing to the east, reaching a maximum depth in areas near the state line. Elevations also increase from southwest to northeast across the HHSEGS project site and toward the state line, in part due to an increase in the elevation of the erosional surface formed on top of Unit Qbf, and in part by the thickening of the alluvial fan lobes closer to their source. Test trenching near the toes of these fans reveals a thin stratum of Unit Qa overlying friable, pedogenically altered clays marking the top of Unit Qbf (Photo 2).

A fundamental rule of geomorphology is the flatter the terrain, the less incised the drainages tend to be, in the absence of arroyo cutting, and this is indeed the case with the HHSEGS area. The landscape on the western side of the HHSEGS site is flat, with a subdued gradient generally toward Pahrump Playa about 3 miles to the west-northwest (Photos 3 and 4). Drainages in this area are hardly discernible on the ground because they are so shallowly incised (for example, the swale in Photo 4). To the east and northeast, the terrain inclines more steeply upward to the SFS (Figure 2) and, as a consequence, the drainages are incised into the alluvium of Unit Qa, and therefore can be mapped (Figure 1). Figure 2 shows the elevation profile across the HHSEGS site (red line) where Unit Qbf is exposed to the west (left side of the figure), beyond the toe of the alluvial fan lobe, which is marked by the arrows. The profile shows the relatively steep elevational gain up the fan lobe to the east. This is the phenomenon accounting for the incision of washes and small arroyos into Unit Qa closer to the state line (Figure 1).

Because of the uplift along the SFS to the east in Nevada, consequent deposition of sandy alluvium onto the east side of the Pahrump bolson where the HHSEGS site is located, and the erosional incision of these alluvial surfaces (Photo 5), terrain is more deeply incised and variable on the eastern approximate one-third of the project site than farther west. Moreover, erosion of the shallow drainages on the eastern side of the project area exposes alluvial sediments that have moderately indurated silty-sand strata (Photo 1), and this sediment may, therefore, be more suitable for large burrows than the massive, calcareous fines of the older basin fill to the west (Unit Qbf; Photo 2).

Photo 3

**The western portion of the HHSEGS site where calcareous basin fill (Unit Qbf) is exposed at the surface and, at this locality, supports a shadscale-tumbleweed association**

*Note the hummocky nature of the surface, which is due primarily to fossorial rodent activity. View east-northeast toward the SFS. Arrows point to the toe of the alluvial fans (Unit Qa), which in turn is marked by the dark line of creosote bush.*



Photo 4

**The western portion of the HHSEGS site where Unit Qbf is exposed at the surface**

*Hat for scale; view south-southeast. At this locality, a barren clay surface is elevated 5 to 10 cm (a few inches) above the surrounding vegetation-choked swales (to upper right of hat). These swales possess no bank and are heavily bioturbated, while the barren clay is stable, evinced by the gravel lag on its surface.*



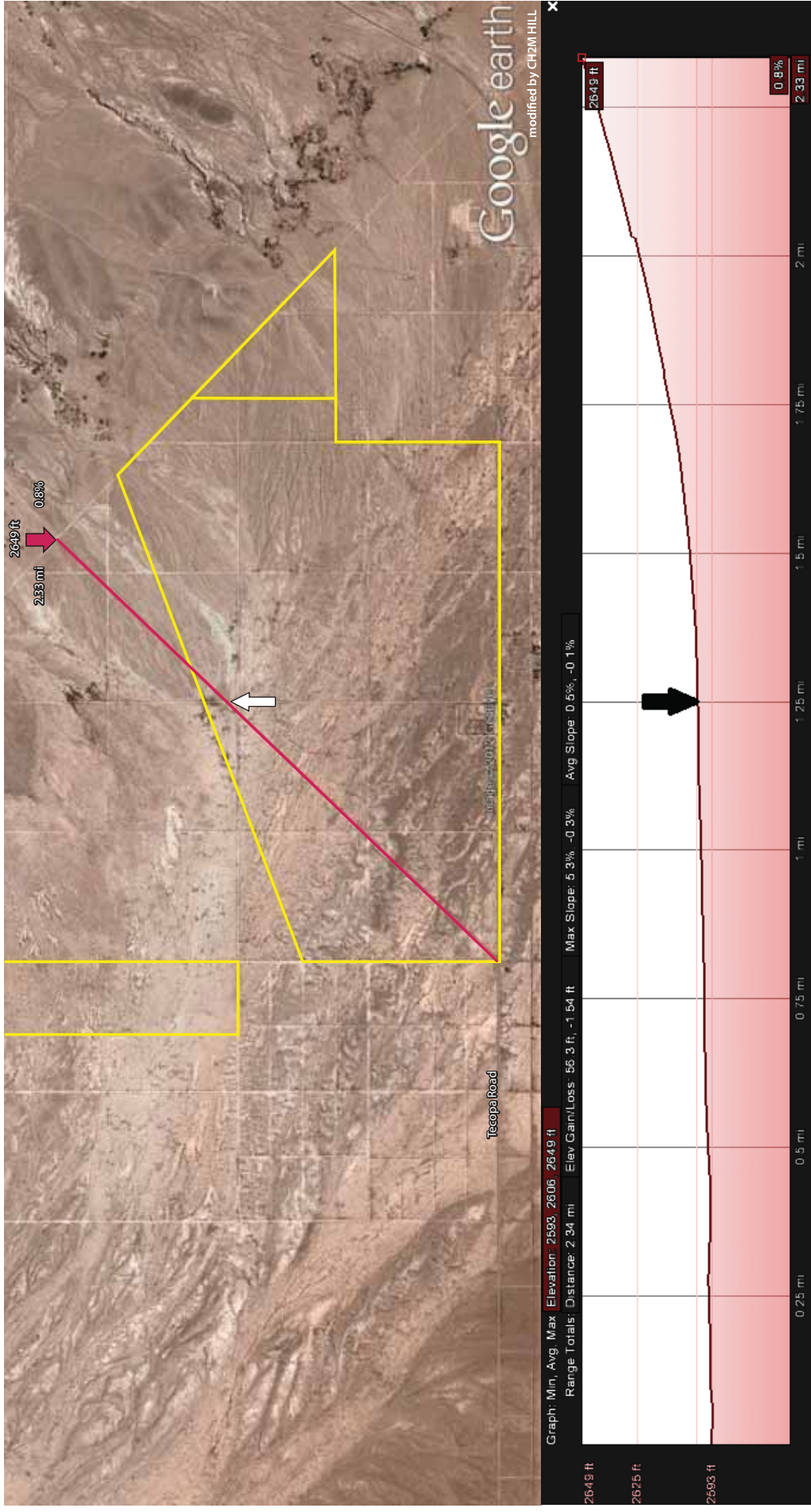


FIGURE 2  
Elevation Profile  
Hidden Hills Solar Electric Generating System  
CH2MHILL.



Photo 5

**A wash or shallow arroyo incised into Unit Qa1**

View west-southwest onto the HHSEGS site, with the road along the California-Nevada state line at the bottom of the photograph. The darker, dense shrubs in the mid-ground in the arroyo bottom are mesquite (*Prosopis glandulosa*). This is looking down one of the better-developed washes incised into the small alluvial fans on the east side of the HHSEGS site (Figures 1 and 2); it possesses a relatively large drainage basin including the Hidden Hills Ranch area east of the first set of scarps of the SFS.



## 2.2 Vegetational Patterns

As is typical of valleys in the Great Basin (including both the floristically defined Mojave and Great Basin deserts), the bottom of the Pahrump Valley off the playas is typified by saltscrub or saltbush desert scrub, dominated by shrubs of the genus *Atriplex*, as well as other halophytes. In the Mojave Desert, these valley bottom plant communities give way up-slope to creosote bush desert scrub and, farther upslope and nearer the mountains, to more diverse desert scrub vegetation, which is not the subject of discussion here. Substrate plays an important role in the transition from saltbush scrub to creosote bush scrub, although frigid winter temperatures near valley bottoms may also play a role (for example, Beatley, 1974). For example, in the western approximately two-thirds of the HHSEGS project area, calcareous, clayey silts and clays of the valley bottom (Unit Qbf; Figure 2) support vegetation dominated by shadscale (*Atriplex confertifolia*, a type of saltbush) as well as other halophytes, both annual and perennial. On the sandy alluvium of Unit Qa, however, saltbush occurs only sparsely when at all, and vegetation is typified by creosote bush and burrobush, with the former being visually prominent and the latter numerically dominant (but much smaller). The sharply defined limits of the small alluvial fans, visible on the remote images as splayed lobes on the lighter-colored basin fill (Figures 1 and 2), owe their contrast as much to the limits of the dark-evergreen creosote bush (as shown in Photo 3), which does not occur on the calcareous clays of Unit Qbf, as to the change in surface albedo as one moves from the off-white, carbonate-rich soils of the bolson and onto to the darker, alluvial soils of the fans. Due to substrate control—the edaphic effects of the clay-rich, high-pH soils of Unit Qbf to the west—the ecotone between saltbush scrub to the west and creosote-burrobush scrub to the east is due to, and therefore largely concordant with, the limits of sandy alluvium issuing onto the valley floor from the east. This is consistent with field observations of the ecotone in the HHSEGS area.

### 2.2.1 Shadscale and Halophyte Scrub of the Bolson Floor

In this part of the Mojave Desert, basin-floor plant community transitions have been most closely studied by Janice Beatley (for example, Beatley, 1976) on what was then the Nevada Test Site, about 50 to 100 miles north of the HHSEGS site. As in the valleys of the Nevada Test Site, certain shrubs extend out onto the basin floor to mingle with saltbush and the most common are wolfberry (*Lycium pallidum*) and hopsage (*Grayia spinosa*). Annual halophytes abundant on the western portion of the HHSEGS site include tumbleweed and halogeton. Although normally classified as noxious weeds, their membership in the family *Chenopodiaceae* is in accord with their

evident tolerance of saline, high-pH soils. Microhabitat variability across the western portion of the site is affected by inverted topography in which erosional remnants of clay-filled channels and depo-basins are largely barren, while bordering broad, shallow swales are choked with vegetation (as seen in Photo 4). Other than shadscale, seepweed (*Suaeda moquinii*) and tumbleweed, these swales frequently support dense red-brome (*Bromus madritensis*) (the straw colored grass in the swale shown in Photo 4).

## 2.2.2 Creosote Bush Scrub of the Alluvial Fans of the Eastern Edge of the HHSEGS Project Area

The alluvial ramp leading uphill to the east and northeast is modest but nevertheless reflects a real environmental gradient along which plant associations change in response to changing edaphic, topographic, and, most likely, microclimatic conditions. These changes are more subtle than that associated with the transition from saltscrub to creosote bush desert scrub (Figure 1; Photo 3), which is relatively abrupt and related to an equally abrupt change in subsurface geology. In the case of changes within the context of creosote bush desert scrub, the following factors contribute to this generally east-west environmental gradient:

- Increasing elevation, which, even if only by several tens of feet (Figure 2), moderates extreme winter low temperatures caused by cold-air pooling in basins on still winter nights (for example, Beatley, 1975)
- Increasing depth of sandy alluvium, which, relative to the calcareous clays at greater depth (Photo 2), is a substrate that favors a suite of desert shrubs, rather than just halophytes
- Greater number and depth of desert washes, which, in turn, directly affects increased microtopographic variability
- Increased frequency and depth of discontinuous sand sheets, which tend to accumulate in the downwind portion of topographic lows
- Increasing clast size of the alluvium

Therefore, although occurring over short distances (Figure 2), the environmental changes along the gradient occupying the last mile or less of the eastern portion of the HHSEGS site are not inconsequential and, along with the abrupt change in substrate, account for the fact that the eastern approximately 33 percent of the HHSEGS project area is higher diversity desert scrub, and higher quality desert tortoise habitat.

With increasing frequency and depth of washes, sediments that may be more suitable for desert tortoise burrows (Photo 1) are exposed in the eastern portion of the HHSEGS site, at least to a modest degree (Photo 5). Perennial diversity increases with the increased frequency of desert riparian species such as cheeseweed (*Ambrosia salsoia*), bladdersage (*Salazaria mexicana*), and limited mesquite (*Prosopis glandulosa*) near the state line (Photo 5). Discontinuous sand sheets support perennial grasses including big galleta (*Pleuraphis rigida*) and rice-grass (*Stipa hymenoides*) while the interfluvies support an increasingly diverse creosote bush desert scrub with the addition of such species as ephedra (*Ephedra nevadensis*), ratany (*Krameria erecta*) and indigo bush (*Psoralea fremontii*). These and other associates join an increasing density and number of burrobrush and creosote bush shrubs to comprise a scrub community that, while still desert scrub, is notably more productive than that to the west of the dividing line between shadscale and creosote bush desert scrub (Figure 1).

## 3.0 Desert Tortoise Survey Results

The plant community present on the project site is a function of soil type, land use patterns, and many other ecological and environmental factors, and is one of the determining factors of the site's suitability for desert tortoise. If conditions were comparable across the site and in the surrounding area, density of tortoise and their sign (tracks, burrows, scats, skeletons) would be expected to be fairly uniform throughout these areas. However, results of the desert tortoise survey completed for the site (Sundance Biology, Inc. [Sundance], 2011) indicate substantial differences in the detection rates of tortoise and sign inside and outside the site boundary, as well as both between and within the two major plant communities. The survey found only two desert tortoise within the project boundary (both near the eastern border) where 100 percent coverage surveys were completed using transects spaced at 30 feet. By contrast, 11 tortoise (adult, immature and juvenile) were detected in the area east of the project boundary where transects spaced at 30 feet were used out to 150 meters from the boundary, and a much less comprehensive transect sampling approach was used to assess the area up to 1,600 meters from the boundary, with single 30-foot-wide transects located at 200, 400, 600, 1,200, and 1,600 meters from the site boundary.

Sundance (2011) indicated that the majority of the tortoise sign (burrows, scat, and tracks) was recorded onsite, but did not address the fact that this was largely a function of sampling effort as opposed to a similarity in habitat quality between the in-project and out-of-project habitats. The physical conditions and plant communities change dramatically from west to east, as described in Section 2.0, which is consistent with the findings within the project area of only two tortoise, and sign that could be generated by a very low density tortoise population (12 scats and 5 track sets).

Table 1 presents an analysis of relative desert tortoise densities based on unit of survey effort and calculated from the data collected by Sundance in the wildlife survey (Sundance, 2011). Acreages of the zone-of-influence (ZOI) transects were calculated on the basis of a 30-foot transect width, which is the width used in the other areas for assessment survey. Densities are based on the number of adult desert tortoises detected per acre surveyed. The relative densities are for comparison between the areas of this survey and are not estimates of total tortoise population resident in each area.

The data present a clear pattern of declining desert tortoise population moving from east to west. No desert tortoise was found in shadscale scrub areas on or near the HHSEGS site (that is, in the burrowing owl survey buffer or along the ZOI transects west of the site). The desert tortoise population density of the Mojave Desert scrub on the site is one fifty-sixth (1/56) the density of the ZOI east of the site in Nevada. It is one-eighth (1/8) the density of the burrowing owl buffer zone in the Mojave Desert scrub along the eastern edge of the site. Desert tortoise density in the shadscale scrub areas is effectively zero, although some transient use occurs.

TABLE 1  
**Relative Densities of Adult Desert Tortoise Among Distinct Areas and Vegetation Types, Based on Unit of Survey Effort**

Area Surveyed	Vegetation Community	Acres Surveyed	Adult Tortoises	Density (Tortoise/Acre)	Acre/Tortoise	Relative Densities
<b>Project Site</b>		3,258	2	0.0006	1,629	
	Mojave Desert Scrub	1,611	2	0.0012	806	1
	Shadscale Scrub	1,647	0	0	0	
<b>Burrowing Owl Survey Buffer (offsite)</b>		652	6	0.0092	109	
	Mojave Desert Scrub	600	6	0.0100	100	8
	Shadscale Scrub	52	0	0	0	
<b>Zone of Influence (offsite)</b>		182	7	0.0385	26	
	Mojave Desert Scrub	100	7	0.0700	14	56
	Shadscale Scrub	82	0	0	0	

Source: Sundance, 2011

Furthermore, the density estimates provided by Sundance are inherently inflated because five tortoise, observed outside the project boundary, were used in the U.S. Fish and Wildlife Service (USFWS) predictive model (USFWS, 2010) to estimate density of tortoise within the project area. These results appear to be interpreted by the CEC to suggest that the project may support more tortoise than would be reasonably expected to occur in the compromised site. Density of tortoise using the USFWS model (2010) calculated using only the tortoise detected onsite would be estimated at 3.8 (95% CI 0.94 to 15.14). Using the same formula that CEC used, the project site may support between 0 to 7 juvenile tortoises (that is, a total population range between 1 and 22 adults, subadults, and juveniles).

Using the CEC's calculation to estimate the number of eggs, approximately 0 to 74 eggs would be expected on the site in a given year. However, fewer eggs are likely to be onsite at any given time because it is likely that not all females are of reproduction age or elected to produce eggs during any given year. The point estimates and confidence intervals for desert tortoise and eggs are presented in Table 2.

TABLE 2  
Estimated Number of Desert Tortoise on the Project Site (95 percent confidence values)

<u>Adult and Sub-adults<sup>a</sup></u>		<u>Juvenile Estimates<sup>b</sup></u>		<u>Eggs<sup>c</sup></u>	<u>Total Adult/Sub-adult and Juvenile</u>	
Lower	Upper	Lower	Upper	(Min-Max)	Lower	Upper
1	15	0	16	0 - 74	1	31

<sup>a</sup> Value based on formula recommended by USFWS. Numbers reflect the 95 percent confidence interval.

<sup>b</sup> Values based on the equations of Turner et al., 1987. Equation assumes that juveniles account for approximately 31.1 to 51.1 percent of the overall tortoise population. If P = Percentage of juveniles in population, A = Number of adults, and J = Number of juveniles then  $P = J / (J + A)$ . Therefore  $J = PA / (1 - P)$ .

<sup>c</sup> Assumes a 1:1 sex ratio and that all females present would clutch in a given year. Assumes average clutches per reproductive female in a given year (1.6, see Turner et al. 1987, multiplied by the average number of eggs found in a clutch (5.8; see USFWS, 1994).

The correspondence of desert tortoise sign with vegetation communities also supports the pattern expected from the analysis of soil and vegetation communities described above, including that the western margin of Mojave Desert scrub community is sparsely occupied and of marginal quality as it grades into the shadscale scrub community. The conclusion that can and should be drawn from these analyses is that the project site is distinctly different than the area outside the project boundary in its ability to support desert tortoise and, therefore, its quality and importance to the species is low relative to the habitat to the east. The difference in density within and outside the project boundary does not support the CEC finding that the Mojave Desert scrub located within the project site is high-quality habitat warranting a 3:1 mitigation ratio for replacement of lost habitat. Furthermore, the greatest use onsite is in the far east, not throughout the Mojave Desert scrub community.

The Applicant suggests the following hierarchy of factors be used to divide tortoise habitat quality on the project:

- Primary Division: Between soil types Qa (Qa1 and Qa2) and Qb (Qf and Qbf)
- Secondary Division: High concentrations of the noxious halophytic weed *Halogeton glomeratus*
- Tertiary Division: Distribution and concentrations of tortoise sign

This results in three compensation ratios for the HHSEGS site, corresponding to Figure 3:

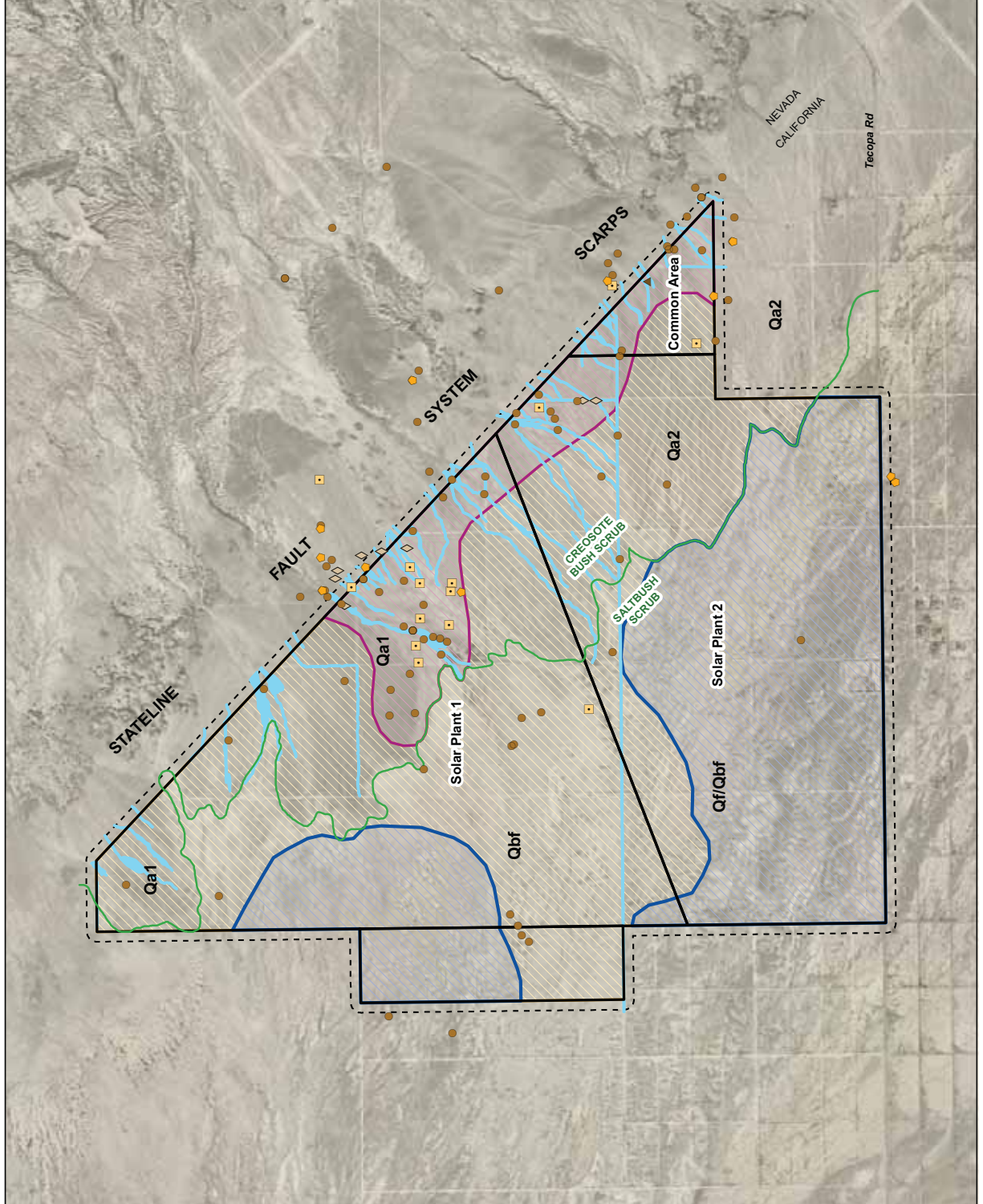
- 1.5:1 in the most concentrated tortoise use areas in Qa1, which are consistent with the greater concentration of washes
- 1:1 over most of the remainder of Qa soil types, plus Qb areas with lower halogeton concentrations, including those areas with scattered tortoise sign
- 0.5:1 throughout the remainder of the high-halogeton areas, which also coincides with the remainder of the Qb soil type.

The proposed total acreage of compensation for the project is detailed in Table 3.

TABLE 3  
Total Proposed Compensation Acreage for the HHSEGS project

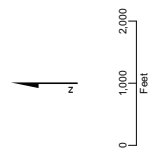
Compensation Ratio	Impact Acreage	Acres to be Acquired
0.5:1	1,248	624
1:1	1,664	1,664
1.5:1	362	543
Total	3,274	2,831





- LEGEND**
- Tortoise Data**
- Live Tortoise
  - Tortoise Burrow
  - Tortoise Carcass
  - Tortoise Scat
  - Tortoise Tracks
- Vegetation Zone Boundary (ecotone) based on soil types:**
- Shadscale scrub to west, creosote bush scrub to east
- Mitigation Ratios**
- 1.5:1 - Areas of concentrated tortoise use in Qa1
  - 1:1 - Areas of lower halogeton concentration with scattered tortoise sign in Qa and Qb areas
  - 0.5:1 - Areas of high halogeton concentration, corresponds to remainder of Qb soil type
  - Delineated Washes and Small Arroyos
  - 200ft Buffer
  - HHSEGS Boundary

Qa1 - Holocene alluvium from the northeast  
 Qa2 - Holocene alluvium from the east  
 Qf - Quaternary (Late Pleistocene and Holocene?) fluvial deposits  
 Qbf - Quaternary (Late Pleistocene or older) basin fill



**Figure 3**  
**Mitigation Ratios**  
 Hidden Hills Solar Electric Generating System

## 4.0 Mitigation Ratios on CEC-regulated Projects

In the Preliminary Staff Assessment, CEC Staff stated that the mitigation ratio of 3:1 for HHSEGS "... is consistent with past Energy Commission mitigation requirements for projects with impacts to desert tortoise (for example, High Desert Power Plant Project, Calico Solar Energy Project, and the Victorville 2 Hybrid Power Project), and with Incidental Take Permits issued by CDFG for other non-Energy Commission jurisdiction projects in the region." The Applicant reviewed these projects and found that the mitigation ratios were not a simple 3:1 ratio but ranged from 0 to 5:1. Table 4 provides a summary of the ratios for each project.

TABLE 4  
Comparison of Conditions and Mitigation Ratios at Various CEC Project Sites

Project and Mitigation Ratio(s)	Description and Rationale
Victorville 2 Hybrid Power Project (07-AFC-1)  <b>Ratio: 3:1</b>  Final Commission Decision  July 2008  CEC-800-2008-003-CMF	Staff-recommended 3:1 mitigation ratio for combined listed species (desert tortoise and Mohave ground squirrel) with additional consideration of burrowing owl, and creosote rings. Two desert tortoises were observed onsite and four additional tortoises were found in the zone-of-influence transects. Eight tortoises had been found in a slightly earlier survey in an area overlapping the project site. The project is in native habitat, approximately 3 miles from designated critical habitat and a Desert Wildlife Management Area (DWMA). Staff noted that, compared to other projects in the Victor Valley, the proposed project site has relatively low habitat disturbance, trash, and OHV use, and a higher diversity of desert animal species. Finally, we note that the California Department of Fish and Game's (CDFG) earlier consultations with the Applicant—prior to establishing Mohave ground squirrel presence—informed the Applicant of a 1.5:1 ratio for desert tortoise alone. All of these factors indicate that compensation at a ratio of 3:1 is required to mitigate the project's impacts to multiple sensitive biological resources.
Calico Solar Project (08-AFC-13C)  <b>Ratio 1:1, 3:1, and 5:1</b>  August 2010	The Biological Opinion, dated 08 August 2010, stated that the compensation ratio was 1:1. In the Commission Decision, dated 12 November 2010, compensation was set at 1:1 for the project area south of the BNSF railroad tracks, 3:1 for the project area north of the tracks, and 5:1 for an additional area north of the tracks that had the highest numbers of tortoise observations (Commission Decision: Page 123). In this reduced footprint addressed in the Commission Decision, an estimated 22 tortoises would occupy the site (Commission Decision: Page 44). "Habitat north of the railroad ... constitutes good quality habitat and supports moderate densities of desert tortoises in some areas." Habitat quality south of the railroad to I-40 provides lower quality habitat and has been subject to long-term disturbance. Nonetheless, tortoise sign was observed there (Commission Decision: Page 45).
High Desert Power Project (97-AFC-01)  <b>Ratio 0 to 4:1</b>  Final Commission Decision  May 2000	High Desert's 2081 permit, No. 2081-1999-050-6 adopted a 1:1 compensation ratio for combined desert tortoise and Mohave ground squirrel for the power plant and linears, excluding the second, 32-mile natural gas pipeline. During later workshops with CEC, the applicant agreed to a ratio of 0 to 2:1 for the power plant and linears (except the second natural gas pipeline) (Final Staff Assessment, 21 January 2000: Page 340). For the latter pipeline, the final ratio was 1.8:1 overall, varying from 1:1 to 4:1 along the pipeline (Final Commission Decision, 03 May 2000: Page 138). (It's notable that Staff recommended slightly higher ratios than the CEC ultimately agreed to.) The variation in the ratio is because some of the route was in designated critical habitat. Also, the compensation is for both desert tortoises and Mohave ground squirrel (Final Staff Assessment, 21 January 2000: Page 340)

TABLE 4  
Comparison of Conditions and Mitigation Ratios at Various CEC Project Sites

Project and Mitigation Ratio(s)	Description and Rationale
<p>Beacon Solar Energy Project (08-AFC-2)</p> <p><b>Ratio: ~0.25:1 and 3:1</b></p> <p>Final Commission Decision</p> <p>August 2010</p> <p>CEC-800-2010-005 CMF</p>	<p>Staff-recommended compensation of 115 acres for combined listed species (desert tortoise and Mohave ground squirrel). This included 15 acres at 3:1 for 5 acres of higher-quality, occupied habitat on the linears, and 100 acres for the incidental take of animals during construction and operation. No live desert tortoises were found within the plant site boundary during the 2007 and 2008 protocol-level surveys, although three tortoises were observed immediately outside the site during protocol surveys and other activities. A small amount of other desert tortoise sign was detected within the plant site boundary that included an depredated juvenile carcass, a deteriorated adult burrow, and two other sets of old (more than 4 years since death) bone and carapace fragments. Outside the plant site, two live desert tortoises were observed north of the plant site, one associated with a burrow. The site is a former agricultural operation that is largely barren with slight regrowth; only 21 percent of the site is disturbed or regrowth scrub. The presence of transient desert tortoises in this poor habitat was deemed to likely be attributable to the proximity of the adjoining native habitat outside of the plant site rather than reflecting use by resident individuals.</p>
<p>Abengoa Mojave Solar Project (09-AFC-5)</p> <p><b>Ratio: 0.27:1</b> (430-acre habitat loss:</p> <p>118 acres mitigation)</p> <p>Final Commission Decision</p> <p>September 2010</p> <p>CEC-800-2010-008 – CMF</p>	<p>The protocol surveys did not identify a resident population of desert tortoise within the project area. However, in 2006 a single live tortoise was observed in the project area. The project abuts and/or is surrounded by two DWMA's on two sides. While the majority of the 1,765-acre proposed project area is disturbed and lacks suitable forage and burrow sites for desert tortoise, there were 430 acres of ruderal and/or disturbed saltbush and creosote bush scrub. Condition of Certification BIO-15 required the project owner to mitigate for this habitat loss and incidental take of the desert tortoise by acquiring no less than 118.2 acres of land.</p>
<p>Blythe Solar Power Project (09-AFC-6)</p> <p><b>Ratio: 1:1</b></p> <p>Final Commission Decision</p> <p>September 2010</p> <p>CEC-800-2010-009-CMF</p>	<p>Project owner required to provide compensatory mitigation at a 1:1 ratio for impacts to 6,958 acres of low-to moderate-quality, occupied desert tortoise habitat and fragmentation of surrounding habitat, adjusted to reflect the final project footprint. One desert tortoise was observed on the western part of the project disturbance area and five were observed west of the site in the buffer area. Fresh/recent tortoise sign was concentrated primarily in the western half of the project and west. Densities were not estimated, but were very low on the site, based on tortoise sign, and unevenly distributed.</p>

TABLE 4  
Comparison of Conditions and Mitigation Ratios at Various CEC Project Sites

Project and Mitigation Ratio(s)	Description and Rationale
<p>Genesis Solar Energy Project (09-AFC-8)</p> <p><b>Ratio: 1:1 and 5:1</b></p> <p>Final Commission Decision</p> <p>September 2010</p> <p>CEC-800-2010-011 CMF</p>	<p>The evidence showed that the project disturbance area is currently unoccupied by desert tortoise and the northwestern portion of the GSEP site is suitable or marginally suitable habitat, while the remainder of the site is not habitat for desert tortoise. CEC, BLM, CDFG and USFWS staff agreed that the habitat within the project disturbance area is of lower quality closer to the Ford playa and is higher quality toward the upper bajadas, but considered the entire GSEP site to contain suitable habitat for desert tortoise and could potentially be occupied by this species in the future. The solar plant site is not within critical habitat or a DWMA, although the linear features, south of Interstate-10 intersected both.</p> <p>Mitigation for direct impacts as follows:</p> <p>On the solar plant site: 1:1 On the linears within DWMA/Critical Habitat: 5:1</p>
<p>Palen Solar Power Project (09-AFC-07)</p> <p><b>Ratio: 1:1 and 5:1</b></p> <p>Final Commission Decision</p> <p>December 2010</p> <p>CEC-800-2010-010 CMF</p>	<p>Potential direct impacts to the desert tortoise from the proposed project include: (1) the permanent loss of 3,738 acres of low to moderate quality occupied habitat, including 201 acres of designated critical habitat within the Chuckwalla Desert Tortoise Critical Habitat Unit.</p> <p>Mitigation for direct impacts as follows: Within Critical Habitat 228 acres at 5:1 = 1,140 acres Outside Critical Habitat 3,909 acres at 1:1 = 3,909 Desert Tortoise Total 4,137</p> <p>Total Desert Tortoise Mitigation = 5,049 acres</p>
<p>Rice Solar Energy Project (09-AFC-10)</p> <p><b>Ratio: 1:1 and 3:1</b></p> <p>Final Commission Decision</p> <p>December 2010</p> <p>CEC-800-2010-019 CMF</p>	<p>Staff, in consultation with USFWS, BLM, and CDFG biologists, determined that a mitigation ratio of 1:1 would reduce permanent and long-term impacts to approximately 1,412 acres of lower-quality habitat at the solar generator site to less than significant. For permanent and long-term impacts to approximately 37 acres of higher-quality habitat along the generator tie-line, access road, and at the interconnector substation, a mitigation ratio of 3:1 would reduce impacts to less than significant.</p> <p>Recorded during protocol surveys of solar site and transmission line route in 2009: 7 tortoises, 91 shell-skeletal remains, 66 burrows, 3 egg shell fragment locations, and 56 scat events. Most of the live desert tortoise occurrences were noted in the ZOI transects surrounding the solar field site and transmission line. Recent desert tortoise sign was concentrated in the northwest portion of the solar field site and along the southern half of the transmission line route. In the ZOI transects, recent sign was most abundant to the north and west of the solar field site, and along the southern half of the transmission line route.</p>
<p>Palmdale Hybrid Power Project (08-AFC-9)</p> <p><b>Ratio: No compensation.</b></p> <p>Final Commission Decision</p> <p>August 2011</p> <p>CEC-800-2011-005 CMF</p>	<p>No compensation was required for desert tortoise.</p> <p>Desert tortoise or their sign were not located on the power plant site; however, one burrow that potentially could be used by a tortoise was found in 2008 on the 3,960-foot ZOI transect for the power plant site, west of the site. This burrow was overgrown with vegetation and had no sign of recent use (e.g., scat, tracks, etc.). Habitat quality is Low on the power plant site and moderate on the transmission line</p>

HHSEGS is most similar to the Blythe Solar Power Project (BSPP), in that most of the habitat is actually offsite and deteriorates rapidly away from this habitat, onto the project site. Unlike BSPP, however, HHSEGS actually has areas



that are highly marginal, or could even be considered non-habitat, used only transitionally. Therefore, using the criterion of precedence based on other projects, a 1:1 ratio would be most appropriate.

## 5.0 Conclusions and Recommendations

The topographic, geologic, ecologic, and botanical circumstances at the HHSEGS site are consistent with the desert tortoise survey results and support the finding that the habitat quality for desert tortoise is extremely low in the western portions of the site and transitions toward more suitable habitat to the east. The results of this analysis indicate that the analysis of the site ecology, as well as the tortoise survey data, can and should be used to indicate the areas of relative importance to desert tortoise, and thus serve as a better indicator of habitat quality than the coarse-scale habitat classification provided by Garcia and Associates (CH2M HILL, 2011).

Based on these findings and precedent established on recent CEC-authorized projects, a 3:1 mitigation ratio for replacement of lost habitat is inappropriate for HHSEGS. Precedent suggests that a 1:1 mitigation ratio be required by CEC for impacts to desert tortoise habitat on this site, with consideration given to areas that may warrant a 0.5:1 ratio, such as areas of extensive weed infestation that render existing conditions unsuitable for supporting desert tortoise and thus do not warrant replacement through mitigation, and 1:1, such as areas with lower halogeton concentration with scattered tortoise sign.

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**Hidden Hills Solar Electric Generating System (HHSEGS)  
(11-AFC-2)  
PSA Comments, Set 2**

**Queue Cluster Alpha  
Phase I Interconnection Study Report**

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**Queue Cluster Alpha  
Phase 1 Interconnection Study Report**

**Study for the Valley Electric Association, Inc.  
Service Area**

**Prepared by Navigant Consulting**



**On Behalf of Valley Electric Association, Inc.**



**June 8, 2012**



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## EXECUTIVE SUMMARY

This Queue Cluster Alpha (“QCA”) Phase I Study (“Study”) was initiated to determine the impacts of the QCA projects on the Valley Electric Association, Inc. (“VEA”) system in southern Nevada and on that portion of the California Independent System Operator (“CAISO”) controlled grid in the “East-of-Pisgah” (“EOP”) area in southern Nevada and southeastern California. The Study was undertaken by Navigant Consulting for VEA as part of the on-going effort to merge the VEA generation interconnection queue with that of the CAISO pursuant to the transition agreement between VEA and the CAISO. The Study is based on the powerflow data files used in the CAISO’s Queue Cluster Four (QC4) Phase I study for the EOP area undertaken in 2011. QCA includes two solar thermal projects, both of which have requested Full Capacity status with the CAISO, as follows:

- VEA Queue #13 with a total capacity of 540 MW<sup>1</sup> (net), and
- VEA Queue #14 with a total capacity of 270 MW<sup>2</sup> (net).

This Study assumes that:

- The planned 230-kV interconnection between VEA’s Bob Tap substation<sup>3</sup> (which would be interconnected with the existing Pahrump-Mead 230-kV line) and the existing Eldorado 220-kV substation would be in-service, and
- Both of the QCA projects would be interconnected with the proposed Crazy Eyes Tap<sup>4</sup> 230-kV substation which would be interconnected with the Pahrump-Bob Tap 230-kV line.

The Study provides the following information:

- Background information regarding VEA’s existing 230-kV and 138-kV system in southern Nevada.
- Impacts on the VEA system and on the CAISO-controlled grid in the EOP area due to the interconnection of the two projects with the VEA system, rather than with the CAISO-controlled grid at Eldorado.
- System reinforcements necessary to mitigate the noted impacts on the VEA system and on the CAISO-controlled grid in the EOP area.

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<sup>1</sup> This project is also in the CAISO queue (#714) with a total capacity of 540 MW interconnected at the Eldorado 220-kV bus and was modeled as such in the QC4 studies.

<sup>2</sup> The original interconnection application for this project specified a net capacity of 1,080 MW. It is also in the CAISO queue (#740) with a total capacity of 1,080 MW interconnected at the Eldorado 500-kV bus and was modeled as such in the QC4 studies. The project sponsor subsequently requested that both VEA and the CAISO study the project in QCA as having a capacity of 270 MW.

<sup>3</sup> This facility has previously been referred to (unofficially) as Sloan Canyon

<sup>4</sup> This facility had previously be referred to (unofficially) as the Wiley Tap

- A good faith estimate of the costs for the identified reinforcements and of the time to construct such facilities.

To determine the impacts caused by the QCA projects, the following technical studies were performed:

- Steady State Power Flow Analyses;
- Transient Stability Analyses; and
- Short Circuit Impact Analyses.

The results of these studies indicate that the QCA projects are responsible for overloading transmission facilities in the VEA area and that the impacts of certain outages could be mitigated by the application of special protection schemes (SPS). Table 1 presents information on the system additions and upgrades identified in the Study (both with and without the use of the SPS) and the estimated costs of such.

<b>TABLE 1 IDENTIFIED UPGRADES</b>		
<b>Category</b>	<b>Description</b>	<b>Estimated Costs (\$1000) <sup>5</sup></b>
<b>Base Additions/Upgrades <sup>6</sup></b>	Crazy Eyes Tap Substation <sup>7</sup>	10,100
	Reconductor Pahrum-Mead 230-kV Line With ACCR <sup>8</sup>	30,900
	Reconductor Pahrum-Gamebird 138-kV Line With ACCR <sup>9</sup>	600
	Replace 230/138-kV Transformers at Pahrum <sup>10</sup>	5,600
	Add Phase-Shifting Transformer on Gamebird-Sandy 138-kV line <sup>10</sup>	1,400
	SPS Equipment at Crazy Eyes Tap	2,000
	<b>Estimated Base Costs</b>	<b>50,600</b>
<b>SPS Reduction Additions/Upgrades</b>	Crazy Eyes Tap (add one line termination)	2,000
	Desert View and Northwest Substations	4,800
	Crazy Eyes Tap-Desert View-Northwest 230-kV line	24,600
	SPS Equipment at Crazy Eyes Tap	(2,000)
	<b>Additional Costs to Reduce SPS Requirement</b>	<b>29,400</b>

<sup>5</sup> This does not include the costs for the QCA project substations or the interconnection lines with the Crazy Eyes Tap substation.

<sup>6</sup> Upgrades required if SPS was applied to mitigate the impacts of outages involving the Crazy Eyes Tap-Bob Tap 230-kV line and the Crazy Eyes Tap-Pahrum 230-kV line.

<sup>7</sup> It has been assumed that the Crazy Eyes Tap 230-kV switchyard would be built in a “breaker-and-one-half” configuration so as to maximize the reliability of the facility.

<sup>8</sup> A total of approximately 85 miles; costs include OPGW on the line.

<sup>9</sup> The length of this line is approximately 5 miles.

<sup>10</sup> Refer to Table 6 for information on assumed transformer/PST sizes.

The estimated time to engineer, license, procure, and construct the facilities identified in Table 1 could be up to 24-30 months from the time a generation interconnection agreement (GIA) is signed.

#### **BACKGROUND ON VEA SYSTEM**

As depicted in Figure 1, the existing transmission system of VEA consists of:

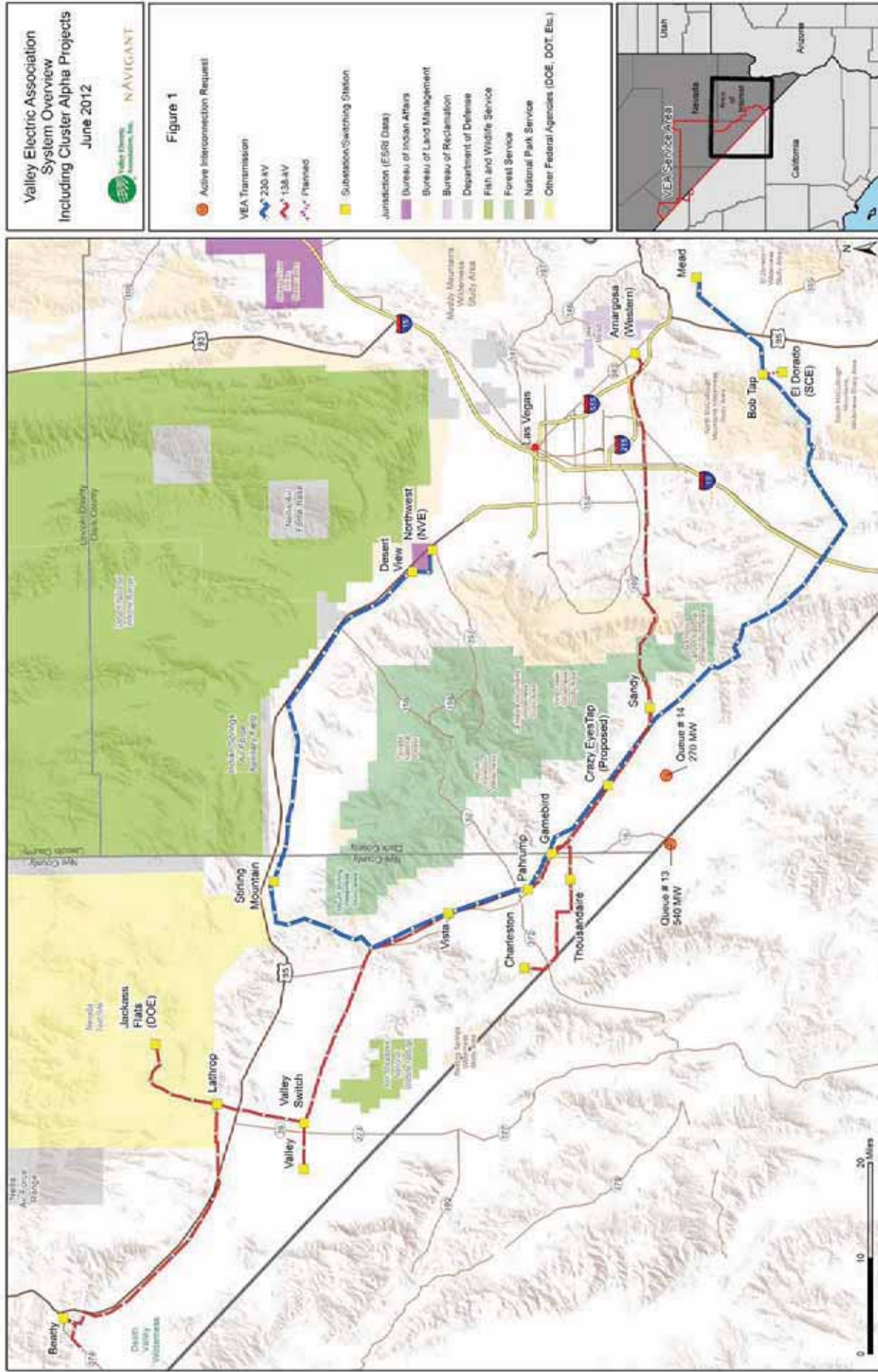
- A 230-kV line which extends from the Pahrump Substation to the Mead Substation of the Western Area Power Administration (WAPA). This line presently utilizes 795 “Drake” ACSR conductor and has a capability of approximately 270 MW (normal) and 360 MW (emergency).
- A 138-kV line which extends from the Gamebird Substation to the Amargosa Substation where it is interconnected with the WAPA system via a 230/138-kV transformer. The capability of this line is presently limited by the rating of the Amargosa transformer to approximately 57 MW (normal) and 63 MW (emergency).
- A 138-kV line which extends from the Pahrump area to the northwest where it interconnects with the NV Energy system at the Jackass Flats Substation. The capability of this line is approximately 95 MW (normal) and 125 MW (emergency).
- A number of other 138-kV lines which are used to serve VEA load at several 138/24.9-kV substations within the VEA service area.

In addition to the above facilities VEA is constructing a new 230-kV line which will extend from the Pahrump Substation to the north and east and which will be interconnected with NVE’s Northwest Substation. This line will utilize 954 MCM ACSR conductor and will have a capability of approximately 300 MW (normal) and 400 MW (emergency). VEA has also requested an interconnection between the Eldorado Substation and the VEA Bob Tap Substation which will be interconnected with the Pahrump-Mead line at a point about 15 miles southwest of the Mead Substation.

#### **QCA INTERCONNECTION INFORMATION**

Table 2 presents information on these two projects included in the QCA Study.

<b>TABLE 2 VEA QCA PROJECTS</b>				
<b>Queue Number</b>	<b>Point of Interconnection</b>	<b>Full Capacity Energy Only</b>	<b>Fuel</b>	<b>Capacity (MW)</b>
13	Crazy Eyes Tap 230-kV Substation	FC	Solar	540
14	Crazy Eyes Tap 230-kV Substation	FC	Solar	270
<b>Total QCA Generation</b>				<b>810</b>





The approximate locations of the QCA projects and the proposed Crazy Eyes Tap Substation are also depicted in Figure 1.

## **STUDY OBJECTIVES**

The QCA Phase I Study was performed to:

- Evaluate the impact of the interconnection requests on the VEA system and the CAISO-controlled grid in the EOP area.
- Preliminarily identify the system upgrades required to address the impacts of the interconnection requests on the VEA system and the CAISO-controlled grid in the EOP area.
- Preliminarily identify the interconnection facilities required for each interconnection request.
- Preliminarily identify the costs for the above identified upgrades and interconnection facilities.

## **STUDY ASSUMPTIONS**

### **Powerflow Base Cases**

The QCA Study base cases were developed from the on-peak and off-peak base cases used by Southern California Edison (SCE) and the CAISO in the QC4 studies for the East-of-Pisgah (EOP) area and reflected the generation dispatch assumptions applied in and the new transmission projects identified as part of the QC4 studies. The QC4 base cases were modified, as necessary, to create two “reference cases” in which:

- The model for the VEA system and its existing and planned interconnection points with the CAISO-controlled grid at Eldorado; the WAPA system at Mead and Amargosa, and the NV Energy system at Northwest and Jackass Flats was updated.
- The pertinent levels of on-peak and off-peak loads within the VEA system were modeled.
- The VEA system was “moved” into Area 24 (“SOCALIF”)<sup>11</sup> so as to facilitate the study effort.

The resultant “reference cases” were then modified to model the interconnection of the QCA projects with the VEA system at the Crazy Eyes Tap (and disconnecting a like amount of generation at the CAISO queue projects 714 and 740).

## **STUDY CRITERIA AND METHODOLOGY**

The applicable reliability criteria, which incorporate the Western Electricity Coordinating

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<sup>11</sup> All of the VEA facilities remained in powerflow zone 189.

Council (WECC) and the North American Electric Reliability Council (NERC) planning criteria, were used to evaluate the impact of QCA projects on the VEA system and on the CAISO Controlled Grid in the EOP area.

### **Steady State Study Criteria**

#### Normal Overloads

Normal overloads are those that exceed 100 percent of normal facility ratings. The CAISO Controlled Grid Reliability Criteria requires the loading of all transmission system facilities be within their normal ratings. Normal overloads refer to overloads that occur during normal operating conditions (no contingency).

#### Emergency Overloads

Emergency overloads are those that exceed 100 percent of emergency ratings. Emergency overloads refer to overloads that occur during single element contingencies (Category “B”) and multiple element contingencies (Category “C”).

#### Voltage Violations

Voltage violations will occur if voltage deviations exceed +/- 5% of the pre-disturbance level for Category B contingencies and +/- 10% for Category C contingencies.

#### Contingencies

The contingencies simulated during the Study included Category B and Category C contingencies on the VEA system and on the systems of the CAISO, NV Energy, and WAPA, and are listed in Appendix A.

### **RESULTS OF POWERFLOW STUDIES**

#### **Impacts on the VEA System**

##### Studies With No Additions or Upgrades

The initial step in identifying the system upgrades and additions required to facilitate the delivery of the QCA projects from the VEA system to the balance of the CAISO-controlled grid consisted of developing on-peak and off-peak powerflow cases with no upgrades or additions to the VEA system and assessing the resultant Category A loadings on the VEA system. As was expected, and as shown in Table 3, doing so resulted in several Category A overloads on VEA facilities.



<b>TABLE 3</b> <b>CATEGORY A OVERLOADS - EXISTING VEA SYSTEM</b>			
<b>Impacted Facilities</b>	<b>Rating<sup>12</sup> (Amps/ MVA)</b>	<b>On- Peak Loading (%)</b>	<b>Off- Peak Loading (%)</b>
Crazy Eyes Tap-Bob Tap 230-kV line	720	130	156
Crazy Eyes Tap-Pahrump 230-kV line	720	147	118
Pahrump #1 230/138-kV transformer	100	116	<90
Pahrump #2 230/138-kV transformer	100	110	<90

As a result of the above findings, several options (such as reconductoring the impacted 230-kV lines or developing a new 230-kV line between the Crazy Eyes Tap and the Eldorado area) were considered and analyzed. The “reconductoring” option was ultimately selected in that the amounts of time required to permit and construct a new 230-kV line would likely not allow such to be in-service to meet the projected in-service dates of the QCA projects. In addition, the reconductoring option appears to be as cost-effective as other options. As a result of this decision the post-QCA on-peak and off-peak base cases were modified to reflect reconductoring of the Pahrump-Crazy Eyes Tap, the Crazy Eyes Tap-Bob Tap, and the Bob Tap-Mead 230-kV line sections (a total of approximately 85 miles) with 3M “Drake” ACCR conductor. Use of this conductor would increase the ratings of these lines to approximately 700 MW (normal) and approximately 750 MW (emergency).

#### Studies With Pahrump-Mead 230-kV Line Sections Reconductored

VEA system overloads for Category A conditions and credible Category B and C contingencies simulated on the VEA system for the modified base cases are summarized in Tables 4 and 5. The only overloads on the VEA system due to outages on the system in the EOP area or for outages on the NVE or WAPA systems were on the Amargosa transformer due to an outage of the Harry Allen-Mead 500-kV line or the Jackass Flats-Lathrop Wells 138-kV line in the off-peak case. In both instances the noted overloads were less than 5%.

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<sup>12</sup> Amps for lines and MVA for transformers.

<b>TABLE 4</b> <b>RESULTS OF POWERFLOW STUDIES - PAHRUMP-MEAD RECONDUCTORED</b> <b>(ON-PEAK LOAD CONDITIONS)</b>			
<b>Contingency</b>	<b>Overloaded Facilities</b>	<b>Rating (Amps/ MVA)</b>	<b>Loading (%)</b>
<b>Category A (N-0)</b>	Pahrump #1 230/138-kV transformer	100	117
	Pahrump #2 230/138-kV transformer	100	110
<b>Category B</b>			
Crazy Eyes Tap-Bob Tap (L-1)	Crazy Eyes Tap-Pahrump 230-kV line	1,939	110
	Pahrump-Desert View 230-kV line	803	114
	Pahrump #1 230/138-kV transformer	112	153
	Pahrump #2 230/138-kV transformer	112	145
	Amargosa 230/138-kV transformer	66	163
	Pahrump-Gamebird 138-kV line	557	129
Crazy Eyes Tap-Pahrump (L-1)	Crazy Eyes Tap-Bob Tap 230-kV line	1,939	106
Pahrump-Desert View (L-1)	Amargosa 230/138-kV transformer	66	108
Pahrump #1 transformer (T-1)	Pahrump #2 230/138-kV transformer	112	180
Pahrump #2 transformer (T-1)	Pahrump #1 230/138-kV transformer	112	183
Pahrump-Gamebird (L-1)	Pahrump-Vista 138-kV line	557	107
Pahrump-Vista (L-1)	Pahrump-Gamebird 138-kV line	557	116
<b>Category C</b>			
Crazy Eyes Tap-Bob Tap & Gamebird-Sandy 138-kV (L-2)	Crazy Eyes Tap-Pahrump 230-kV line	1,939	112
	Pahrump-Desert View 230-kV line	803	140
	Pahrump #1 230/138-kV transformer	112	113
	Pahrump #2 230/138-kV transformer	112	107
	Valley Tap-Johnnie 138-kV line	557	103
	Pahrump-Vista 138-kV line	557	101
Crazy Eyes Tap-Pahrump & Pahrump-Gamebird (L-2)	Crazy Eyes Tap-Bob Tap 230-kV line	1,939	106
Pahrump-Desert View & Pahrump-Vista (L-2)	Pahrump #1 230/138-kV transformer	112	123
	Pahrump #2 230/138-kV transformer	112	117
	Pahrump-Gamebird 138-kV line	557	156
Pahrump-Desert View & Vista- Johnnie (L-2)	Amargosa 230/138-kV transformer	66	138
Crazy Eyes Tap-Pahrump & Pahrump #1 Transformer (BF)	Crazy Eyes Tap-Bob Tap 230-kV line	1,939	106
Pahrump-Desert View, Vista- Johnnie, & Vista-Charles. (L-3)	Amargosa 230/138-kV transformer	66	137
	Pahrump-Gamebird 138-kV line	557	111
Pahrump-Desert View, Vista- Pahrump, & Vista-Charles. (L3)	Amargosa 230/138-kV transformer	66	145
	Pahrump-Gamebird 138-kV line	557	115

<b>TABLE 5</b> <b>RESULTS OF POWERFLOW STUDIES - PAHRUMP-MEAD RECONDUCTORED</b> <b>(OFF-PEAK LOAD CONDITIONS)</b>			
<b>Contingency</b>	<b>Overloaded Facilities</b>	<b>Rating (Amps/ MVA)</b>	<b>Loading (%)</b>
<b>Category A (N-0)</b>	Amargosa 230/138-kV transformer	66	99
<b>Category B</b>			
Crazy Eyes Tap-Bob Tap (L-1)	Crazy Eyes Tap-Pahrump 230-kV line	1,939	109
	Pahrump-Desert View 230-kV line	803	131
	Pahrump #1 230/138-kV transformer	112	123
	Pahrump #2 230/138-kV transformer	112	114
	Amargosa 230/138-kV transformer	66	209
	Pahrump-Gamebird 138-kV line	557	127
	Gamebird-Sandy 138-kV line	557	110
	Gamebird-Amargosa 138-kV line	557	109
Crazy Eyes Tap-Pahrump (L-1)	Crazy Eyes Tap-Bob Tap 230-kV line	1,939	106
Pahrump-Desert View (L-1)	Amargosa 230/138-kV transformer	66	135
Pahrump #1 transformer (T-1)	Pahrump #2 230/138-kV transformer	112	114
Pahrump #2 transformer (T-1)	Pahrump #1 230/138-kV transformer	112	112
<b>Category C</b>			
Crazy Eyes Tap-Bob Tap & Gamebird-Sandy 138-kV (L-2)	Crazy Eyes Tap-Pahrump 230-kV line	1,939	114
	Pahrump-Desert View 230-kV line	803	165
	Valley Tap-Johnnie 138-kV line	557	113
	Lathrop Wells-Valley Tap 138-kV line	557	111
Crazy Eyes Tap-Pahrump & Pahrump-Gamebird (L-2)	Crazy Eyes Tap-Bob Tap 230-kV line	1,939	106
Pahrump-Desert View & Pahrump-Vista (L-2)	Pahrump-Gamebird 138-kV line	557	129
	Amargosa 230/138-kV transformer	66	136
Pahrump-Desert View & Vista- Johnnie (L-2)	Amargosa 230/138-kV transformer	66	162
Crazy Eyes Tap-Pahrump & Pahrump #1 Transformer (BF)	Crazy Eyes Tap-Bob Tap 230-kV line	1,939	106
Pahrump-Desert View, Vista- Johnnie, & Vista-Charles. (L-3)	Amargosa 230/138-kV transformer	66	161
Pahrump-Desert View, Vista- Pahrump, & Vista-Charles. (L3)	Amargosa 230/138-kV transformer	66	163

In addition to the above overloads on the VEA system, new overloads were noted on certain NV Energy 138-kV lines between VEA's Lathrop Wells Substation and NVE's Northwest Substation for the Category B and C outages involving the Crazy Eyes Tap-Bob Tap 230-kV line.

### Mitigation of Overloads

The information in Tables 4 and 5 indicates that a number of Category A and post-contingency overloads would exist on the VEA system even with the Pahrump-Mead 230-kV line segments reconductored. With respect to the post-contingency overloads noted on the reconductored Crazy Eyes Tap-Bob Tap and Crazy Eyes Tap-Pahrump lines, VEA has determined that the application of special protection schemes (SPS) which would drop one of the three QCA 270 MW units would be the most cost effective way of mitigating such. These SPS would be applied for the following Category B and Category C outages:

- Category B:
  - Crazy Eyes Tap-Bob Tap 230-kV line
  - Crazy Eyes Tap-Pahrump 230-kV line
- Category C:
  - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (common structure outage)
  - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line (common structure outage)
  - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump 230/138-kV transformer #1 (breaker failure).

The application of such SPS would also mitigate any other overloads resulting from these five outages.

Table 6 summarizes information regarding the proposed upgrades to the VEA system which would mitigate the overloads resulting from outages other than the five contingencies listed above.

<b>TABLE 6 PROPOSED UPGRADES</b>			
<b>Impacted Facility</b>	<b>Existing Ratings</b>	<b>Worst-case Overloads</b>	<b>Proposed Mitigation</b>
Pahrump #1 230/138-kV transformer	<ul style="list-style-type: none"><li>• 100 MVA (normal)</li><li>• 112 MVA (emergency)</li></ul>	<ul style="list-style-type: none"><li>• Category A – 17%</li><li>• Category B – 83%</li><li>• Category C – 23%</li></ul>	Replace with unit rated at 176 MVA (normal) and 220 MVA (emergency)
Pahrump #2 230/138-kV transformer	<ul style="list-style-type: none"><li>• 100 MVA (normal)</li><li>• 112 MVA (emergency)</li></ul>	<ul style="list-style-type: none"><li>• Category A – 10%</li><li>• Category B – 80%</li><li>• Category C – 17%</li></ul>	Replace with unit rated at 176 MVA (normal) and 220 MVA (emergency)
Amargosa 230/138-kV transformer	<ul style="list-style-type: none"><li>• 60 MVA (normal)</li><li>• 66 MVA (emergency)</li></ul>	<ul style="list-style-type: none"><li>• Category B – 35%</li><li>• Category C – 63%</li></ul>	Install 138-kV PST (75 MVA) at Gamebird (on line to Sandy/Amargosa to limit post-contingency flows through transformer

TABLE 6 (Con't) PROPOSED UPGRADES			
Impacted Facility	Existing Ratings	Worst-case Overloads	Proposed Mitigation
Pahrump-Vista 138-kV line	<ul style="list-style-type: none"> <li>• 418 Amps (normal)</li> <li>• 557 Amps (emergency)</li> </ul>	<ul style="list-style-type: none"> <li>• Category B – 7%</li> <li>• Category C – 1%</li> </ul>	Use of a PST at Gamebird to would also mitigate this overload
Pahrump-Gamebird 138-kV line	<ul style="list-style-type: none"> <li>• 418 Amps (normal)</li> <li>• 557 Amps (emergency)</li> </ul>	<ul style="list-style-type: none"> <li>• Category B – 16%</li> <li>• Category C – 56%</li> </ul>	Reconductor using ACCR conductor

Appendix B contains powerflow plots of the VEA system (and pertinent portions of the parallel systems) for the “Base Configuration” expansion plan (which reflects the upgrades and SPS assumptions discussed above) on-peak and off-peak base cases and for selected outages on these base cases.

#### Sensitivity Studies

Powerflow studies were also performed to assess the degree to which the impacts noted above could be reduced if a second 230-kV line was developed between the Pahrump area and NVE’s Northwest Substation and was extended to the Crazy Eyes Tap via a new 230-kV line section. A majority of the additional circuit between the Pahrump area and Northwest could be installed on the double-circuit structures being installed for the Pahrump-Northwest 230-kV line. These studies indicated that the addition of a second 230-kV line to the Northwest Substation:

- Would not mitigate the need for the upgrades listed in Table 6.
- Would mitigate the need for SPS associated with the five Category B and C outages discussed above.
- Could require the use of an SPS to mitigate the impacts of a Category C outage of the Crazy Eyes Tap-Pahrump and Crazy Eyes-Desert View 230-kV lines if they were to share common structures or if they were in a common corridor without sufficient clearance between the two lines.

Powerflow plots of the VEA system (and pertinent portions of the parallel systems) for the “Expanded Configuration” (which reflects the addition of the second 230-kV line to Northwest) base case and for selected outages on this base case are contained in Appendix C.

#### **Impacts on the SCE System**

As noted above, Category B and C contingencies were simulated on the SCE 500-kV and 230-kV facilities located in the East-of-Pisgah (EOP) area on the on-peak and off-peak cases with

the VEA 230-kV line reconductoring modeled. These studies indicated, that as would be expected, “disconnecting” the QCA projects from the SCE system at Eldorado and interconnecting them with the VEA system had no impacts on the SCE system in the EOP area.

### **Impacts on Other Systems**

As discussed above, new overloads were noted on certain NV Energy 138-kV lines between VEA’s Lathrop Wells Substation and NVE’s Northwest Substation for the Category B and C outages involving the Crazy Eyes Tap-Bob Tap 230-kV line. These overloads would be mitigated by the proposed application of SPS for this outage. The simulation of numerous Category B and C outages on the NVE and WAPA systems did not indicate that the interconnection of the QCA generation with the VEA system had any negative impacts on the NVE and WAPA systems.

### **RESULTS OF DYNAMIC STABILITY STUDIES**

Transient stability analyses were conducted on both the QCA peak and off-peak base cases with the above noted upgrades modeled to ensure that the transmission system remains stable with the addition of QCA projects. These analyses assessed the impacts of the following outages:

- VEA System:
  - Category B outages:
    - Bob Tap-Mead South 230-kV line
    - Bob Tap-Eldorado 230-kV line
    - Crazy Eyes Tap-Bob Tap 230-kV line (without and with SPS)
    - Crazy Eyes Tap-Pahrump 230-kV line (without and with SPS)
    - Pahrump-Desert View 230-kV line
    - Desert View-Northwest 230-kV line
    - Crazy Eyes Tap-Q14 230-kV line
    - One Pahrump 230/138-kV transformer
  - Category C (common structure) outages:
    - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (without and with SPS)
    - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line (without and with SPS)
    - Pahrump-Desert View 230-kV line and Pahrump-Vista 138-kV line
    - Pahrump-Desert View 230-kV line, Vista-Johnnie 138-kV line, and Vista-Charleston 138-kV line
  - Category C (breaker failure) outage - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump 230/138-kV transformer #1 (without and with SPS)

- SCE System:
  - Category B outages:
    - Eldorado-Nipton #1 500-kV line
    - Nipton-Pisgah #2 500-kV line
    - Eldorado-McCullough 500-kV line
    - Eldorado-Mead South #1 230-kV line
    - Eldorado 500/230-kV transformer #1
  - Category C outage - Eldorado-Nipton #1 and #2 500-kV lines
- Other Systems – Category B outages:
  - Northwest-Lenzie 500-kV line
  - Harry Allen-Mead 500-kV line
  - Mead-Marketplace 500-kV line
  - Marketplace-McCullough 500-kV line
  - Mead-McCullough 230-kV line
  - Boulder City Tap-Amargosa 230-kV line
  - Northwest 230/138-kV transformer #1

The disturbance simulations were performed for a study period of 10 seconds and monitored bus voltages and frequencies at several key busses on the VEA system and on other systems and the generator angles of the QCA units and other units in southern Nevada. These simulations indicated that, with the addition of QCA projects and the identified upgrades in place:

- There would be no transient instability problems for the outages on the SCE system or for the outages on other systems listed above.
- There would be some stability issues (low bus voltages and/or frequencies or excessive angular changes at the QCA projects) for the following outages on the VEA system without the application of the proposed SPS:
  - Category B outages:
    - Crazy Eyes Tap-Bob Tap 230-kV line
    - Crazy Eyes Tap-Pahrump 230-kV line
  - Category C outages:
    - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line
    - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line
  - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump 230/138-kV transformer #1

Transient stability simulations also indicated that the above issues could be mitigated by the proposed SPS (dropping one of the three QCA units).

Transient stability plots for the critical outages on the VEA system for both peak and off-peak



load conditions are provided in Appendix D.

## RESULTS OF SHORT-CIRCUIT STUDIES

Short circuit studies were performed to determine the impact of interconnecting the QCA projects with the VEA system rather than with the CAISO-controlled grid at the Eldorado Substation. Because the required data for the SCE system is not publically available, these studies were performed using the PSLF model to estimate the three-phase short-circuit duties (SCD) at a number of busses on the VEA system and in the Eldorado area. Table 7 compares the results of the pre-QCA studies to the results of other studies and then compares the results of the pre- and post-QCA studies.

<b>TABLE 7</b> <b>RESULTS OF SHORT-CIRCUIT STUDIES</b> <b>(kA)</b>						
	Data Comparison			QCA Impacts		
	Other Studies <sup>13</sup>	Pre-QCA Case	Diff.	Pre-QCA Case	Post-QCA Case	Diff.
<b>VEA System Busses</b>						
Amargosa 138-kV	3.7	4.0	0.3	4.0	3.8	(0.2)
Bob Tap 230-kV	-----	-----	-----	-----	43.9	43.9
Crazy Eyes Tap 230-kV	-----	-----	-----	-----	11.4	11.4
Charleston 138-kV	4.0	3.9	(0.1)	3.9	4.8	0.9
Desert View 230-kV	25.3	25.2	(0.1)	25.2	25.7	0.2
Gamebird 138-kV	5.9	5.2	(0.7)	5.2	6.9	1.4
Lathrop Wells 138-kV	2.5	2.7	0.2	2.7	2.9	0.2
Pahrump 230-kV	4.9	5.1	0.2	5.1	8.1	3.0
Pahrump 138-kV	6.1	5.8	(0.3)	5.8	8.6	2.8
Sandy 138-kV	3.7	3.7	0.0	3.7	3.1	(0.6)
Thousandaire 138-kV	4.8	4.5	(0.3)	4.5	5.7	1.2
Valley Tap 138-kV	3.6	2.9	(0.7)	2.9	3.2	0.3
Vista 138-kV	4.5	4.5	0.0	4.5	5.7	1.2
<b>SCE System Busses</b>						
Eldorado 220-kV	74.6	61.2	(13.6)	61.2	64.3	3.1
Eldorado 2 220-kV	35.5	33.5	(2.0)	33.5	32.1	(1.4)
Eldorado 500-kV	63.6	49.2	(14.4)	49.2	48.4	(0.8)

The information summarized in Table 7 regarding estimated fault currents at the VEA busses indicates that:

- There are relatively small differences between the values in the previous “pre-project”

<sup>13</sup> Information for VEA busses are pre-project values from a previous system impact study for the Q13 project; that for SCE busses are post-QC4 values from the QC4 report for the East-of-Pisgah area.

studies done for the Q13 project and the “pre-QCA” values estimated in the QCA studies. It is noted that, in the previous Q13-related study, notes that all of the calculated fault currents are below the ratings of the existing equipment.

- The only significant differences between the pre-QCA and post-QCA fault levels are at the proposed Bob Tap and Crazy Eyes Tap substations and the equipment at these stations can be sized to accommodate the estimated fault currents.

With respect to the information for the three SCE busses summarized in Table 7:

- There are fairly significant differences between the values in the QC4 project study report and the “pre-QCA” values estimated in the QCA studies.
- Comparing the results of the pre- and post-QCA studies indicates that the interconnection of the QCA projects with the VEA system (which, in turn, has been assumed to be interconnected with the existing Eldorado 220-kV bus) would result in a 3.1 kA (5%) increase in the fault currents at the existing Eldorado 220-kV bus. Based on the results in the QC4 studies; an increase of this magnitude would likely be considered to be significant from the perspective of the capability of the equipment in the existing Eldorado 220-kV substation.

**Queue Cluster Alpha**  
**Phase 1 Interconnection Study Report**

**Study for the Valley Electric Association, Inc.**  
**Service Area**

**Appendix A**

**Contingency List**

**APPENDIX A**  
**VEA CLUSTER ALPHA STUDIES - CONTINGENCY LIST**

Cont. ID	CONTINGENCY DESCRIPTION
<b>VEA System</b>	
gen 1	Gen VEA Q13 G1 21.0 Unit ID 1
gen 2	Gen VEA Q14 G1 21.0 Unit ID 1
gen 3	Gen VEA Q13 G2 21.0 Unit ID 1
line 4	Line AMARGOSA 138.0 to Sandy 138.0 Circuit 1
line 5	Line BONDGDTP 138.0 to BEATTY 138.0 Circuit 1
line 6	Line BONDGDTP 138.0 to BONDGLD 138.0 Circuit 1
line 7	Line LTHRPWLS 138.0 to BONDGDTP 138.0 Circuit 1
line 8	Line JACKASSF 138.0 to LTHRPWLS 138.0 Circuit 1
line 9	Line PAHRUMP 138.0 to VISTA 138.0 Circuit 1
line 10	Line LTHRPWLS 138.0 to VALLEYTP 138.0 Circuit 1
line 11	Line VALLEYVE 138.0 to VALLEYTP 138.0 Circuit 1
line 12	Line PAHRUMP 138.0 to GAMEBIRD 138.0 Circuit 1
line 13	Line GAMEBIRD 138.0 to THSNDIAIR 138.0 Circuit 1
line 14	Line GAMEBIRD 138.0 to GAMEBIRD PST 138.0 Circuit bp
line 15	Line THSNDIAIR 138.0 to CHARLSTN 138.0 Circuit 1
line 16	Line VISTA 138.0 to CHARLSTN 138.0 Circuit 1
line 17	Line MEAD S 230.0 to BOB TAP 230.0 Circuit 1
line 18	Line ELDORDO 230.0 to BOB TAP 230.0 Circuit 1
line 19	Line NWEST 230.0 to DESERT VIEW 230.0 Circuit 1
line 20	Line Sandy 138.0 to GAMEBIRD 138.0 Circuit 1
line 21	Line Sandy 138.0 to GAMEBIRD PST 138.0 Circuit 1
line 22	Line VALLEYTP 138.0 to JOHNNIE 138.0 Circuit 1
line 23	Line VISTA 138.0 to JOHNNIE 138.0 Circuit 1
line 24	Line PAHRUMP 1 230.0 to DESERT VIEW 230.0 Circuit 1
line 25	Line PAHRUMP 1 230.0 to BOB TAP 230.0 Circuit 1
line 26	Line PAHRUMP 1 230.0 to CRAZY EYE TP 230.0 Circuit 1
line 27	Line CRAZY EYE TP 230.0 to BOB TAP 230.0 Circuit 1
line 28	Line CRAZY EYE TP 230.0 to VEA Q13 230.0 Circuit 1
line 29	Line CRAZY EYE TP 230.0 to VEA Q14 230.0 Circuit 1
tran 30	Tran AMARGOSA 230.00 to AMARGOSA 138.00 Circuit 1
tran 31	Tran PAHRUMP 1 230.00 to PAHRUMP 138.00 Circuit 1
tran 32	Tran PAHRUMP 1 230.00 to PAHRUMP 138.00 Circuit 2
tran 33	Tran GAMEBIRD 138.00 to GAMEBIRD PST 138.00 Circuit ps
line 34	ComStruc VISTA-PAHRUMP 138 & PAHRUMP-DESERT VIEW 230 & VISTA-CHAS 138
line 35	ComStruc VISTA-JOHNIE 138 & PAHRUMP-DESERT VIEW 230
line 36	ComStruc VISTA-JOHNIE 138 & PAHRUMP-DESERT VIEW 230 & VISTA-CHAS 138
line 37	ComStruc PAHRUMP-VISTA 138 & PAHRUMP-DESERT VIEW 230
line 38	ComStruc PAHRUMP-CRAZY EYE TP 230 & PAHRUMP-GAMEBIRD 138
line 39	ComStruc CRAZY EYE TP-BOB TAP 230 & GMBD-GMBD PS-Sandy 138
line 40	Bus Fault CHARLSTN-VISTA 138 & CHARLSTN-THSNDIAIR 138
line 41	Bus Fault THSNDIAIR-CHARLSTN 138 & THSNDIAIR-GAMEBIRD 138
line 42	Bus Fault Sandy-AMARGOSA 138 & Sandy-GAMEBD 138
line 43	Bus Fault Sandy-AMARGOSA 138 & Sandy-GAMEBD-GMBD PS 138
line 44	Bus Fault LTHWLS-JKASSF 138 & LTHWLS-BNDGDT 138 & LTHWLS-VLYTP
line 45	Bus Fault VLYTP-LTHWLS 138 & VLYTP-VLYVE & VLYTP-JOHNIE 138
line 46	Brkr Fail GAMEBIRD-PAHRUMP 138 & GAMEBIRD 138-Sandy 138
line 47	Brkr Fail GAMEBIRD-PAHRUMP 138 & GAMEBIRD 138-GAMEBD PH-SH 138
line 48	Brkr Fail PAHRUMP 138/230kV Tran Bnk 1 & PAHRUMP - BOB TAP 230
line 49	Brkr Fail PAHRUMP 138/230kV Tran Bnk 1 & PAHRUMP - CRAZY EYE TP 230
line 50	Brkr Fail PAHRUMP 138/230kV Transformer BNK 2 & PAHRUMP-VISTA 138
line 51	Brkr Fail PAHRUMP-VISTA 138 & PAHRUMP-GAMEBIRD 138
line 52	Brkr Fail PAHRUMP 138/230kV Tran Bnk 1 & PAHRUMP-GAMEBIRD 138
line 53	Brkr Fail PAHRUMP 138/230kV Tran Bnk 1 & PAHRUMP LD1 & PAHRUMP LD2
line 54	Brkr Fail PAHRUMP 138/230kV Tran Bnk 2 & PAHRUMP LD1 & PAHRUMP LD2

**APPENDIX A**  
**VEA CLUSTER ALPHA STUDIES - CONTINGENCY LIST**

Cont. ID	CONTINGENCY DESCRIPTION
line 55	Bus Fault VISTA LD1 & VISTA-PAHRUMP 138
line 56	Brkr Fail VISTA LD1 & VISTA-JOHNIE 138
line 57	Brkr Fail VISTA-PAHRUMP 138 & VISTA-CHARLESTON 138
line 58	Brkr Fail VISTA-CHARLESTON 138 & VISTA-JOHNIE 138
line 59	Brkr Fail CHARLSTN-VISTA 138 & CHARLSTN-THSNDIAIR 138
line 60	Brkr Fail LTHWLS-JKASSF 138 & LTHWLS-BDGD 138 & LTHWLS-VLYT 138
line 61	Brkr Fail VLYTP-LTHWLS 138 & VLYTP-VLYVE 138 & VLYTP-JOHNIE 138
<b>SCE System</b>	
line 62	Line MOENKOP 500.0 to ELDORDO 500.0 Ckt 1
line 63	Line PALOVRDE 500.0 to ClrdoRvr 500.0 Ckt 1
line 64	Line ClrdoRvr 500.0 to RedBluff 500.0 Ckt 1
line 65	Line DEVERS 500.0 to RedBluff 500.0 Ckt 1
line 66	Line PISGAH 230.0 to TOT131TP 230.0 Ckt 1
line 67	Line PISGAH 500.0 to LUGO 500.0 Ckt 1
line 68	Line PISGAH 500.0 to LUGO 500.0 Ckt 2
line 69	Line ELDORDO 500.0 to NIPTON 500.0 Ckt 1
line 70	Line ELDORDO 500.0 to NIPTON 500.0 Ckt 2
line 71	Line ELDORDO 500.0 to NIPTON 500.0 Ckt 3
line 72	Line PISGAH 500.0 to NIPTON 500.0 Ckt 1
line 73	Line PISGAH 230.0 to TOT214 230.0 Ckt 1
line 74	Line TOT245SS 230.0 to PISGAH 230.0 Ckt 1
line 75	Line ClrdoRvr 500.0 to RedBluff 500.0 Ckt 2
line 76	Line ClrdoRvr 500.0 to RedBluff 500.0 Ckt 3
line 77	Line DEVERS 500.0 to RedBluff 500.0 Ckt 2
line 78	Line PRIMM 230.0 to IVANPAH 230.0 Ckt 1
line 79	Line PRIMM 230.0 to ELDORDO2 230.0 Ckt 1
line 80	Line PRIMM 230.0 to TC08SC68 230.0 Ckt 1
line 81	Line ELDORDO2 230.0 to TOT394 230.0 Ckt 1
line 82	Line LUGO 500.0 to PISGAH 500.0 Ckt 3
line 83	Line MOHAVE 500.0 to TOT448AH 500.0 Ckt 1
line 84	Line ELDORDO2 230.0 to TOT457H 230.0 Ckt 1
line 85	Line ELDORDO2 230.0 to TOT457H 230.0 Ckt 2
line 86	Line PISGAH 500.0 to NIPTON 500.0 Ckt 2
line 87	Line IVANPAH 230.0 to NIPTON 230.0 Ckt 1
line 88	Line IVANPAH 230.0 to NIPTON 230.0 Ckt 2
line 89	Line ELDORDO2 230.0 to TOT487S 230.0 Ckt 1
line 90	Line PISGAH 500.0 to MOHAVE 500.0 Ckt 1
line 91	Line ELDORDO 230.0 to MAGNOLIA 230.0 Ckt 1
line 92	Line NSO 230.0 to ELDORDO 230.0 Ckt 1
line 93	Line MCCULLGH 230.0 to NSO 230.0 Ckt 1
line 94	Line HS-CM92 230.0 to COPPERMTN 230.0 Ckt 1
line 95	Line PISGAH 500.0 to RANCHVST 500.0 Ckt 1
line 96	Line PISGAH 500.0 to NIPTON 500.0 Ckt 3
line 97	Line PISGAH 500.0 to SERRANO 500.0 Ckt 1
line 98	Line MERCHANT2 230.0 to ELDORDO2 230.0 Ckt 2
line 99	Line MERCHANT2 230.0 to TC08SC14 230.0 Ckt 1
line 100	Line MERCHANT2 230.0 to TOT404 230.0 Ckt 1
line 101	Line MERCHANT2 230.0 to COPPERMTN 230.0 Ckt 1
line 102	Line CAMINO 230.0 to MEAD S 230.0 Ckt E
line 103	Line CAMINO 230.0 to MEAD S 230.0 Ckt W
line 104	Line ELDORDO 500.0 to MCCULLGH 500.0 Ckt 1
line 105	Line MOHAVE 500.0 to ELDORDO 500.0 Ckt 1
line 106	Line PISGAH 230.0 to ELDORDO 230.0 Ckt 2
line 107	Line PISGAH 230.0 to CIMA 230.0 Ckt 1
line 108	Line CIMA 230.0 to ELDORDO 230.0 Ckt 1

# **APPENDIX A** **VEA CLUSTER ALPHA STUDIES - CONTINGENCY LIST**

Cont. ID	CONTINGENCY DESCRIPTION
tran 109	Tran ELDORDO 500.00 to ELDORDO 230.00 Bnk 1
tran 110	Tran ELDORDO 500.00 to ELDORDO 230.00 Bnk 2
tran 111	Tran MCCULLGH 500.00 to MCCULLGH 230.00 Bnk 1
tran 112	Tran MCCULLGH 500.00 to MCCULLGH 230.00 Bnk 2
tran 113	Tran MCCULLGH 500.00 to MCCULLGH 230.00 Bnk 3
tran 114	Tran PISGAH 500.00 to PISGAH 230.00 Bnk 1
tran 115	Tran PISGAH 500.00 to PISGAH 230.00 Bnk 2
tran 116	Tran ELDORDO 500.00 to ELDORDO2 230.00 Bnk 1
tran 117	Tran ELDORDO 500.00 to ELDORDO2 230.00 Bnk 2
tran 118	Tran ELDORDO 500.00 to ELDORDO2 230.00 Bnk 3
tran 119	Tran NIPTON 500.00 to NIPTON 230.00 Bnk 2
tran 120	Tran RedBluff 500.00 to RedBluff 230.00 Bnk 1
line 121	Line ELDORDO -NIPTON 500.00 1 & 2 Lines
line 122	Line PISGAH -LUGO 500.00 1 & 2 Lines
line 123	Line PISGAH -NIPTON 500.00 1 & 2 Lines
line 124	Line DEVERS -RedBluff 500.00 1 & 2 Lines
line 125	Line ClrdoRvr -RedBluff 500.00 1 & 2 Lines
line 126	Line LUGO-MIRALOMA 500kV Line 2 & LUGO-RANCHVST 500kV Line 1
line 127	Line LUGO-MIRALOMA 500kV Line 2 & 3
line 128	Line LUGO-VINCENT 500kV Line 1 & LLANO-VINCENT 500kV Line 1
line 129	Line MIDWAY-VINCENT 500kV Line 1 & 2
line 130	Line PISGAH-SERRANO 500kV Line 1 & PISGAH-RANCHVST 500kV Line 1
line 131	Line LUGO-MIRALOMA 500kV Line 2 & 3
line 132	Line LUGO-VINCENT 500kV Line 1 & LUGO-LLANO 500kV Line 1
<b>Other Systems</b>	
line 133	Line ARDEN 230.0 to BIGHORN 230.0 Ckt 2
line 134	Line CRYSTAL 500.0 to MCCULLGH 500.0 Ckt 1
line 135	Line ARDEN 230.0 to MGM-CC 230.0 Ckt 1
line 136	Line BASIC 230.0 to HENDRSON 230.0 Ckt 1
line 137	Line BASIC 230.0 to HENDRSON 230.0 Ckt 2
line 138	Line HENDRSON 230.0 to MEAD N 230.0 Ckt 1
line 139	Line BELTWAY 230.0 to ARDEN 230.0 Ckt 2
line 140	Line CLARK 6 to FAULKNER 230kV Ckt 1 & Clark 138/230kV Xfmr
line 141	Line CLARK E 230.0 to HENDRSON 230.0 Ckt 1
line 142	Line CLARK W 230.0 to HENDRSON 230.0 Ckt 1
line 143	Line CRYSTAL 230.0 to H ALLEN 230.0 Ckt 2
line 144	Line NAVAJO 500.0 to CRYSTAL 500.0 Ckt 1
line 145	Line CRYSTAL 230.0 to H ALLEN 230.0 Ckt 3
line 146	Line DECATUR 230.0 to ARDEN 230.0 Ckt 1
line 147	Line MCCULLGH -VICTORVL 500.00 1 & 2 Lines
line 148	Line DECATUR 230.0 to WESTSIDE 230.0 Ckt 1
line 149	Line DECATUR 230.0 to MCDONLD 230.0 Ckt 1
line 150	Line DECATUR 230.0 to MGM-CC 230.0 Ckt 1
line 151	Line TOLSON 230.0 to FAULKNER 230.0 Ckt 1
line 152	Line TOLSON 230.0 to MCCULLGH 230.0 Ckt 1
line 153	Line FAULKNER to WINTERWD 230kV Ckt 1 & WINTERWD 138/230kV Xfmr
line 154	Line H ALLEN 230.0 to PECOS 230.0 Ckt 1
line 155	Line H ALLEN 230.0 to PECOS 230.0 Ckt 2
line 156	Line HASSYAMP 500.0 to N.GILA 500.0 Ckt 1
line 157	Line H ALLEN 230.0 to PECOS 230.0 Ckt 3
line 158	Line IRONMTN 230.0 to N WEST 230.0 Ckt 1
line 159	Line IRONMTN 230.0 to PECOS 230.0 Ckt 1
line 160	Line IRONMTN 230.0 to GRTETON 230.0 Ckt 1
line 161	Line IRONMTN 230.0 to IM RAIN 230.0 Ckt 1
line 162	Line NEWPORT 230.0 to EASTSIDE 230.0 Ckt Z

**APPENDIX A**  
**VEA CLUSTER ALPHA STUDIES - CONTINGENCY LIST**

Cont. ID	CONTINGENCY DESCRIPTION
line 163	Line N WEST 230.0 to BELTWAY 230.0 Ckt 2
line 164	Line N WEST 230.0 to AVERA 230.0 Ckt 1
line 165	Line N WEST 230.0 to WESTSIDE 230.0 Ckt 1
line 166	Line N WEST 230.0 to IM RAIN 230.0 Ckt 1
line 167	Line H ALLEN to REDBUTTE 345kV Ckt 1 & H ALLEN 345kV PS
line 168	Line RD GDNR 230.0 to H ALLEN 230.0 Ckt 1
line 169	Line RD GDNR 230.0 to H ALLEN 230.0 Ckt 2
line 170	Line RD GDNR 230.0 to TORTISE 230.0 Ckt 1
line 171	Line MCDONLD 230.0 to ARDEN 230.0 Ckt 1
line 172	Line BC TAP 230.0 to AMARGOSA 230.0 Ckt 1
line 173	Line BC TAP 230.0 to BC TAPN 230.0 Ckt 1
line 174	Line BC TAP 230.0 to MEAD N 230.0 Ckt 1
line 175	Line GRTETON 230.0 to H ALLEN 230.0 Ckt 1
line 176	Line SLHWK 500.0 to H ALLEN 500.0 Ckt 1
line 177	Line LENZIE 500.0 to LENZ CB1 500.0 Ckt 1
line 178	Line AMARGOSA 230.0 to HENDRSON 230.0 Ckt 1
line 179	Line LENZIE 500.0 to LENZ CB2 500.0 Ckt 1
line 180	Line LENZIE 500.0 to N WEST 500.0 Ckt 1
line 181	Line MIRANT 500.0 to H ALLEN 500.0 Ckt 1
line 182	Line H ALLEN 500.0 to LENZIE 500.0 Ckt 1
line 183	Line H ALLEN 500.0 to LENZIE 500.0 Ckt 2
line 184	Line H ALLEN to CRSTL N 500kV Ckt 1 & CRYSTAL 500kV PS1 & PS2
line 185	Line H ALLEN 500.0 to MEAD 500.0 Ckt 1
line 186	Line NSO 230.0 to SOEAST1 230.0 Ckt 1
line 187	Line EQUEST 230.0 to FAULKNER 230.0 Ckt 1
line 188	Line MERCHANT 230.0 to ELDORDO 230.0 Ckt 1
line 189	Line ARDEN 230.0 to TOLSON 230.0 Ckt 1
line 190	Line GREENWAY 230.0 to FAULKNER 230.0 Ckt 1
line 191	Line SOEAST1 230.0 to MAGNOLIA 230.0 Ckt 1
line 192	Line MEAD N 230.0 to ARDEN 230.0 Ckt 1
line 193	Line MEAD N 230.0 to EASTSIDE 230.0 Ckt 1
line 194	Line MEAD N 230.0 to NEWPORT 230.0 Ckt 1
line 195	Line MEAD N 230.0 to EQUEST 230.0 Ckt 2
line 196	Line MEAD N 230.0 to HVRA3A4 230.0 Ckt 1
line 197	Line MEAD S 230.0 to EQUEST 230.0 Ckt 1
line 198	Line MEAD S 230.0 to GREENWAY 230.0 Ckt 1
line 199	Line MEAD S 230.0 to MEAD N 230.0 Ckt 1
line 200	Line ARDEN 230.0 to AVERA 230.0 Ckt 1
line 201	Line MEAD S 230.0 to ELDORDO 230.0 Ckt 1
line 202	Line MEAD S 230.0 to ELDORDO 230.0 Ckt 2
line 203	Line MEAD S 230.0 to MCCULLGH 230.0 Ckt 1
line 204	Line MEAD S 230.0 to MCCULLGH 230.0 Ckt 2
line 205	Line DAVIS 230.0 to MEAD N 230.0 Ckt 1
line 206	Line DAVIS 230.0 to MCCULLGH 230.0 Ckt 1
line 207	Line HOVRA5A6 230.0 to MEAD S 230.0 Ckt 1
line 208	Line HOVRA7-9 230.0 to MEAD S 230.0 Ckt 1
line 209	Line MEAD 500.0 to PERKINS 500.0 Ckt 1
line 210	Line MEAD 500.0 to MARKETPL 500.0 Ckt 1
line 211	Line ARDEN 230.0 to MAGNOLIA 230.0 Ckt 1
line 212	Line HOVRN7N8 230.0 to MEAD S 230.0 Ckt 1
line 213	Line HOVRN5N6 230.0 to MEAD S 230.0 Ckt 1
line 214	Line HOVRN3N4 230.0 to MEAD S 230.0 Ckt 1
line 215	Line HOVRN1N2 230.0 to MEAD S 230.0 Ckt 1
line 216	Line HOVRA1A2 230.0 to MEAD S 230.0 Ckt 1
line 217	Line PEACOCK 345.0 to MEAD 345.0 Ckt 1



**APPENDIX A**  
**VEA CLUSTER ALPHA STUDIES - CONTINGENCY LIST**

Cont. ID	CONTINGENCY DESCRIPTION
line 218	Line LUGO 500.0 to VICTORVL 500.0 Ckt 1
line 219	Line ARDEN 230.0 to BIGHORN 230.0 Ckt 1
line 220	Line MARKETPL 500.0 to ADELANTO 500.0 Ckt 1
line 221	Line MARKETPL 500.0 to MCCULLGH 500.0 Ckt 1
line 222	Line MCCULLGH 230.0 to FAULKNER 230.0 Ckt 1
line 223	Line MCCULLGH 500.0 to VICTORVL 500.0 Ckt 1
line 224	Line MCCULLGH 500.0 to VICTORVL 500.0 Ckt 2
line 225	Line MEAD to VICTORVL 287kV Ckt 1 & Mead 230/287kV Xfmr Bnk 1
tran 226	Tran ARDEN 230.00 to ARDEN 138.00 Bnk 1
tran 227	Tran ARDEN 230.00 to ARDEN 138.00 Bnk 2
tran 228	Tran BELTWAY 230.00 to BELTWAY 138.00 Bnk 1
tran 229	Tran CRYSTAL 500.00 to CRYSTAL 230.00 Bnk 2
tran 230	Tran CRYSTAL 500.00 to CRYSTAL 230.00 Bnk 3
tran 231	Tran DECATUR 230.00 to DECATUR 138.00 Bnk 1
tran 232	Tran TOLSON 230.00 to TOLSON 138.00 Bnk 1
tran 233	Tran FAULKNER 230.00 to FAULKNER 138.00 Bnk 1
tran 234	Tran IRONMTN 230.00 to IRONMTN 138.00 Bnk 1
tran 235	Tran IRONMTN 230.00 to IRONMTN 138.00 Bnk 2
tran 236	Tran NWEST 230.00 to NWEST 138.00 Bnk 1
tran 237	Tran NWEST 230.00 to NWEST 138.00 Bnk 2
tran 238	Tran PECOS 230.00 to PECOS 138.00 Bnk 1
tran 239	Tran PECOS 230.00 to PECOS 138.00 Bnk 2
tran 240	Tran PECOS 230.00 to PECOS 138.00 Bnk 3
tran 241	Tran PECOS 230.00 to PECOS 138.00 Bnk 4
tran 242	Tran AVERA 230.00 to AVERA 138.00 Bnk 1
tran 243	Tran WESTSIDE 230.00 to WESTSIDE 138.00 Bnk 1
tran 244	Tran MAGNOLIA 230.00 to MAGNOLIA 138.00 Bnk 1
tran 245	Tran MCDONLD 230.00 to MCDONLD 138.00 Bnk 1
tran 246	Tran NWEST 500.00 to NWEST 230.00 Bnk 1
tran 247	Tran MGM-CC 230.00 to MGM-CC 138.00 Bnk 1
tran 248	Tran MEAD 345.00 to MEAD N 230.00 Bnk 1
tran 249	Tran MEAD 500.00 to MEAD N 230.00 Bnk 1
tran 250	Tran MEAD 500.00 to MEAD N 230.00 Bnk 2
line 251	Common Corridor MED-PES & MED-PCK
line 252	Common Corridor MED-PES & PCK-LIB
line 253	Bus Fault DAVIS Sub 230kV West Bus (Main & Transfer)
line 254	Bus Fault DAVIS Sub 230kV East Bus (Main & Transfer)
line 255	Breaker Failure DAD1582 Davis 230kV
line 256	Breaker Failure PCK692 Peacock 345kV
line 257	Breaker Failure PCK192 Peacock 345kV

**Queue Cluster Alpha**  
**Phase 1 Interconnection Study Report**

**Study for the Valley Electric Association, Inc.**  
**Service Area**

**Appendix B**

**Power Flow Plots – Base Configuration**

## **Base Configuration – Plot List**

### On-Peak Studies

Figure 1 - Base Case

Figure 2 - Crazy Eyes Tap-Bob Tap 230-kV line (w/o SPS)

Figure 3 - Crazy Eyes Tap-Bob Tap 230-kV line (w/ SPS)

Figure 4 - Crazy Eyes Tap-Pahrump 230-kV line (w/o SPS)

Figure 5 - Crazy Eyes Tap-Pahrump 230-kV line (w/ SPS)

Figure 6 - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (w/o SPS)

Figure 7 - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (w/ SPS)

Figure 8 - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line (w/o SPS)

Figure 9 - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line (w/ SPS)

### Off-Peak Studies

Figure 10 - Base Case

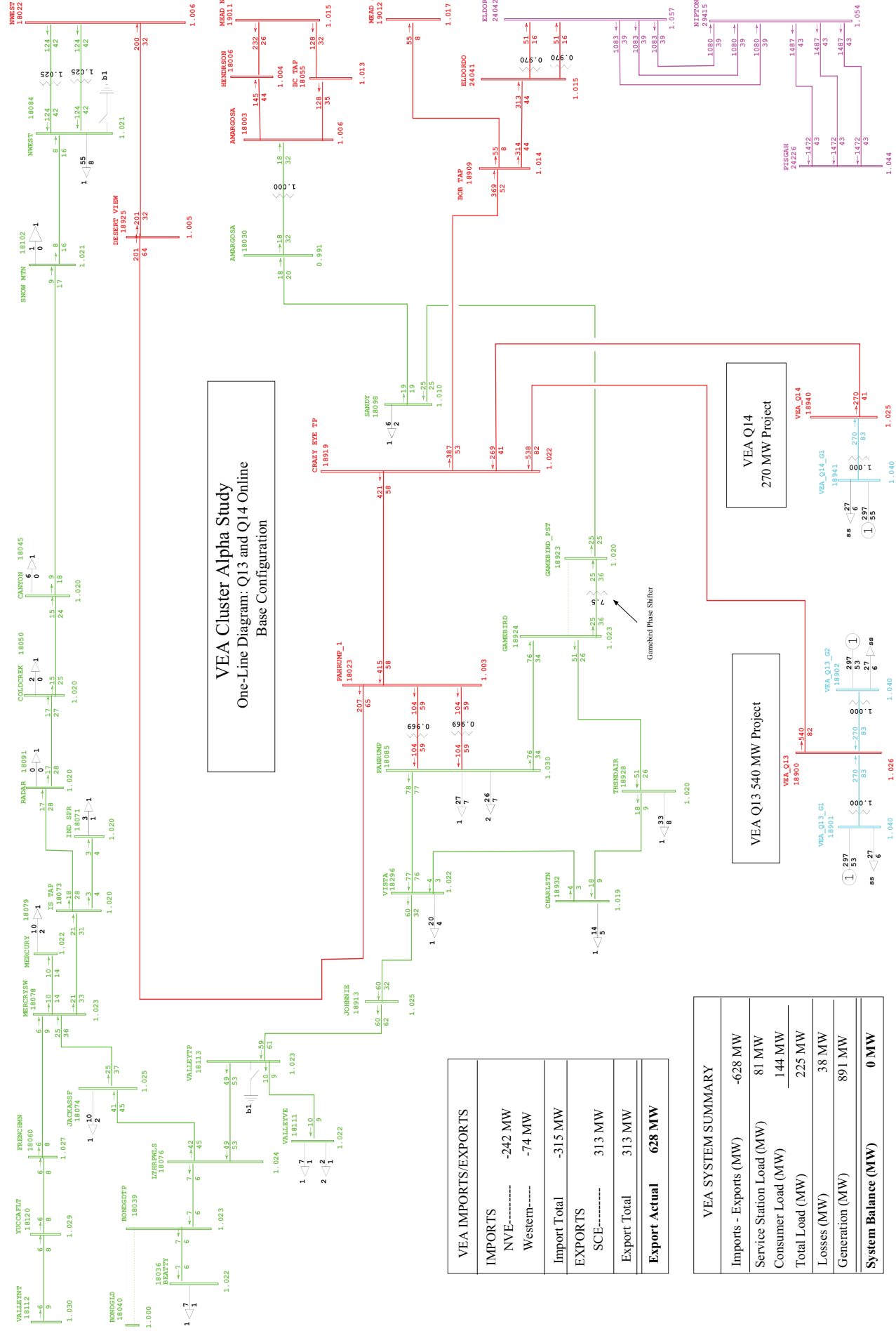
Figure 11 - Crazy Eyes Tap-Bob Tap 230-kV line (w/ SPS)

Figure 12 - Crazy Eyes Tap-Pahrump 230-kV line (w/ SPS)

Figure 13 - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (w/ SPS)

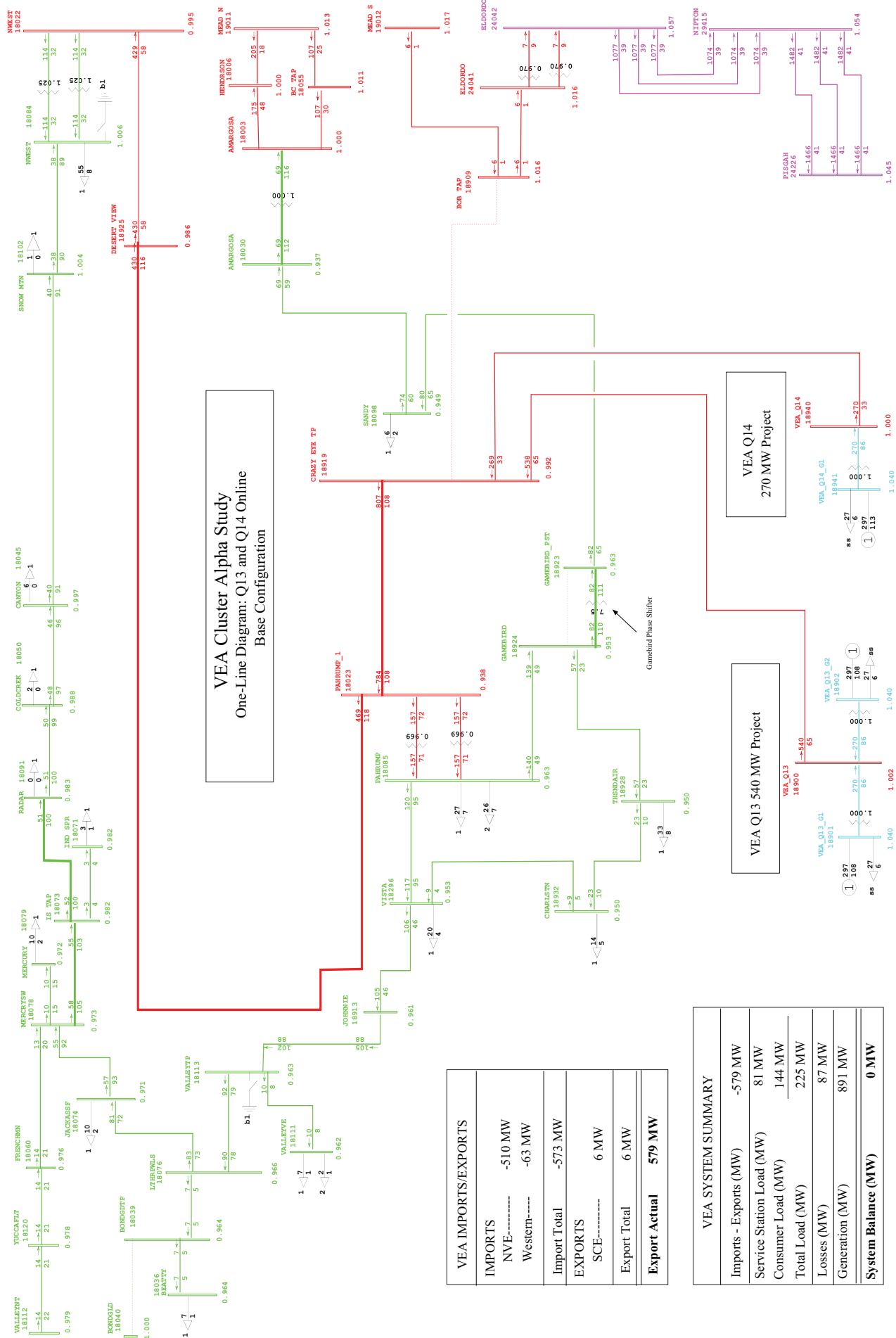
Figure 14 - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line (w/ SPS)

## Figure 1 - On-Peak Base Case



VEA SYSTEM SUMMARY	
Imports - Exports (MW)	-628 MW
Service Station Load (MW)	81 MW
Consumer Load (MW)	144 MW
Total Load (MW)	225 MW
Losses (MW)	38 MW
Generation (MW)	891 MW
<b>System Balance (MW)</b>	<b>0 MW</b>

Figure 2 - Crazy Eyes Tap-Bob Tap Outage (w/o SPS)



VEA IMPORTS/EXPORTS	
IMPORTS	
NVE-----	-510 MW
Western----	-63 MW
Import Total	-573 MW
EXPORTS	
SCE-----	6 MW
Export Total	6 MW
Export Actual	579 MW

VEA SYSTEM SUMMARY	
Imports - Exports (MW)	-579 MW
Service Station Load (MW)	81 MW
Consumer Load (MW)	144 MW
Total Load (MW)	225 MW
Losses (MW)	87 MW
Generation (MW)	891 MW
System Balance (MW)	0 MW

Figure 3 - Crazy Eyes Tap-Bob Tap Outage (w/ SPS)

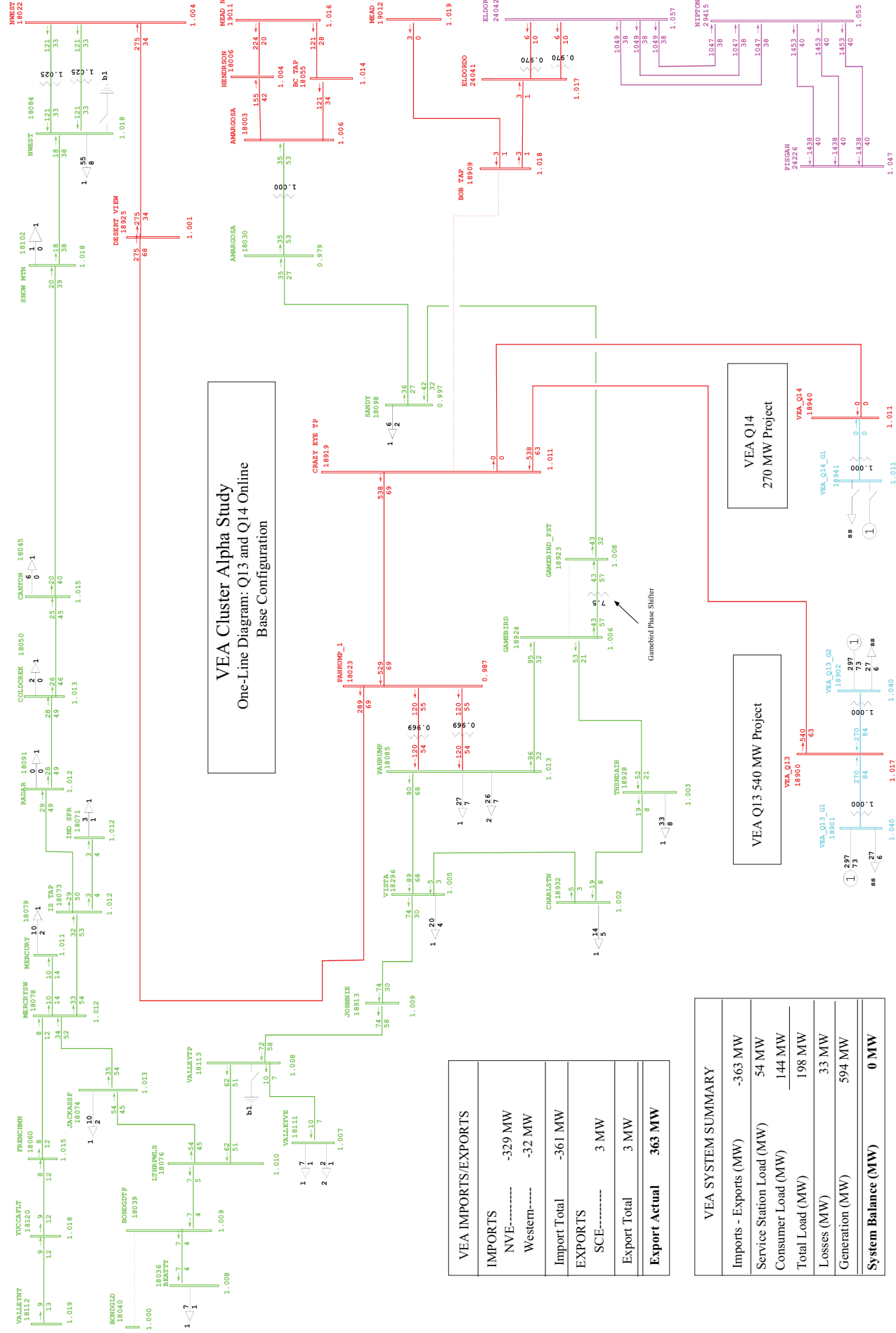


Figure 4 - Crazy Eyes Tap-Pahrump Outage (w/o SPS)

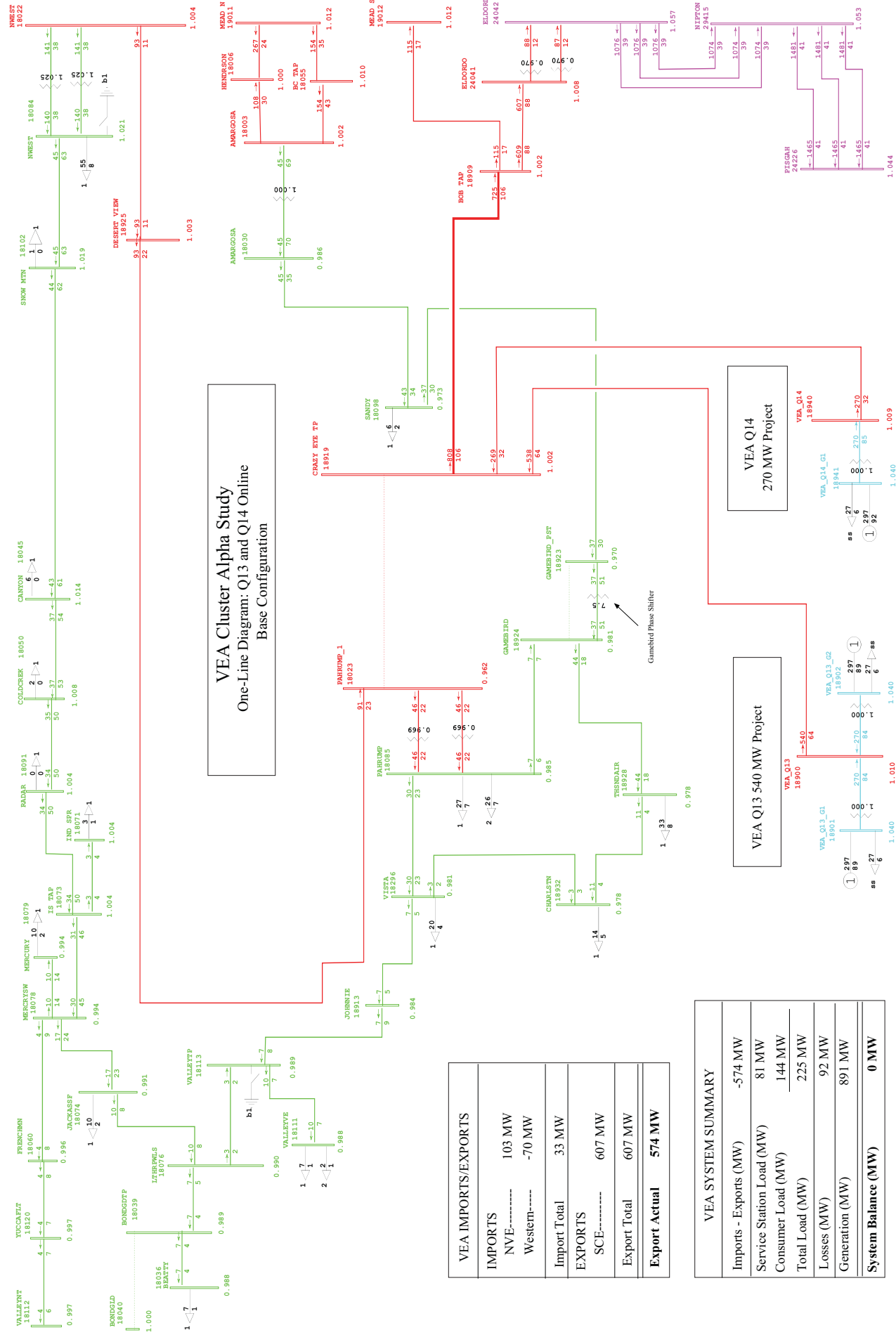
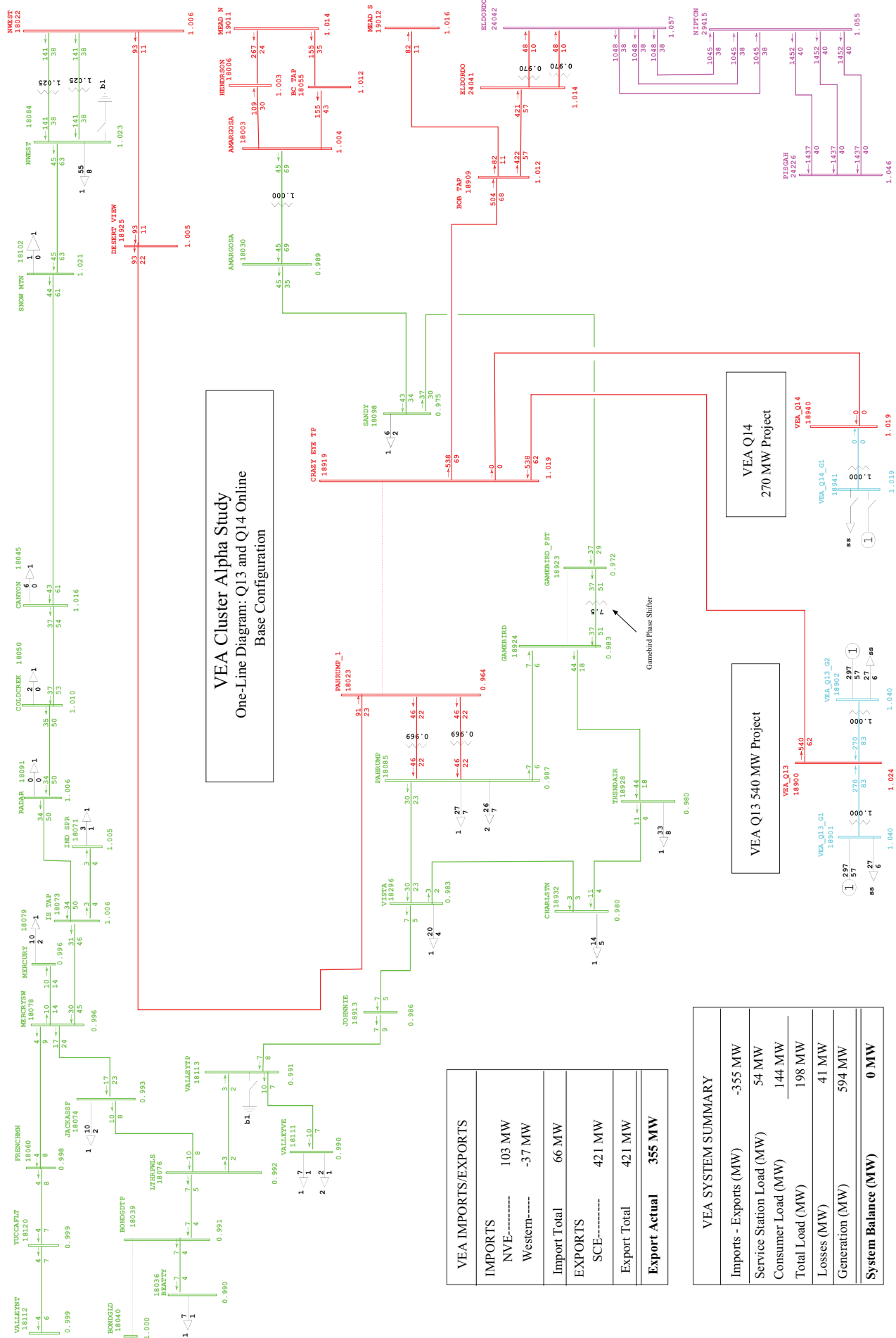




Figure 5 - Crazy Eyes Tap-Pahrump Outage (w/ SPS)



VEA IMPORTS/EXPORTS	
IMPORTS	
NVE-----	103 MW
Western----	-37 MW
Import Total	66 MW
EXPORTS	
SCE-----	421 MW
Export Total	421 MW
Export Actual	355 MW

VEA SYSTEM SUMMARY	
Imports - Exports (MW)	-355 MW
Service Station Load (MW)	54 MW
Consumer Load (MW)	144 MW
Total Load (MW)	198 MW
Losses (MW)	41 MW
Generation (MW)	594 MW
System Balance (MW)	0 MW

VEA Cluster Alpha Study  
One-Line Diagram: Q13 and Q14 Online  
Base Configuration

Figure 6 - Crazy Eyes Tap-Bob Tap and Gamebird-Sandy Outage (w/o SPS)

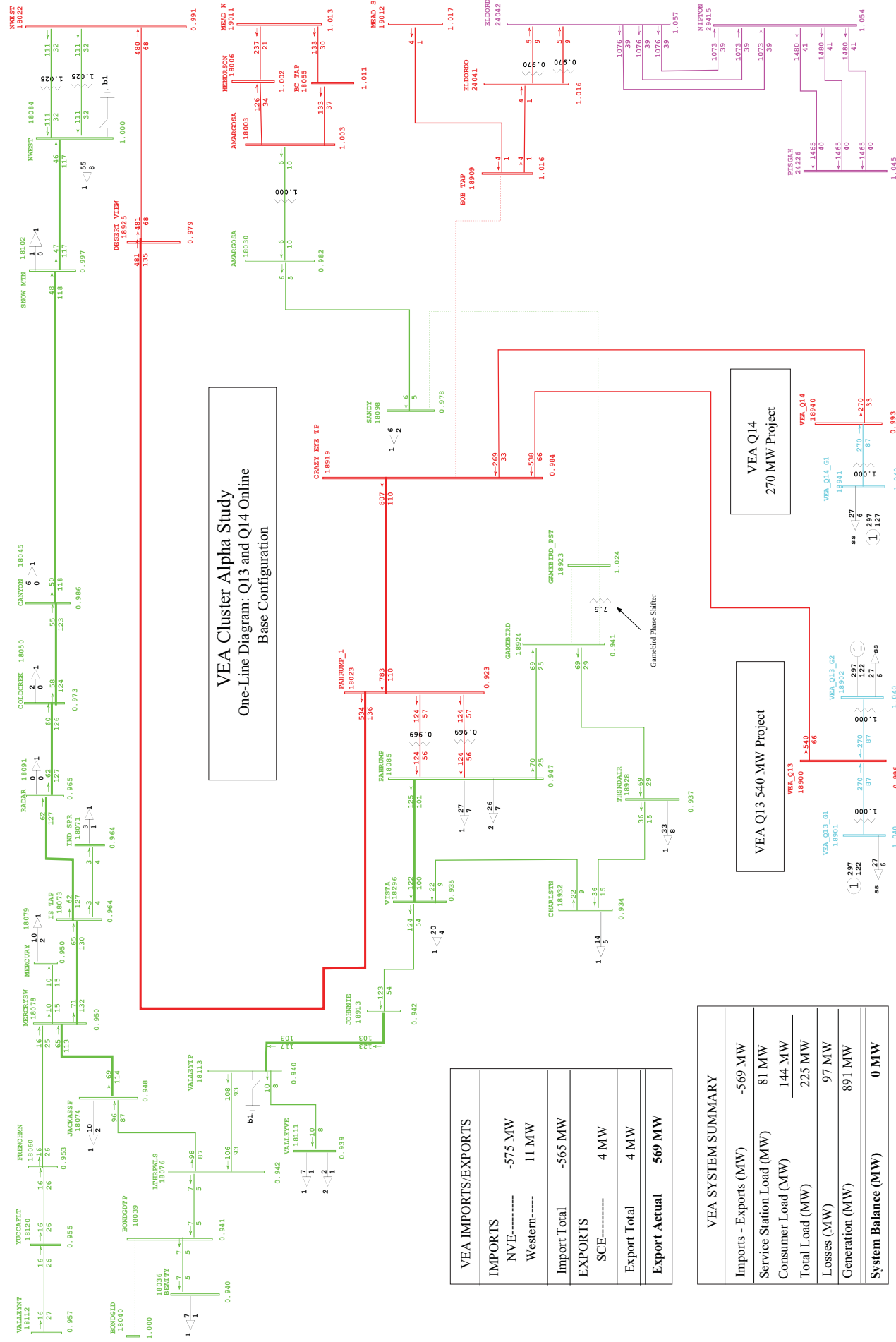
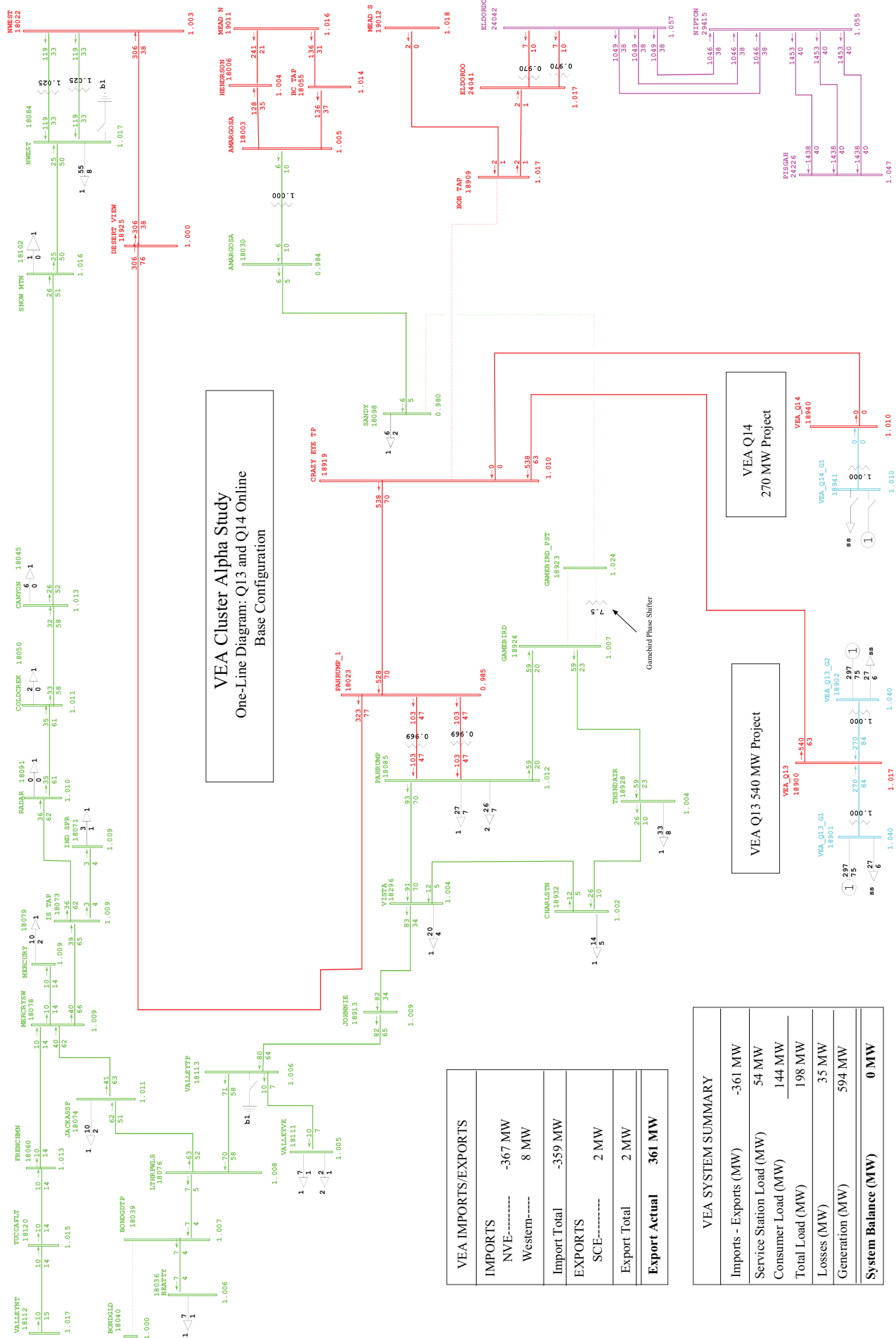


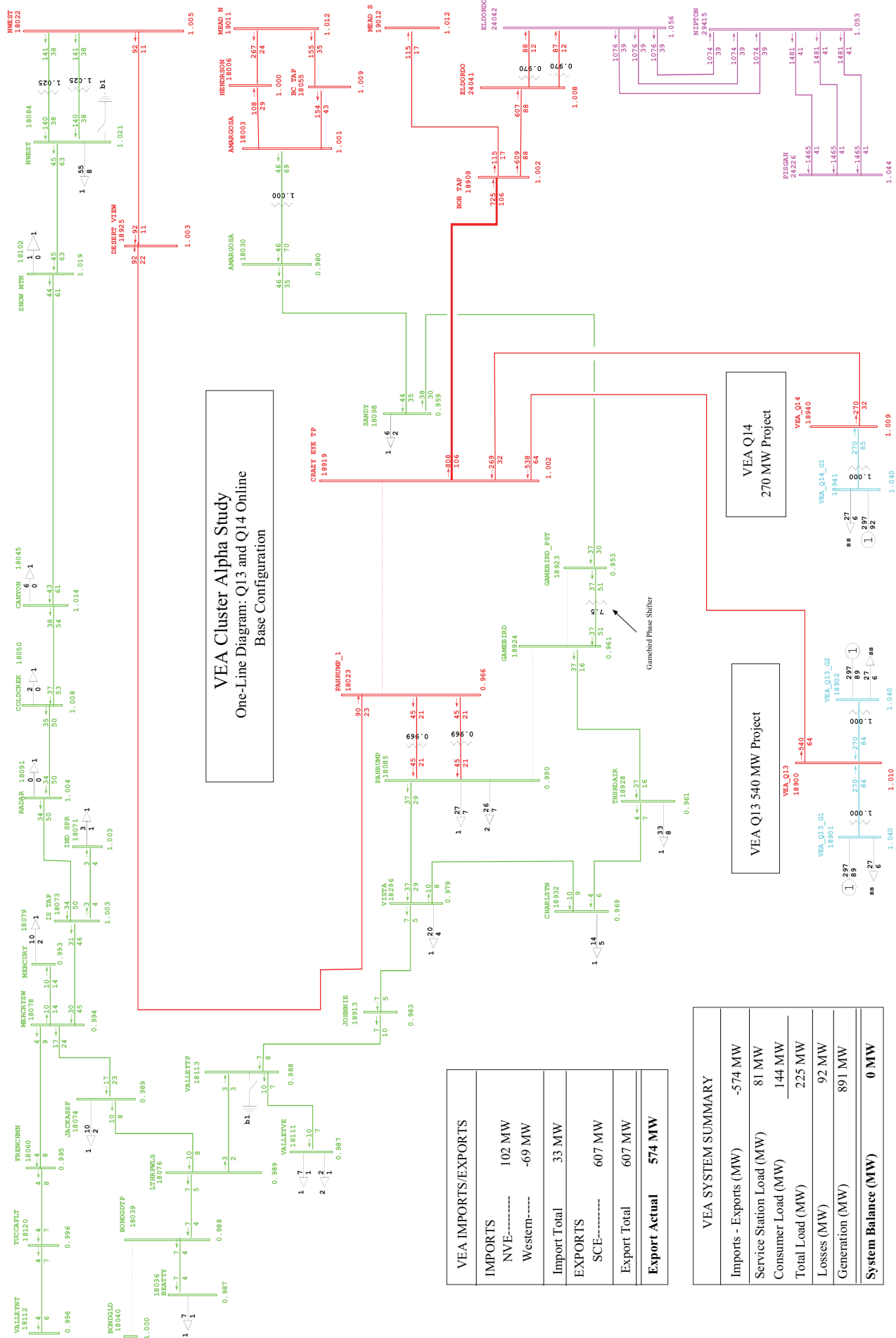
Figure 7 - Crazy Eyes Tap-Bob Tap and Gamebird-Sandy Outage (w/ SPS)



VEA IMPORTS/EXPORTS	
IMPORTS	
NVE-----	-367 MW
Western----	8 MW
Import Total	-359 MW
EXPORTS	
SCE-----	2 MW
Export Total	2 MW
Export Actual	361 MW

VEA SYSTEM SUMMARY	
Imports - Exports (MW)	-361 MW
Service Station Load (MW)	54 MW
Consumer Load (MW)	144 MW
Total Load (MW)	198 MW
Losses (MW)	35 MW
Generation (MW)	594 MW
System Balance (MW)	0 MW

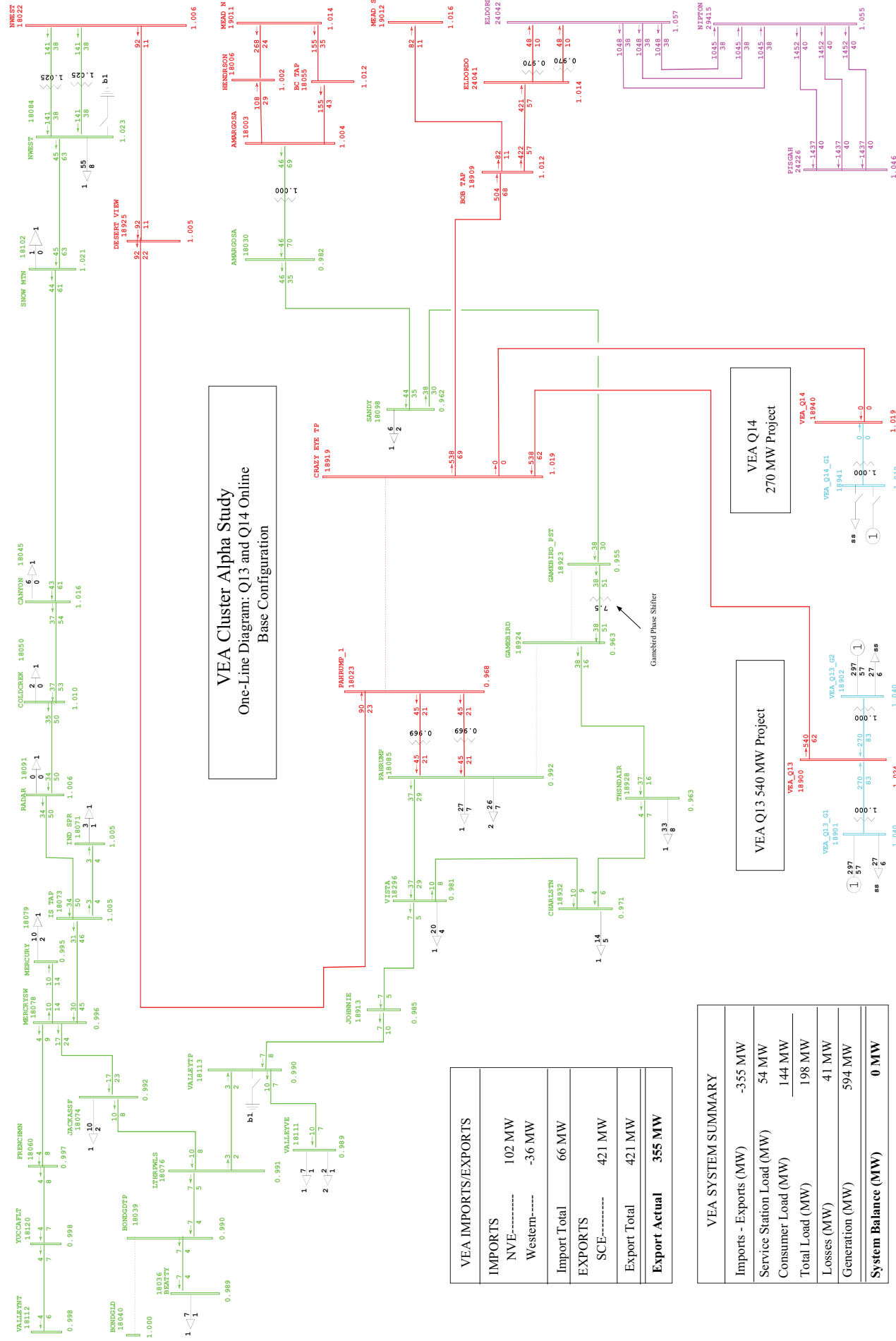
Figure 8 - Crazy Eyes Tap-Pahrump and Pahrump-Gamebird Outage (w/o SPS)



VEA IMPORTS/EXPORTS	
IMPORTS	
NVE-----	102 MW
Western----	-69 MW
Import Total	33 MW
EXPORTS	
SCE-----	607 MW
Export Total	607 MW
Export Actual	574 MW

VEA SYSTEM SUMMARY	
Imports - Exports (MW)	-574 MW
Service Station Load (MW)	81 MW
Consumer Load (MW)	144 MW
Total Load (MW)	225 MW
Losses (MW)	92 MW
Generation (MW)	891 MW
System Balance (MW)	0 MW

Figure 9 - Crazy Eyes Tap-Pahrump and Pahrump-Gamebird Outage (w/ SPS)



### Figure 10 - Off-Peak Base Case

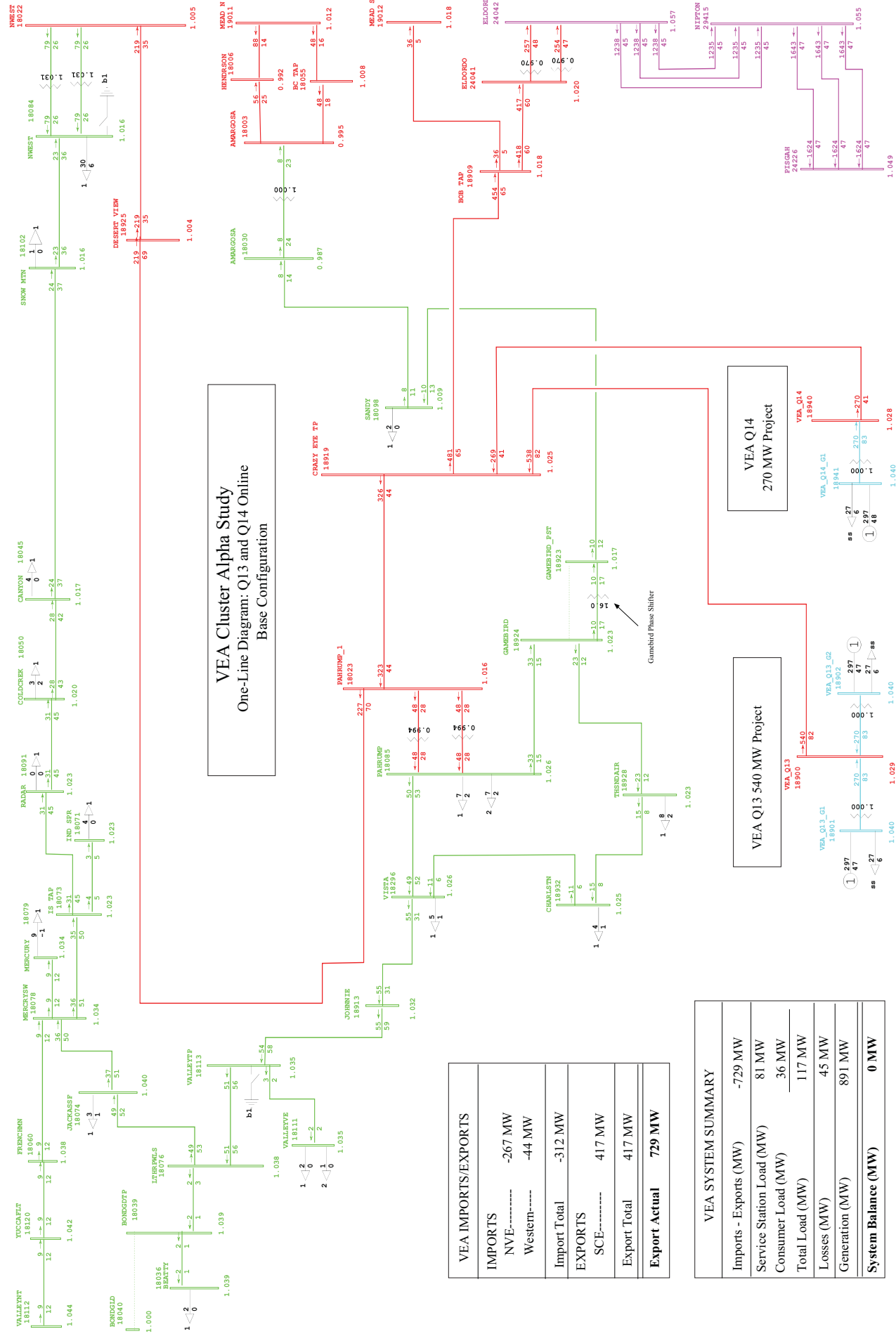
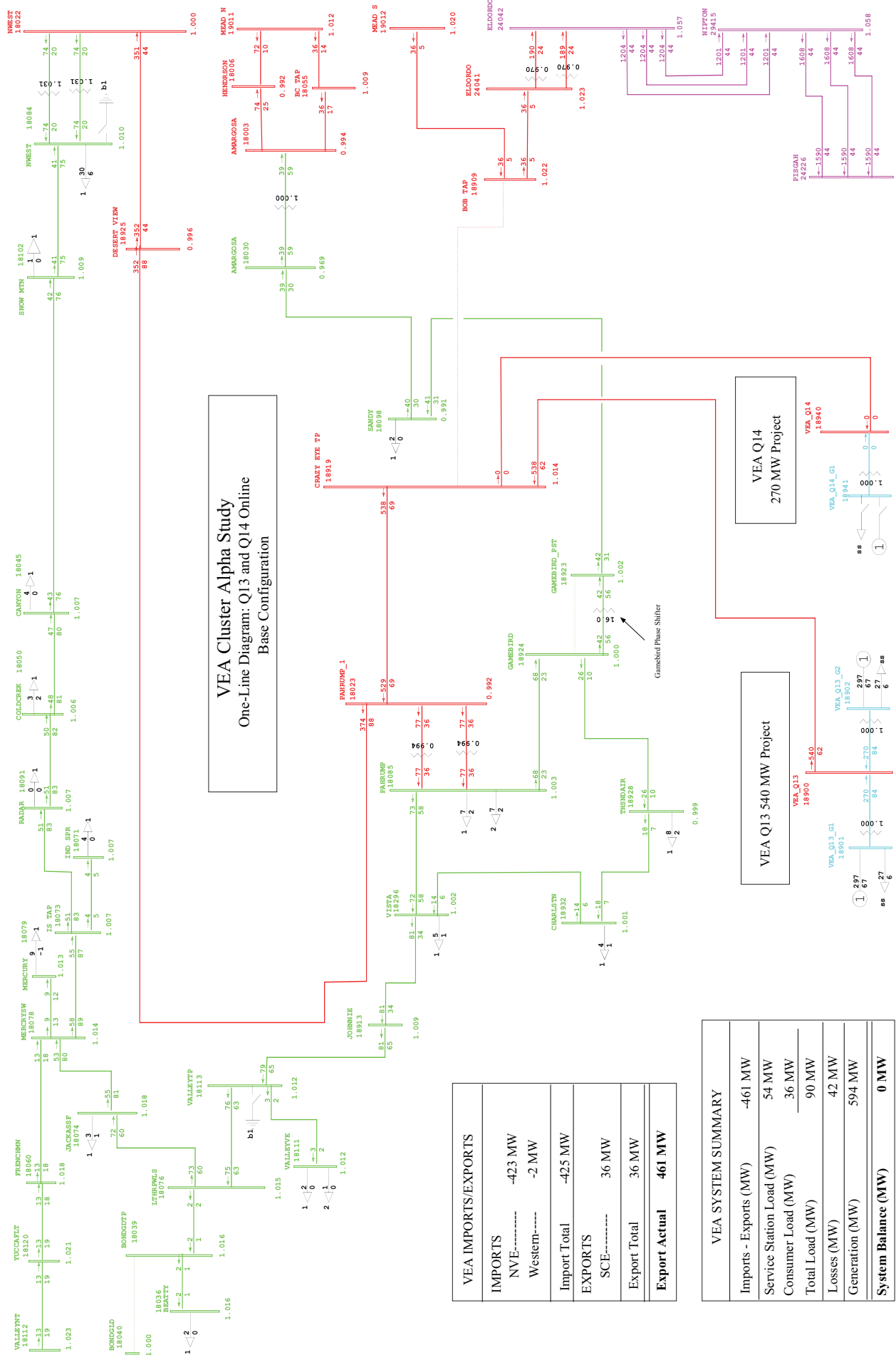


Figure 11 - Crazy Eyes Tap-Bob Tap Outage (w/ SPS)



VEA IMPORTS/EXPORTS	
IMPORTS	
NVE-----	-423 MW
Western----	-2 MW
Import Total	-425 MW
EXPORTS	
SCE-----	36 MW
Export Total	36 MW
Export Actual	461 MW

VEA SYSTEM SUMMARY	
Imports - Exports (MW)	-461 MW
Service Station Load (MW)	54 MW
Consumer Load (MW)	36 MW
Total Load (MW)	90 MW
Losses (MW)	42 MW
Generation (MW)	594 MW
System Balance (MW)	0 MW



Figure 12 - Crazy Eyes Tap-Pahrump Outage (w/ SPS)

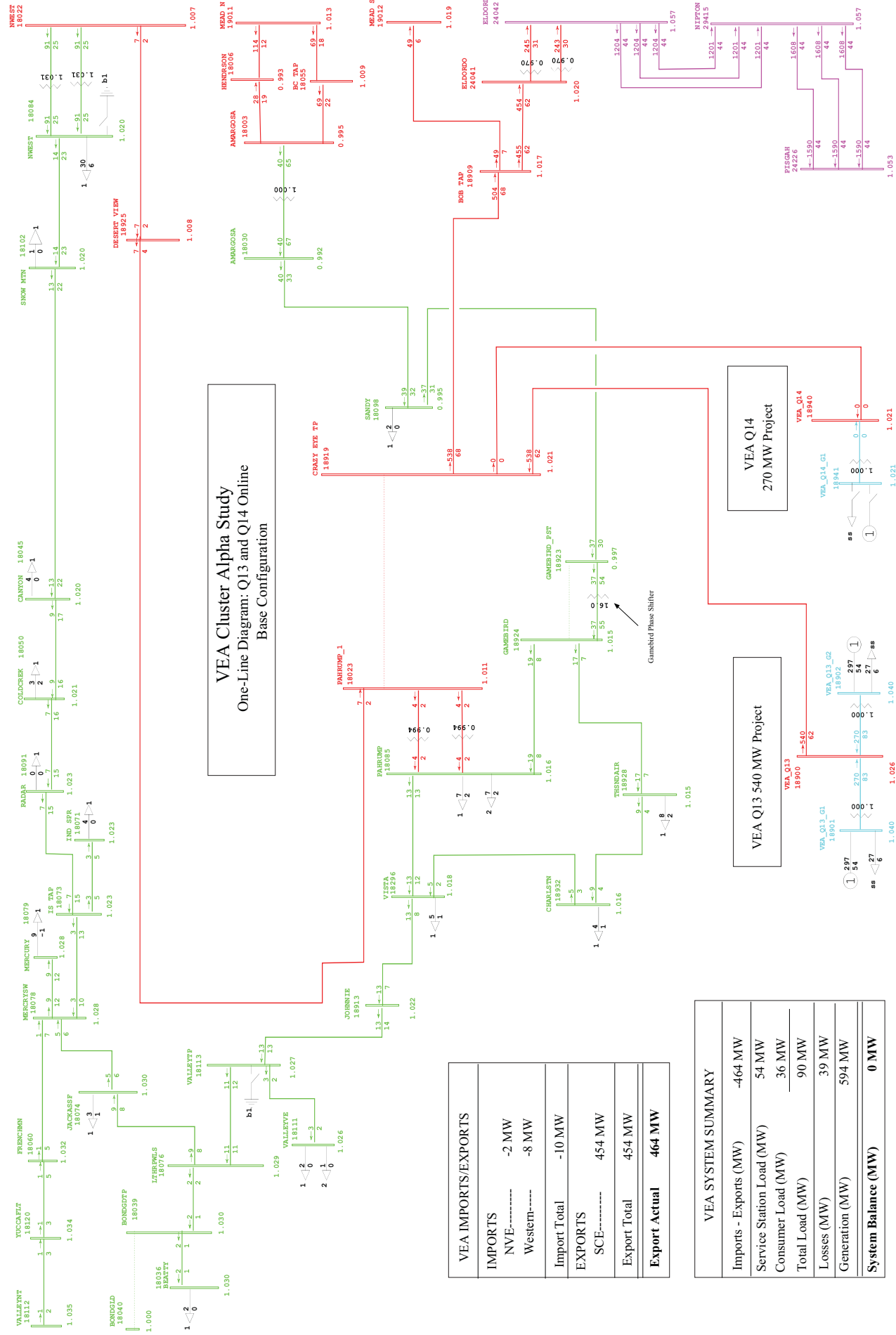
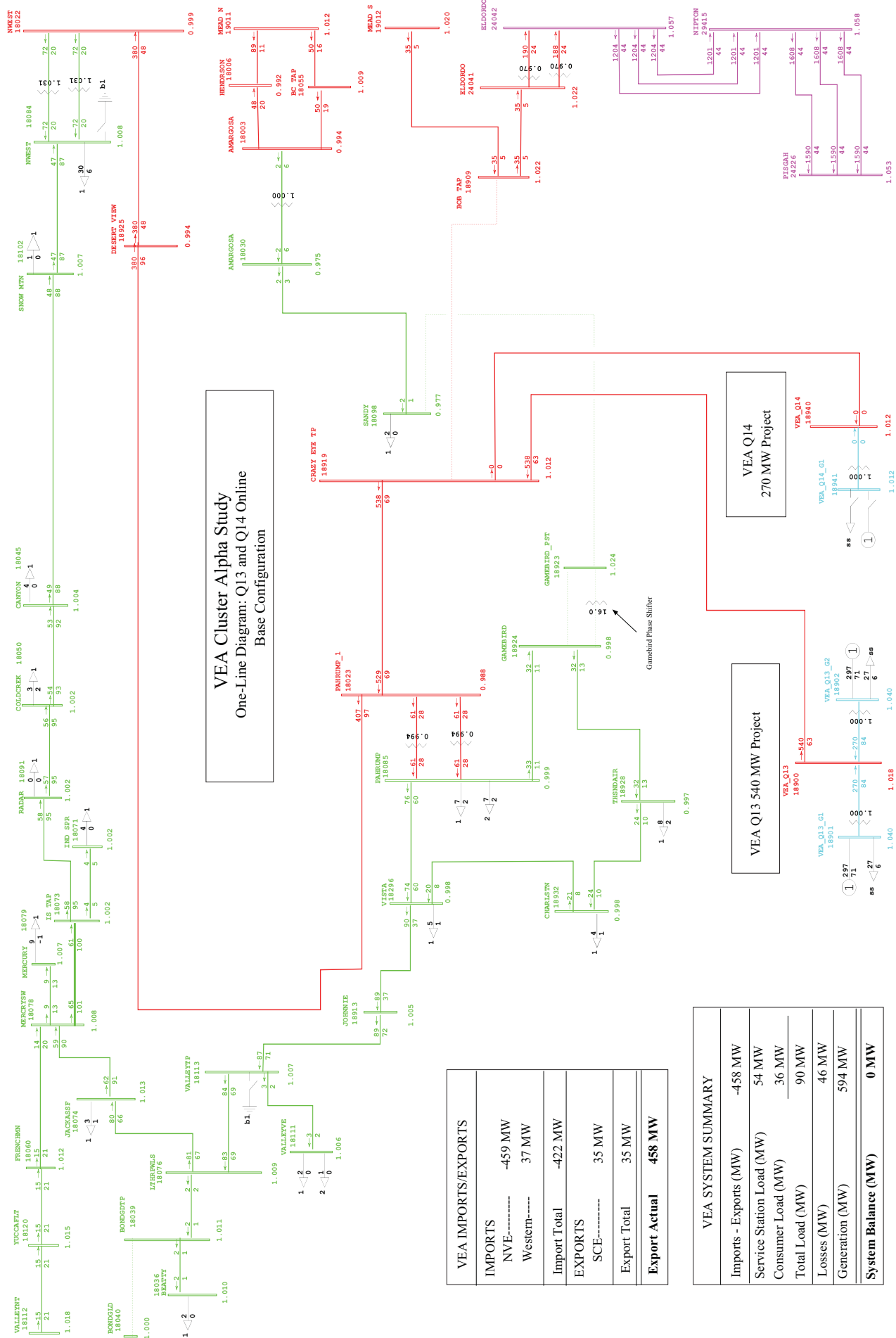


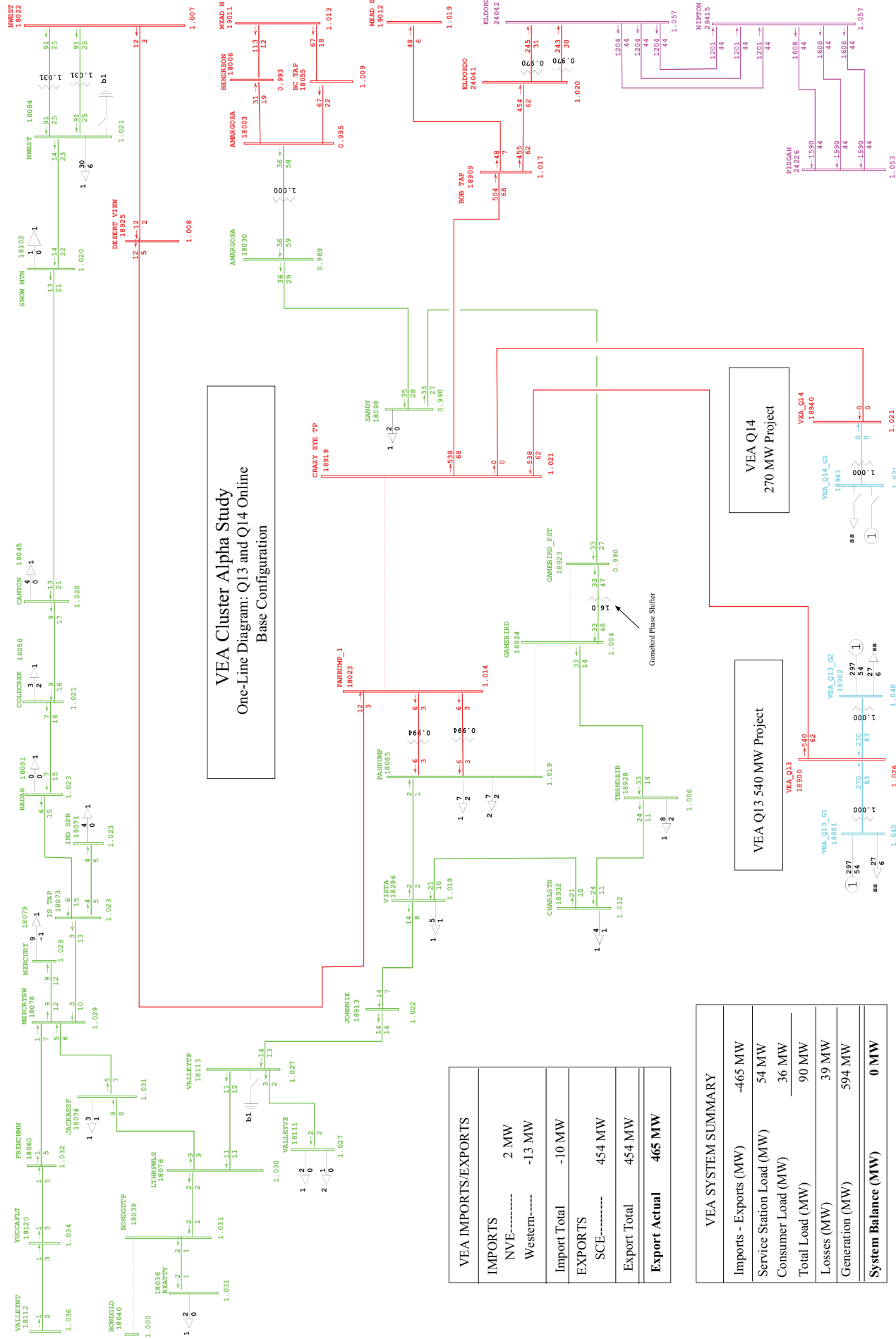
Figure 13 - Crazy Eyes Tap-Bob Tap and Gamebird-Sandy Outage (w/ SPS)



VEA IMPORTS/EXPORTS	
IMPORTS	
NVE-----	-459 MW
Western----	37 MW
Import Total	-422 MW
EXPORTS	
SCE-----	35 MW
Export Total	35 MW
Export Actual	458 MW

VEA SYSTEM SUMMARY	
Imports - Exports (MW)	-458 MW
Service Station Load (MW)	54 MW
Consumer Load (MW)	36 MW
Total Load (MW)	90 MW
Losses (MW)	46 MW
Generation (MW)	594 MW
System Balance (MW)	0 MW

Figure 14 - Crazy Eyes Tap-Pahrump and Pahrump-Gamebird Outage (w/ SPS)



**Queue Cluster Alpha  
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**Appendix C**

**Power Flow Plots – Expanded Configuration**

## **Expanded Configuration – Plot List**

### On-Peak Studies (w/o SPS)

Figure 1 - Base Case

Figure 2 - Crazy Eyes Tap-Bob Tap 230-kV line

Figure 3 - Crazy Eyes Tap-Pahrump 230-kV line

Figure 4 - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line

Figure 5 - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line

Figure 6 - Crazy Eyes Tap-Pahrump 230-kV line and Crazy Eyes Tap-Desert View 230-kV line

## Figure 1 - Base Case

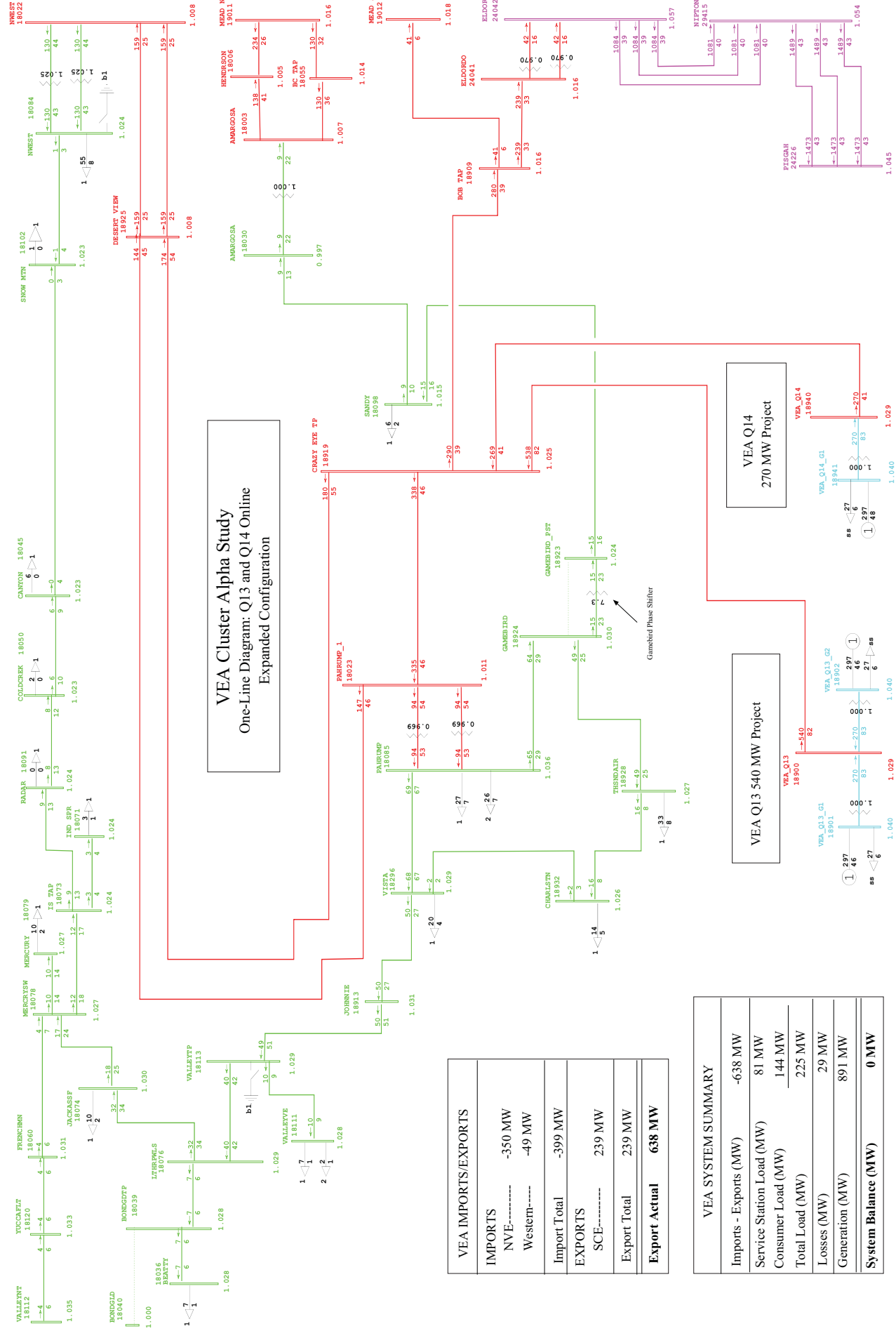
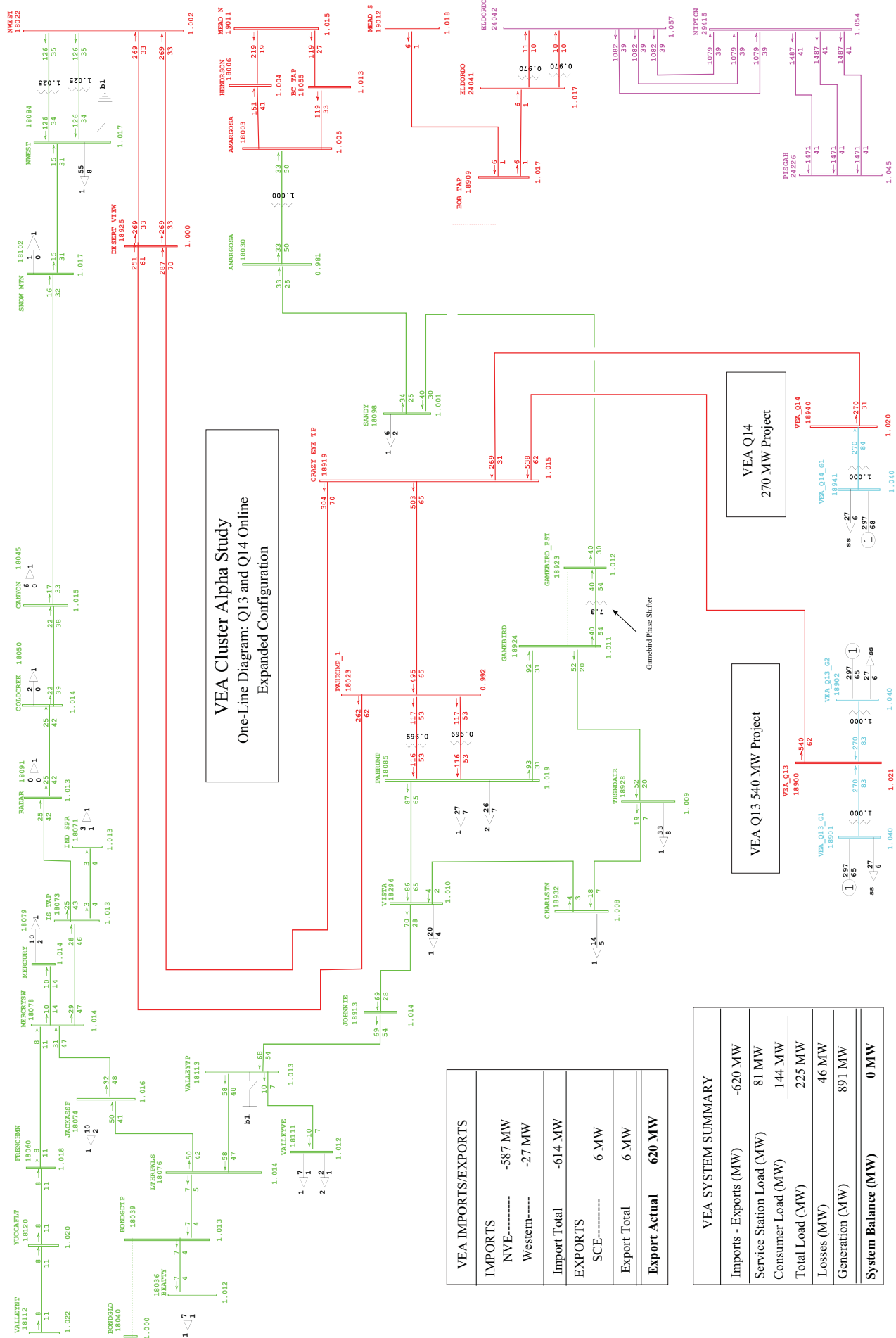


Figure 2 - Crazy Eyes Tap-Bob Tap Outage



VEA IMPORTS/EXPORTS	
IMPORTS	
NVE-----	-587 MW
Western----	-27 MW
Import Total	-614 MW
EXPORTS	
SCE-----	6 MW
Export Total	6 MW
Export Actual	620 MW

VEA SYSTEM SUMMARY	
Imports - Exports (MW)	-620 MW
Service Station Load (MW)	81 MW
Consumer Load (MW)	144 MW
Total Load (MW)	225 MW
Losses (MW)	46 MW
Generation (MW)	891 MW
System Balance (MW)	0 MW





### Figure 3 - Crazy Eyes Tap-Pahrump Outage

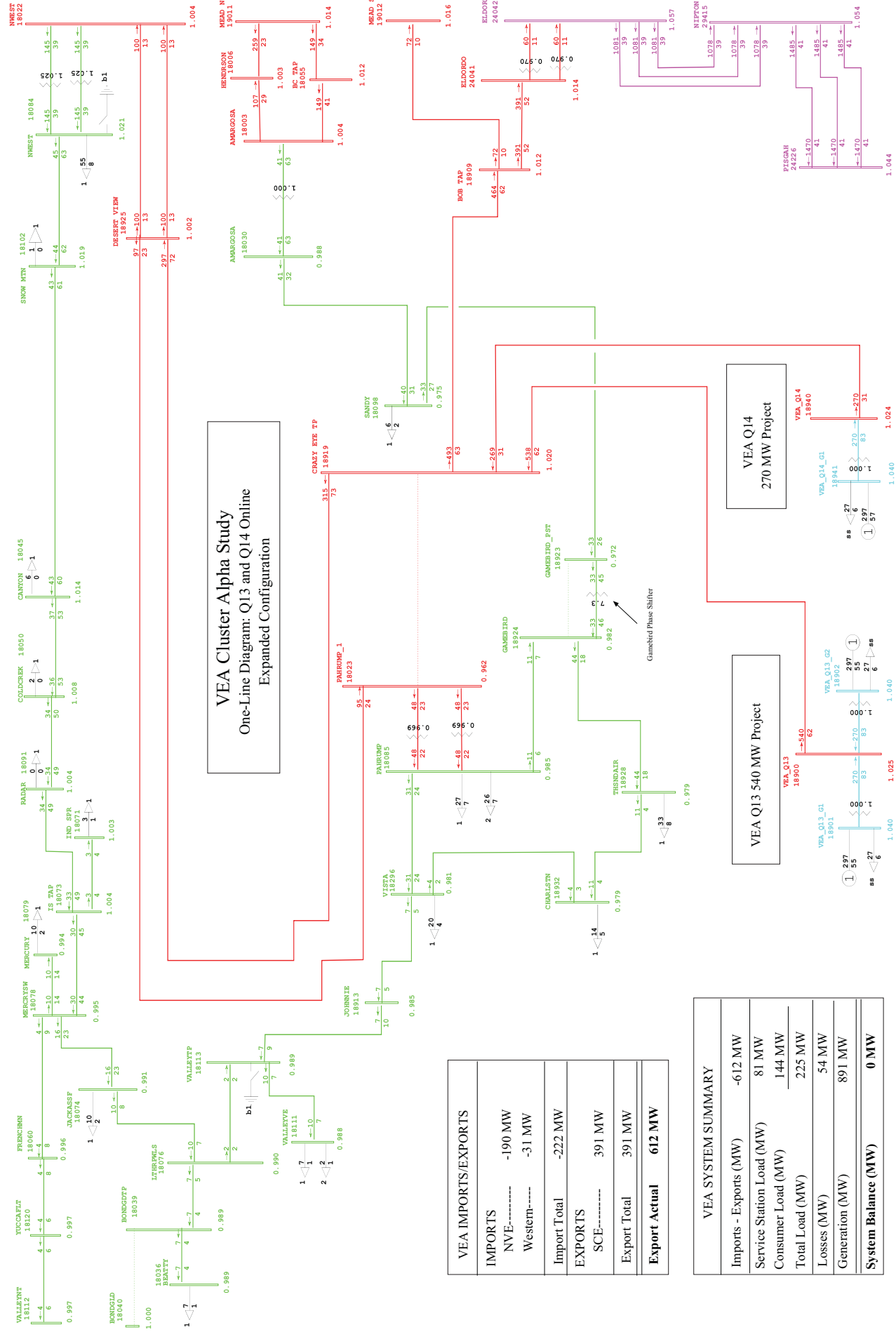


Figure 4 - Crazy Eyes Tap-Bob Tap and Gamebird-Sandy Outage

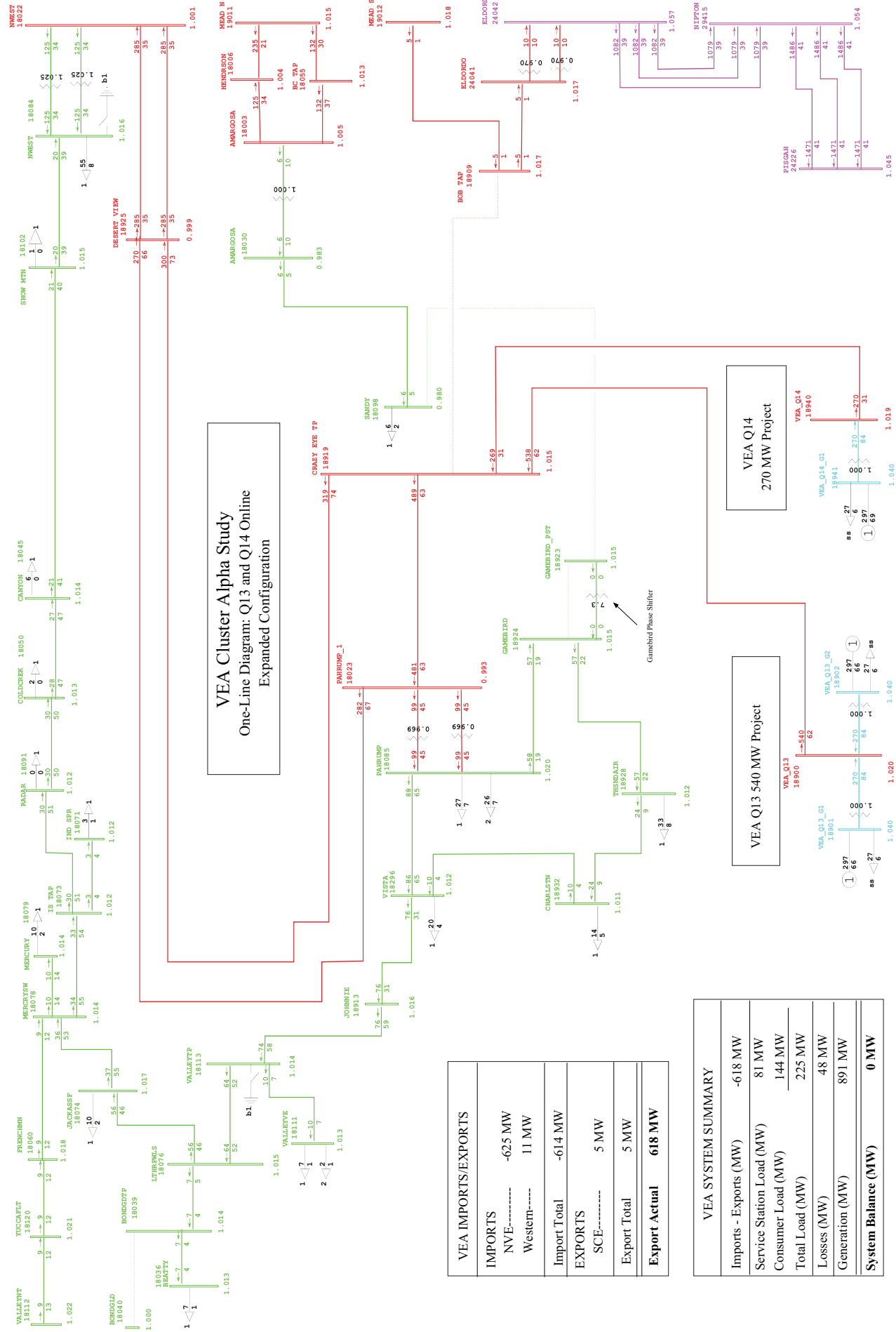


Figure 5 - Crazy Eyes Tap-Pahrump and Pahrump-Gamebird Outage

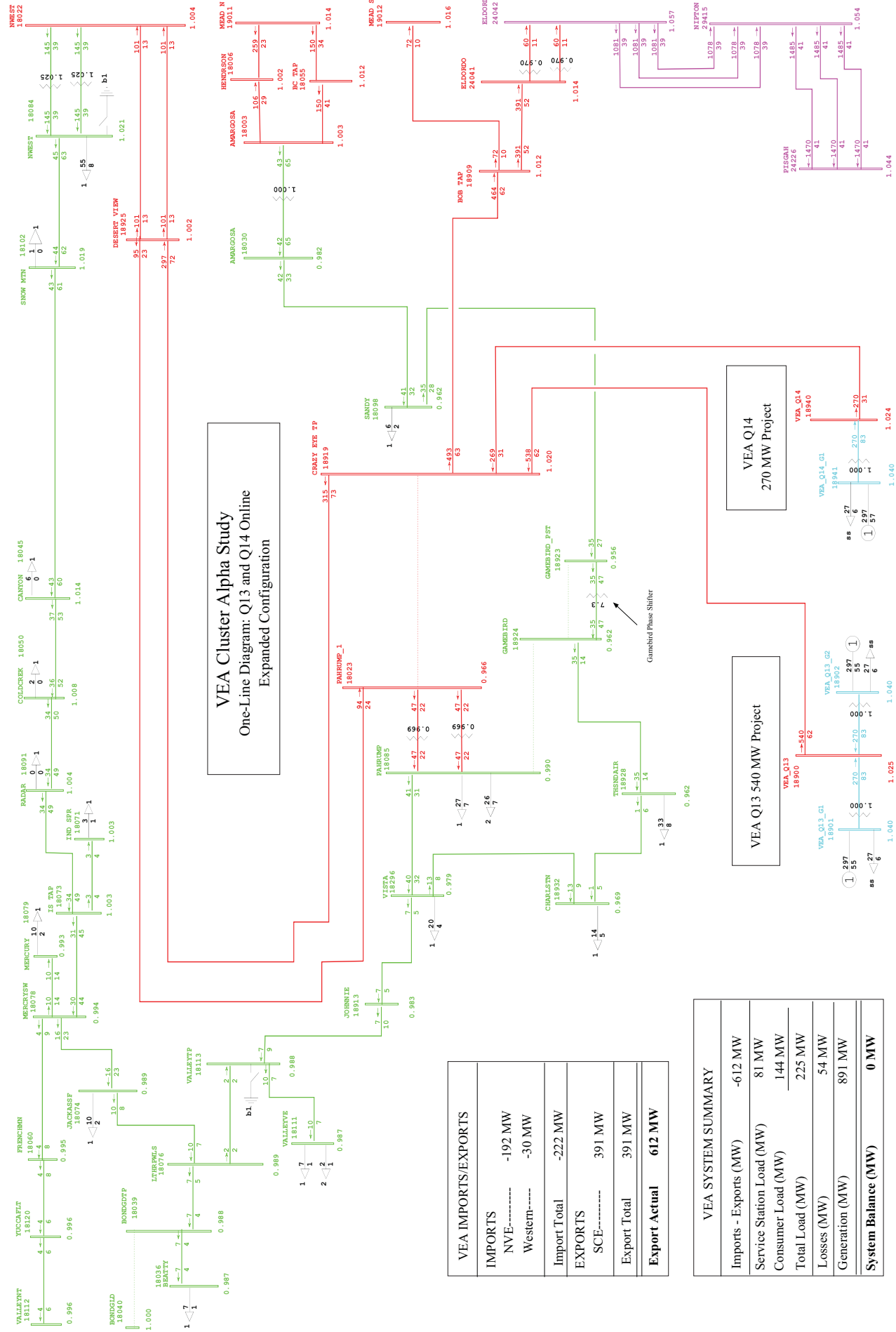
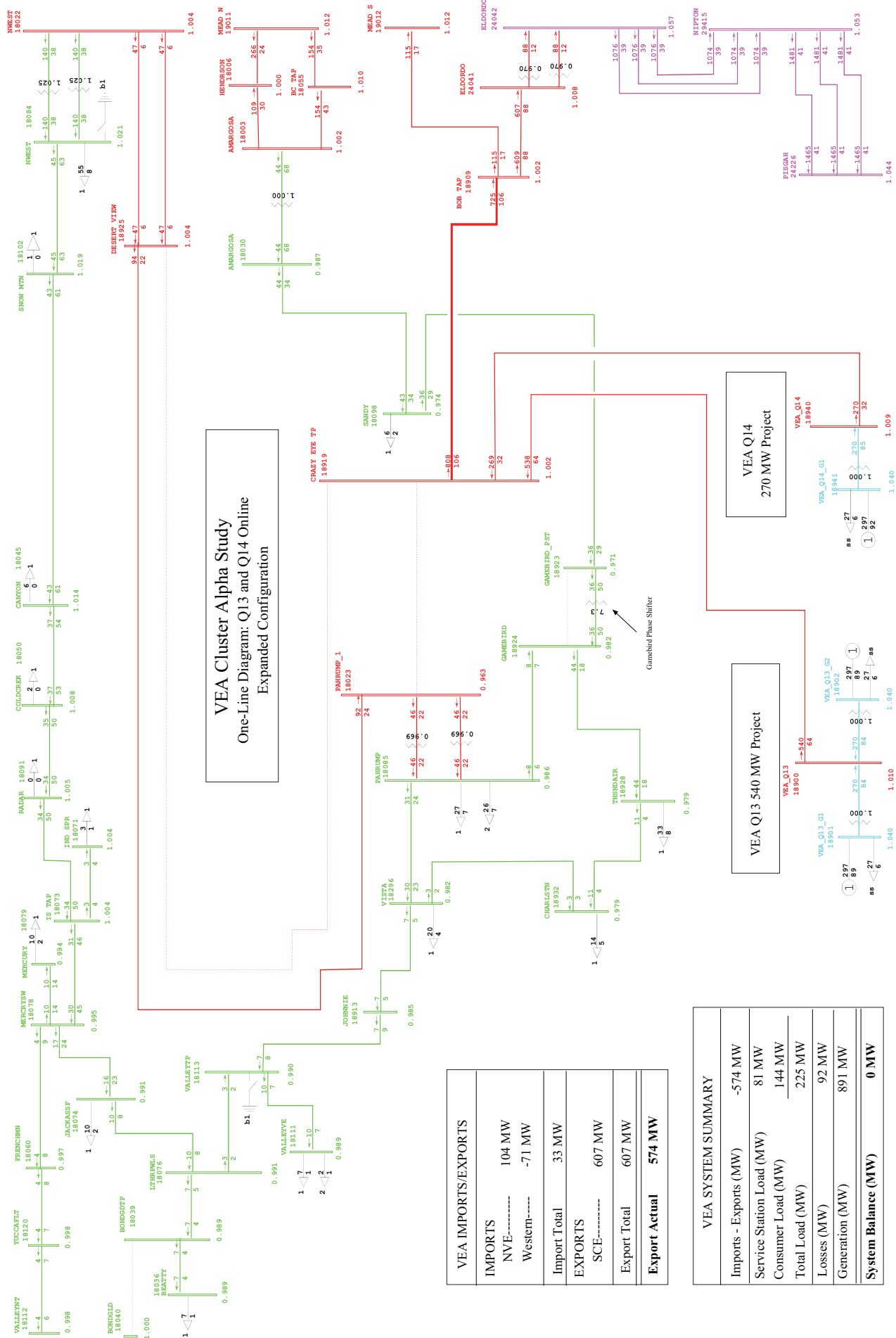


Figure 6 - Crazy Eyes Tap-Pahrump and Crazy Eyes Tap-Desert View Outage



VEA IMPORTS/EXPORTS	
IMPORTS	
NVE-----	104 MW
Western----	-71 MW
Import Total	33 MW
EXPORTS	
SCE-----	607 MW
Export Total	607 MW
Export Actual	574 MW

VEA SYSTEM SUMMARY	
Imports - Exports (MW)	-574 MW
Service Station Load (MW)	81 MW
Consumer Load (MW)	144 MW
Total Load (MW)	225 MW
Losses (MW)	92 MW
Generation (MW)	891 MW
System Balance (MW)	0 MW

**Queue Cluster Alpha**  
**Phase 1 Interconnection Study Report**

**Study for the Valley Electric Association, Inc.**  
**Service Area**

**Appendix D**

**Transient Stability Plots – Base Configuration**

## **Base Configuration – Stability Plot List**

### On-Peak Studies

Figure 1- Crazy Eyes Tap-Bob Tap 230-kV line (without SPS)

Figure 2- Crazy Eyes Tap-Bob Tap 230-kV line (with SPS)

Figure 3 - Crazy Eyes Tap-Pahrump 230-kV line (without SPS)

Figure 4 - Crazy Eyes Tap-Pahrump 230-kV line (with SPS)

Figure 5 - Crazy Eyes Tap-Q13 230-kV line

Figure 6 - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (without SPS)

Figure 7 - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (with SPS)

Figure 8 - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line (without SPS)

Figure 9 - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line (with SPS)

Figure 10 - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump 230/138-kV transformer #1 (without SPS)

Figure 11- Crazy Eyes Tap-Pahrump 230-kV line and Pahrump 230/138-kV transformer #1 (with SPS)

### Off-Peak Studies

Figure 12- Crazy Eyes Tap-Bob Tap 230-kV line (with SPS)

Figure 13 - Crazy Eyes Tap-Pahrump 230-kV line (with SPS)

Figure 14 - Crazy Eyes Tap-Q13 230-kV line

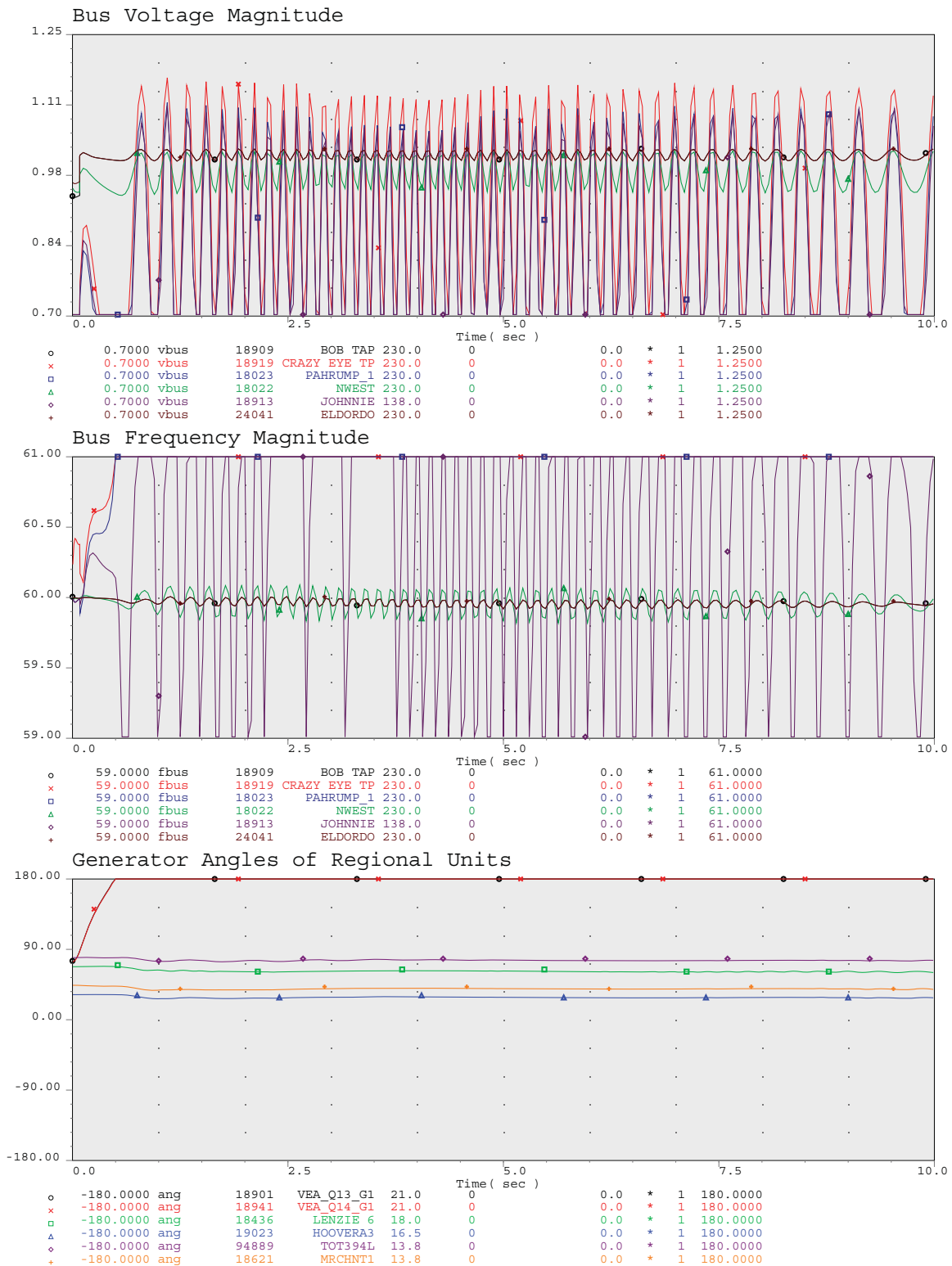
Figure 15 - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (without SPS)

Figure 16 - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (with SPS)

Figure 17 - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line (with SPS)

Figure 18- Crazy Eyes Tap-Pahrump 230-kV line and Pahrump 230/138-kV transformer #1 (with SPS)

Figure 1- Crazy Eyes Tap-Bob Tap 230-kV line (without SPS)

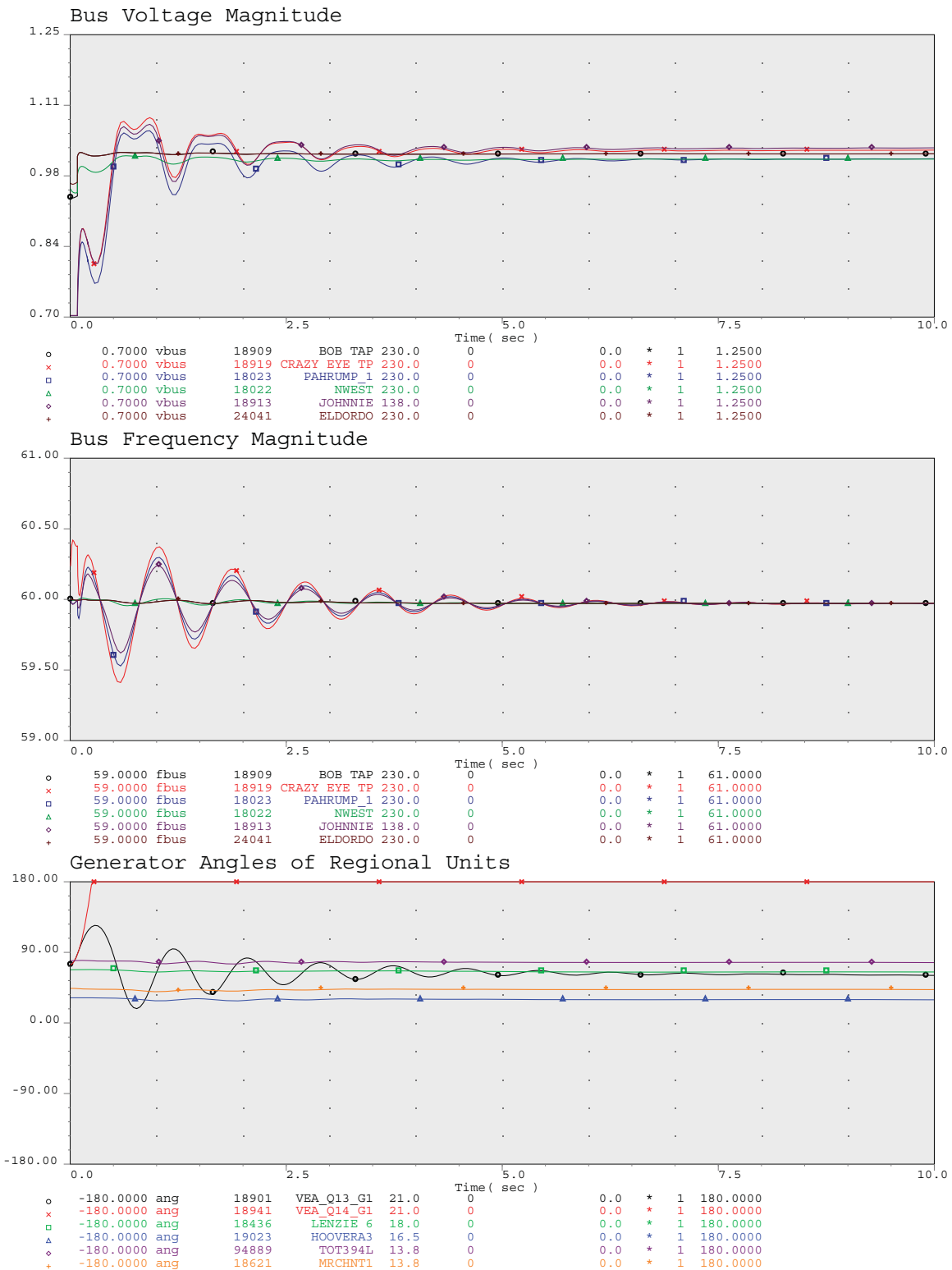


VEA CLUSTER ALPHA STUDIES  
 FROM CAISO HS CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
 CASIO SYSTEM INCLUDES UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
 Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
 Crazy Eye Tp-Bob Tap 230kV Line Ckt 1

BASE ON-PEAK CASE



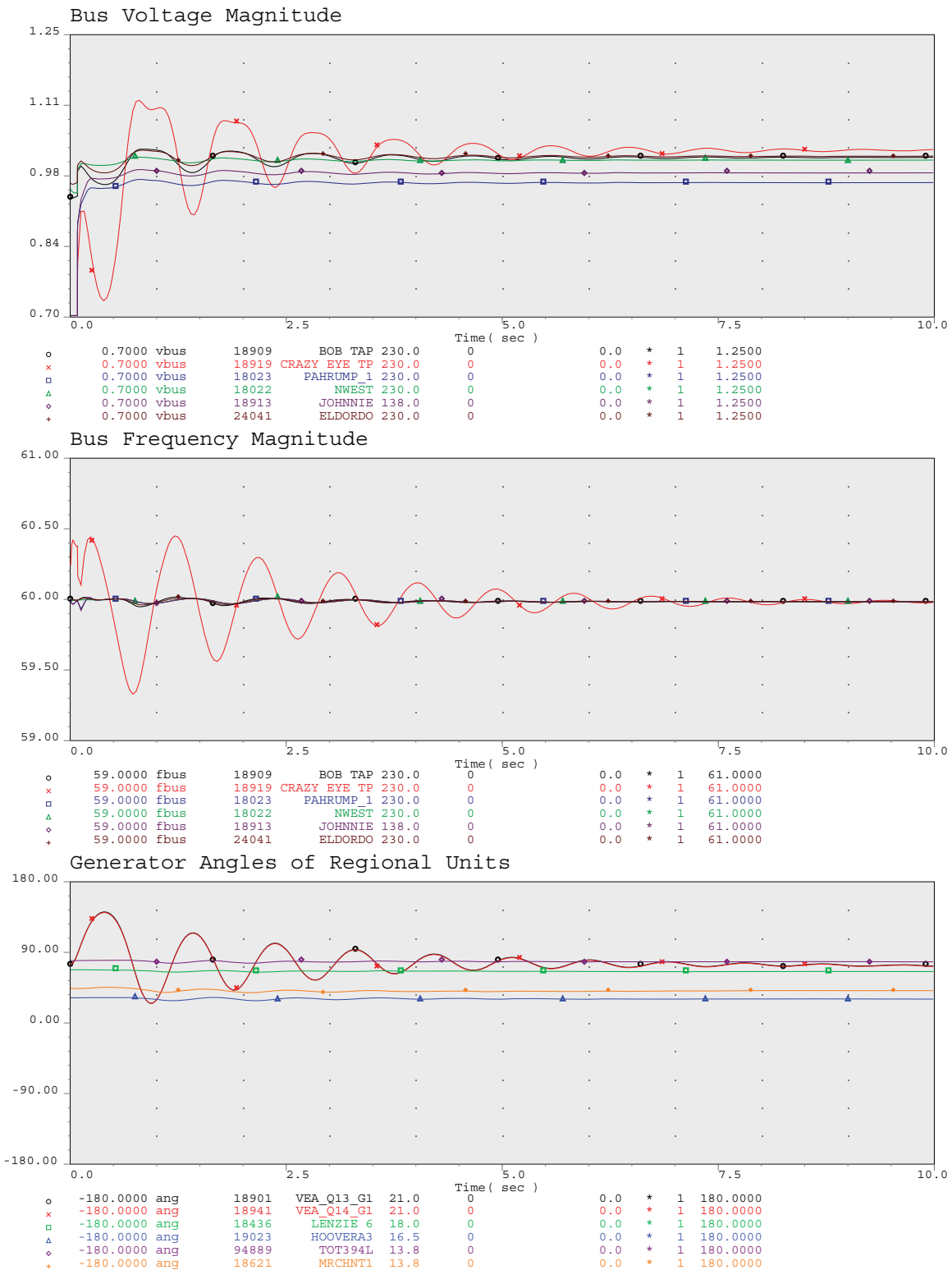
Figure 2- Crazy Eyes Tap-Bob Tap 230-kV line (with SPS)



VEA CLUSTER ALPHA STUDIES  
 FROM CAISO HS CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
 CASIO SYSTEM INCLUDES UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
 Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
 Crazy Eye Tp-Bob Tap 230kV Line Ckt 1 with RAS

BASE ON-PEAK CASE

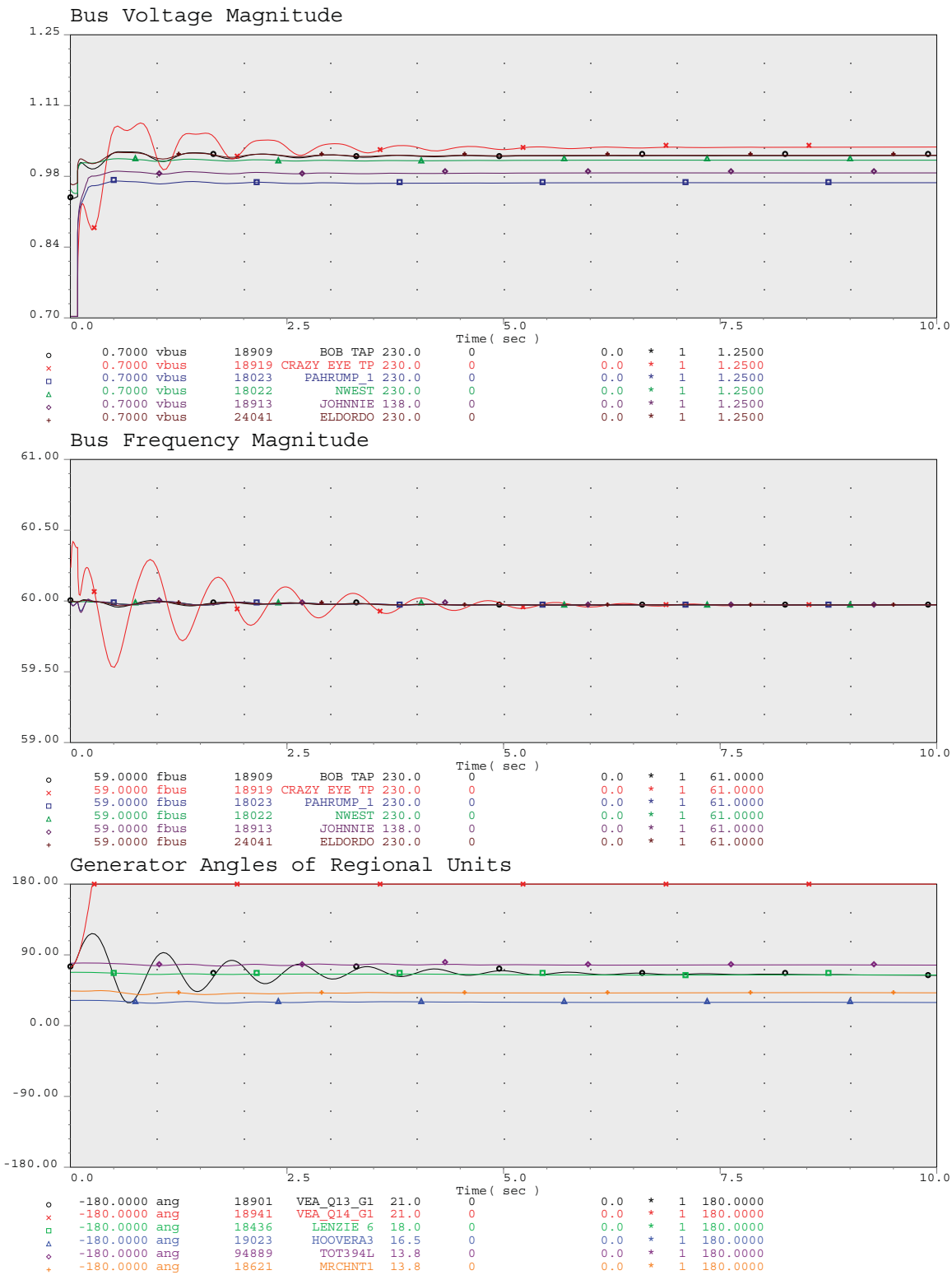
Figure 3 - Crazy Eyes Tap-Pahrump 230-kV line (without SPS)



VEA CLUSTER ALPHA STUDIES  
 FROM CAISO HS CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
 CASIO SYSTEM INCLUDES UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
 Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
 Pahrump\_1-Crazy Eye Tp 230kV Line Ckt 1

BASE ON-PEAK CASE

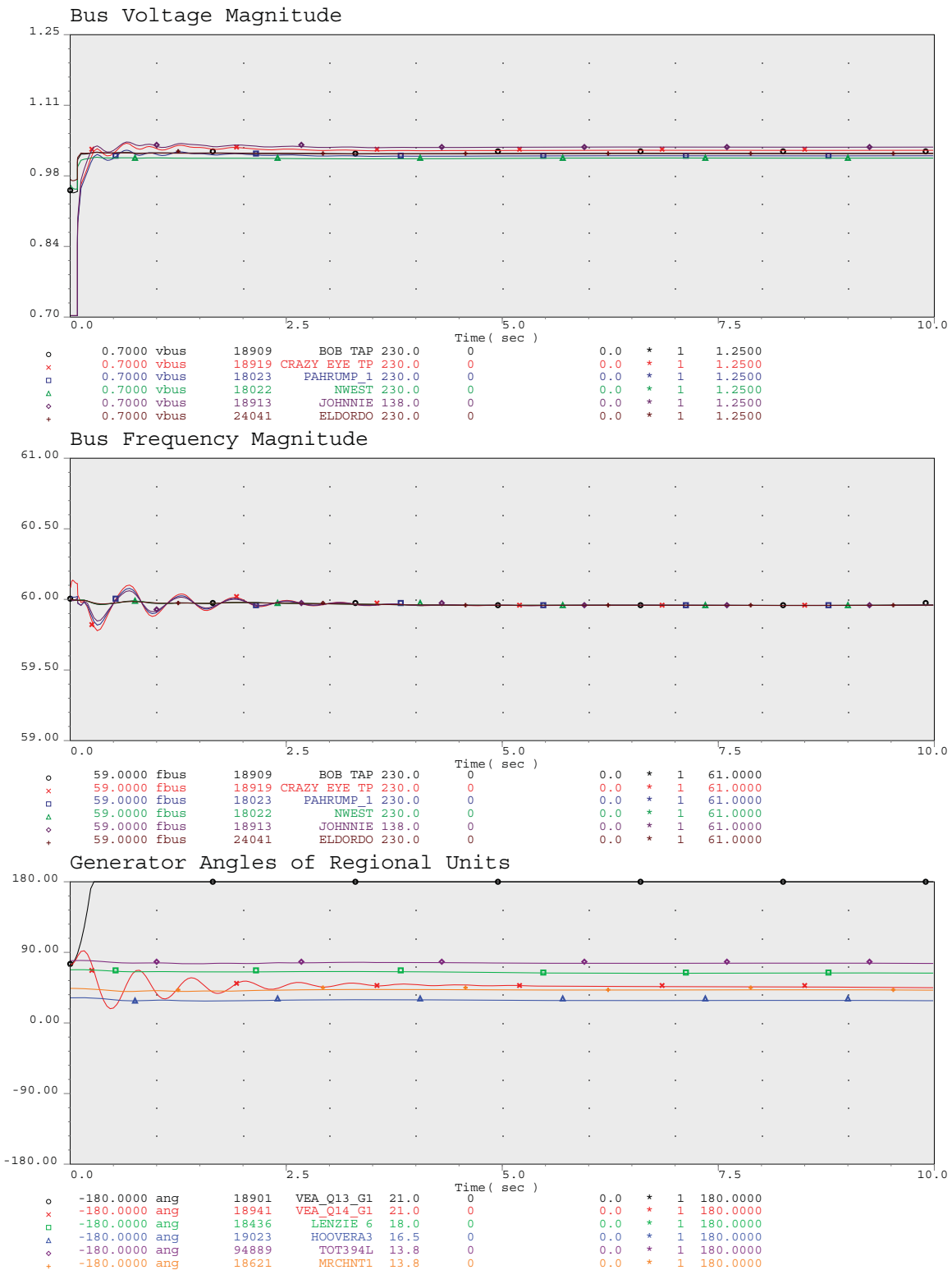
Figure 4 - Crazy Eyes Tap-Pahrump 230-kV line (with SPS)



VEA CLUSTER ALPHA STUDIES  
FROM CAISO HS CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
CASIO SYSTEM INCLUDES UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
Pahrump\_1-Crazy Eye Tp 230kV Line Ckt 1 with RAS

BASE ON-PEAK CASE

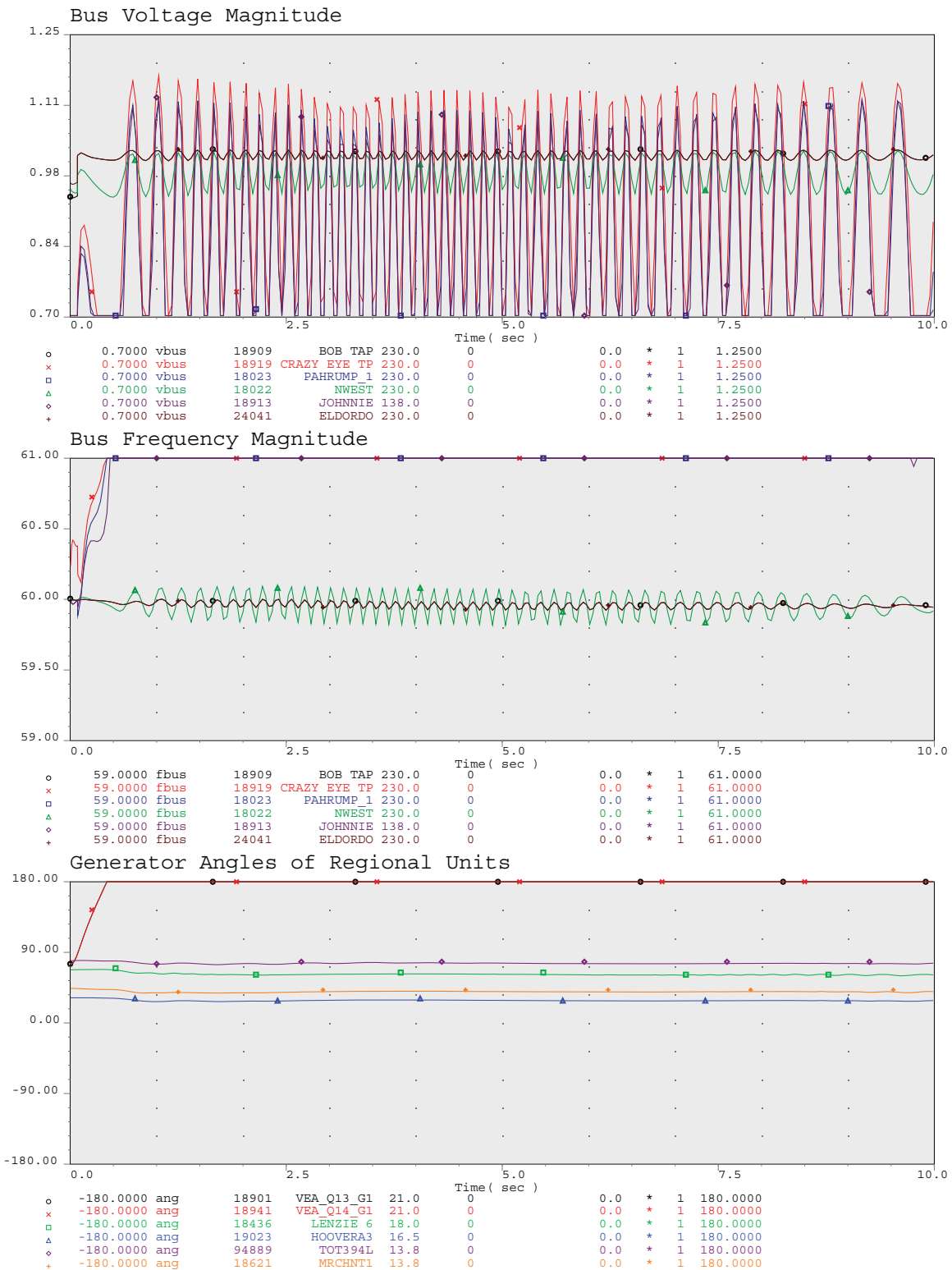
Figure 5 - Crazy Eyes Tap-Q13 230-kV line



VEA CLUSTER ALPHA STUDIES  
 FROM CAISO HS CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
 CASIO SYSTEM INCLUDES UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
 Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
 Crazy Eye Tp-Vea\_Q13 230kV Line Ckt 1

BASE ON-PEAK CASE

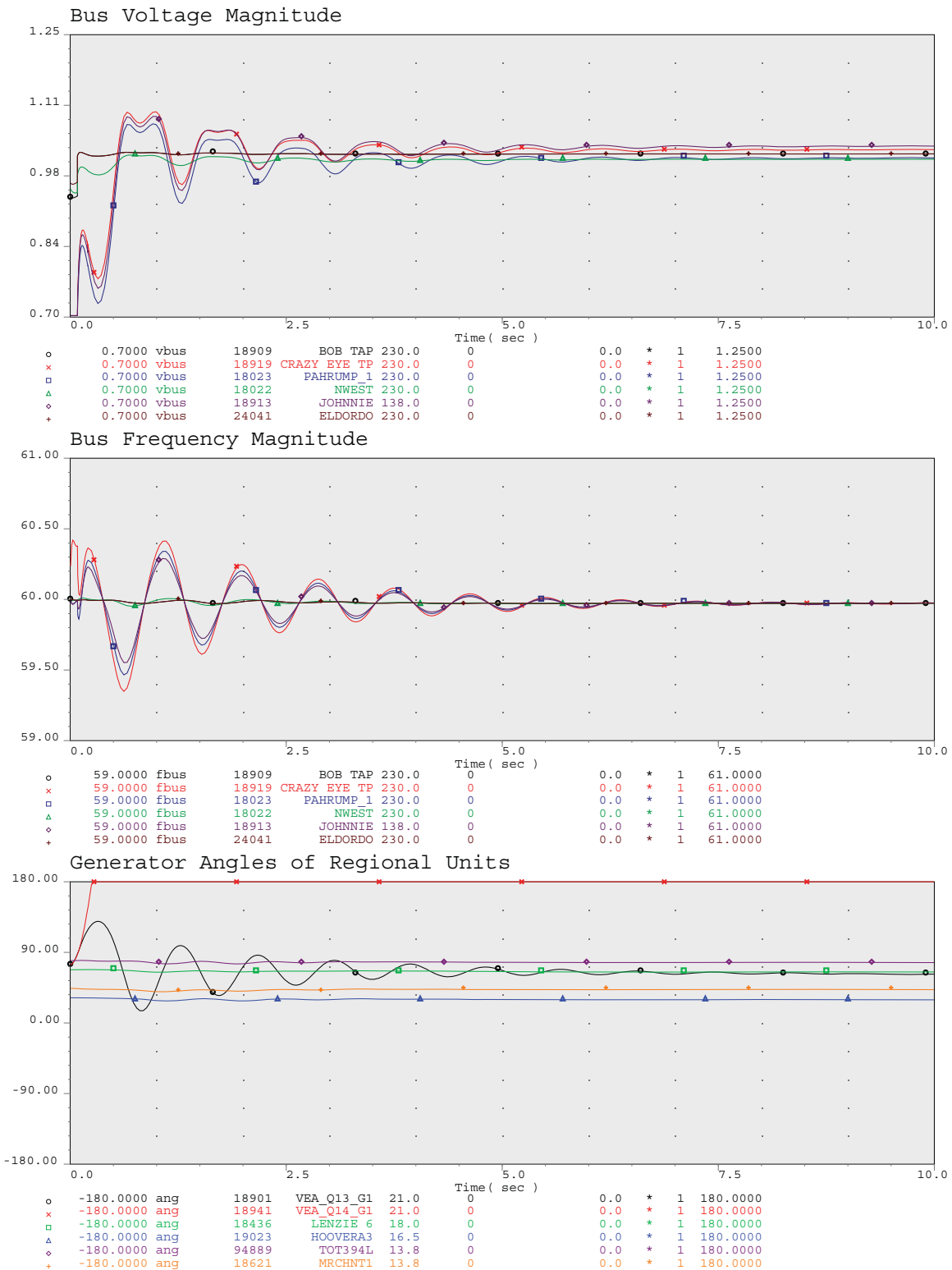
Figure 6 - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (without SPS)



VEA CLUSTER ALPHA STUDIES  
 FROM CAISO HS CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
 CASIO SYSTEM INCLUDES UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
 Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
 Comstruc Crazy Eye Tp-Bob Tap 230 & Gmbd-Gmbd Ps-Sandy 138

BASE ON-PEAK CASE

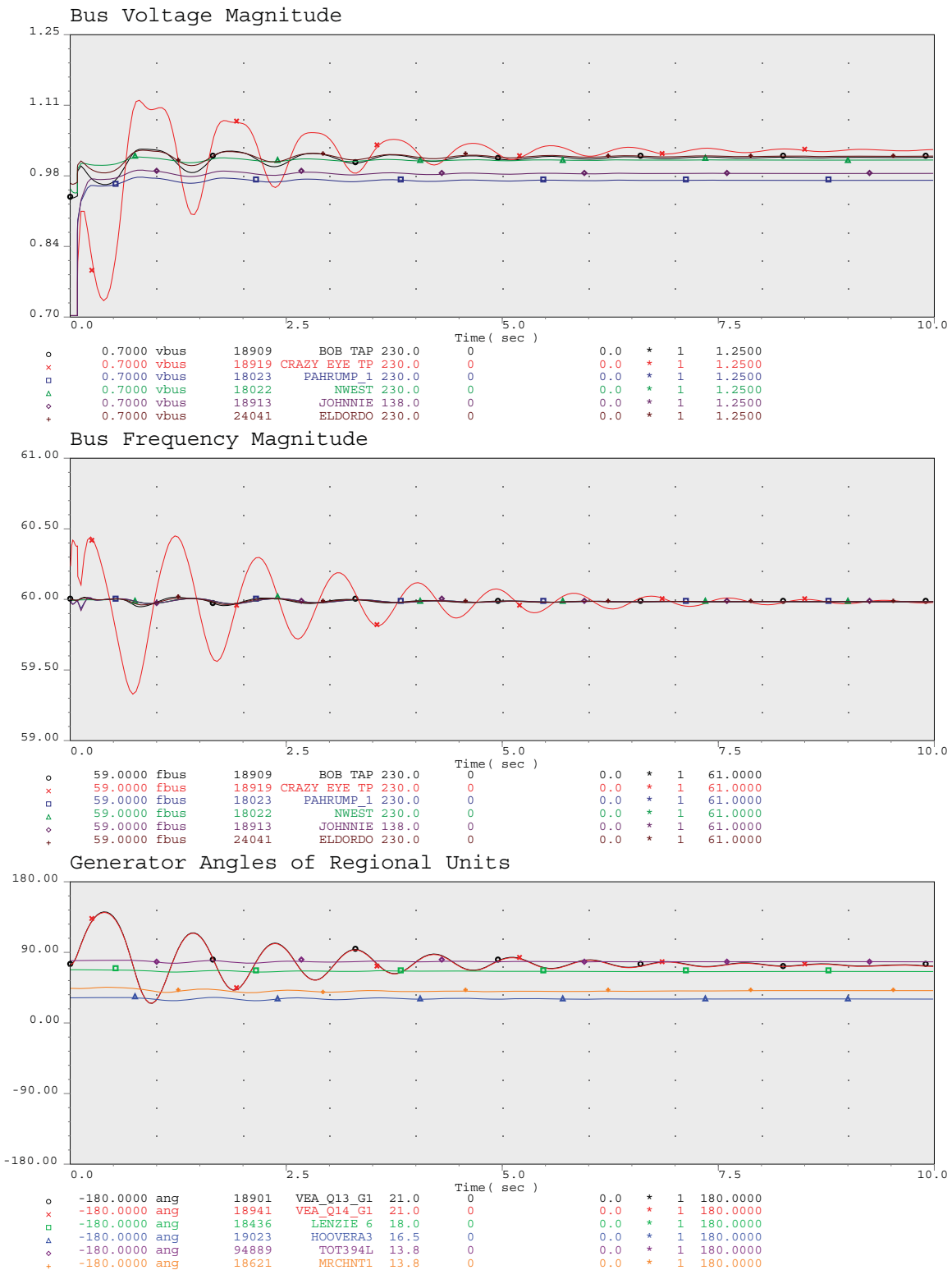
Figure 7 - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (with SPS)



VEA CLUSTER ALPHA STUDIES  
 FROM CAISO HS CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
 CASIO SYSTEM INCLUDES UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
 Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
 Comstruc Crazy Eye Tp-Bob Tap 230 & Gmbd-Gmbd Ps-Sandy 138 with RAS

BASE ON-PEAK CASE

Figure 8 - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line (without SPS)

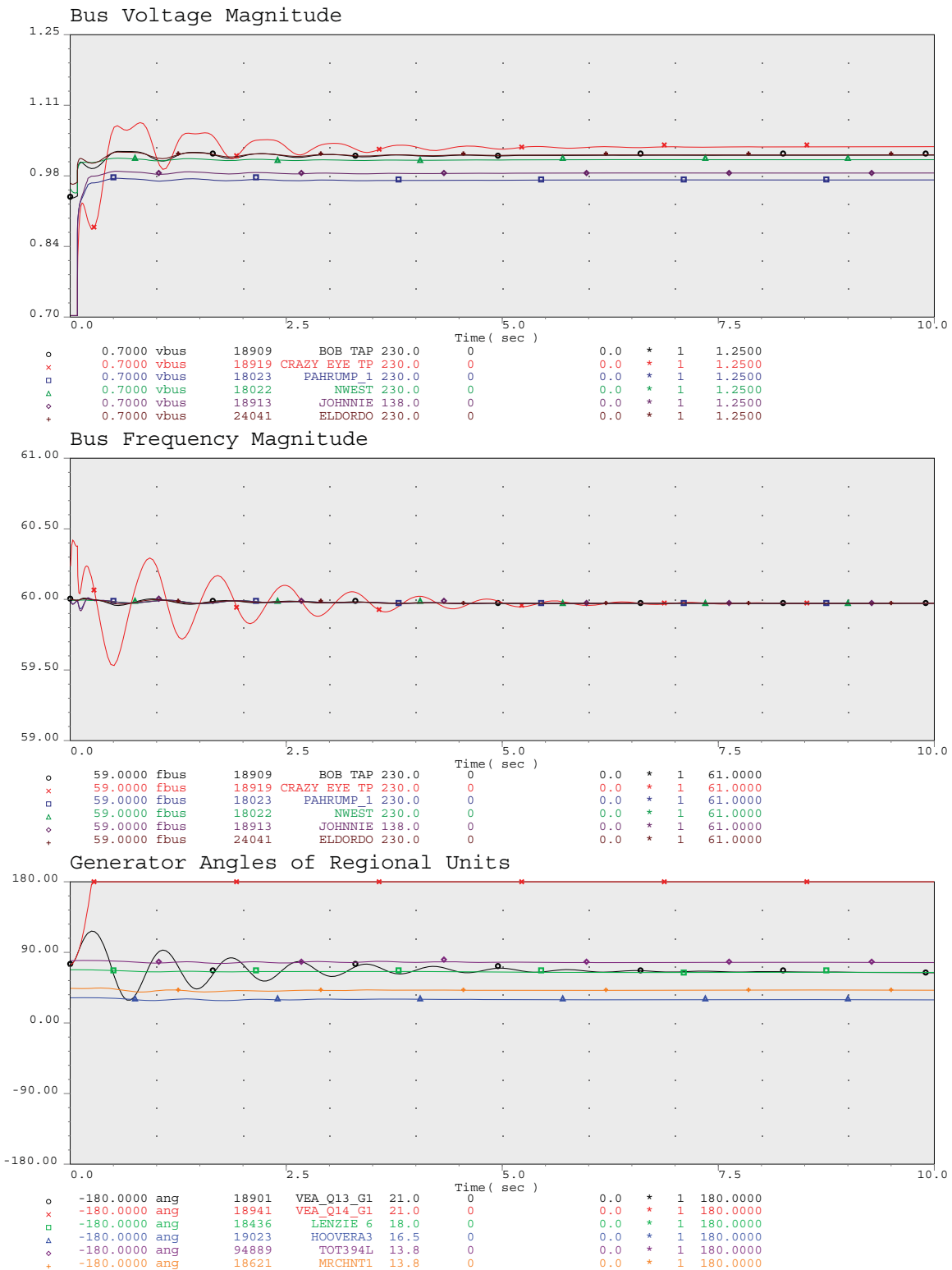


VEA CLUSTER ALPHA STUDIES  
 FROM CAISO HS CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
 CASIO SYSTEM INCLUDES UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
 Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
 Comstruc Pahrump-Crazy Eye Tp 230 & Pahrump-Gamebird 138

BASE ON-PEAK CASE



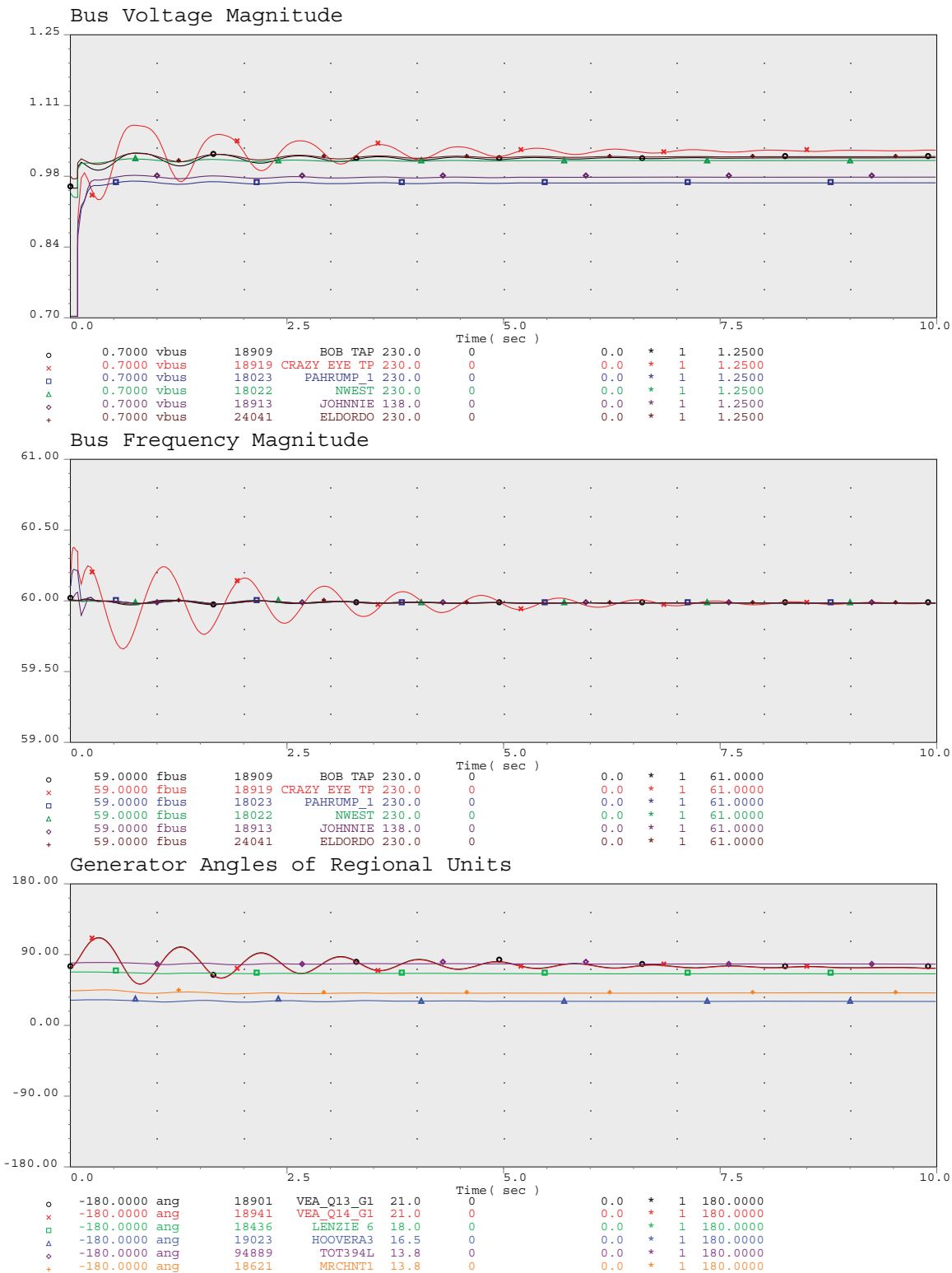
Figure 9 - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line (with SPS)



VEA CLUSTER ALPHA STUDIES  
 FROM CAISO HS CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
 CASIO SYSTEM INCLUDES UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
 Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
 Comstruc Pahrump-Crazy Eye Tp 230 & Pahrump-Gamebird 138 with RAS

BASE ON-PEAK CASE

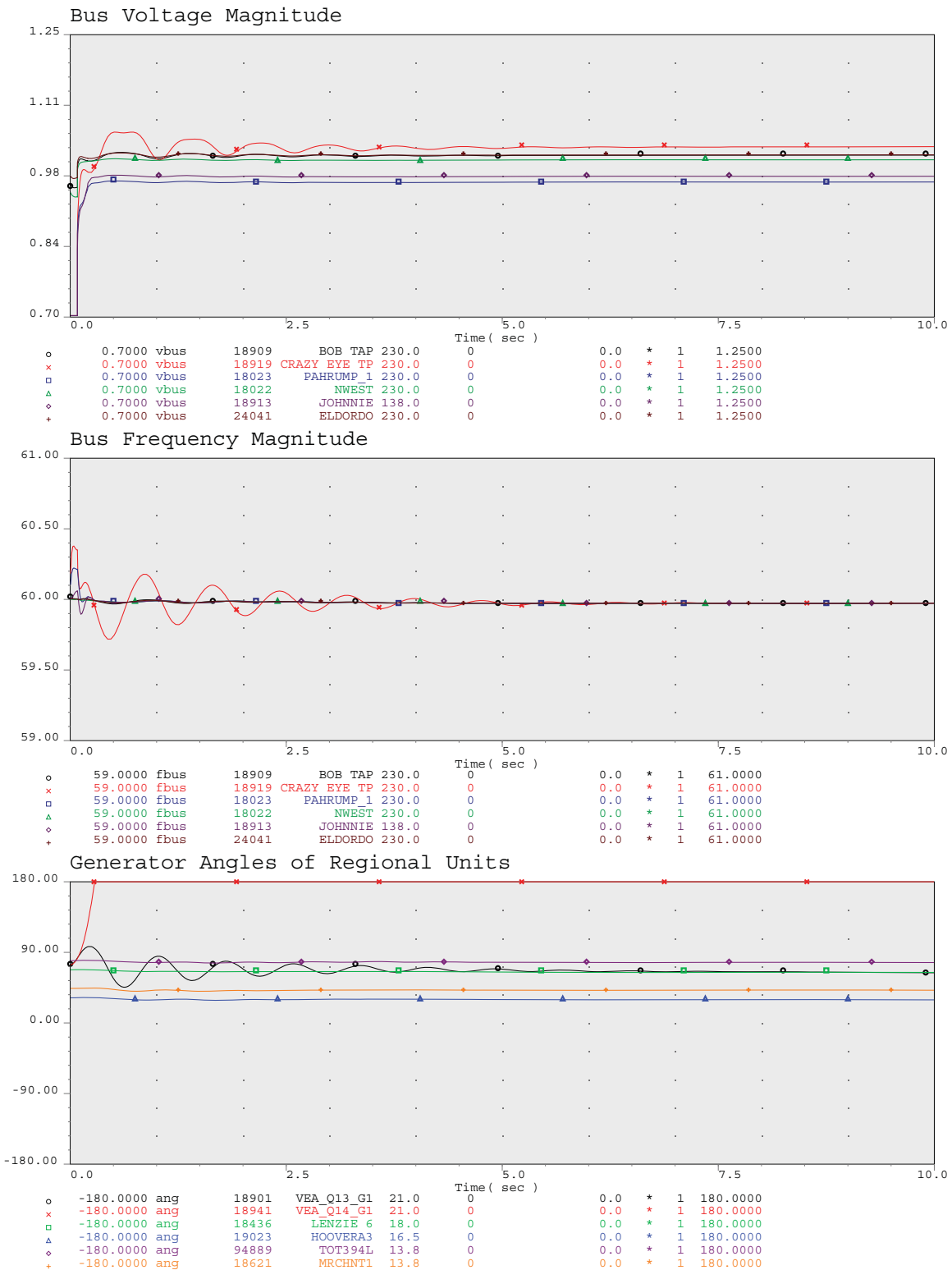
Figure 10 - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump 230/138-kV transformer #1 (without SPS)



VEA CLUSTER ALPHA STUDIES  
FROM CAISO HS CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
CASIO SYSTEM INCLUDES UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
Brkr Fail Pahrump 138/230Kv Tran Bnk 1 & Pahrump -Crazy Eye Tp 230

BASE ON-PEAK CASE

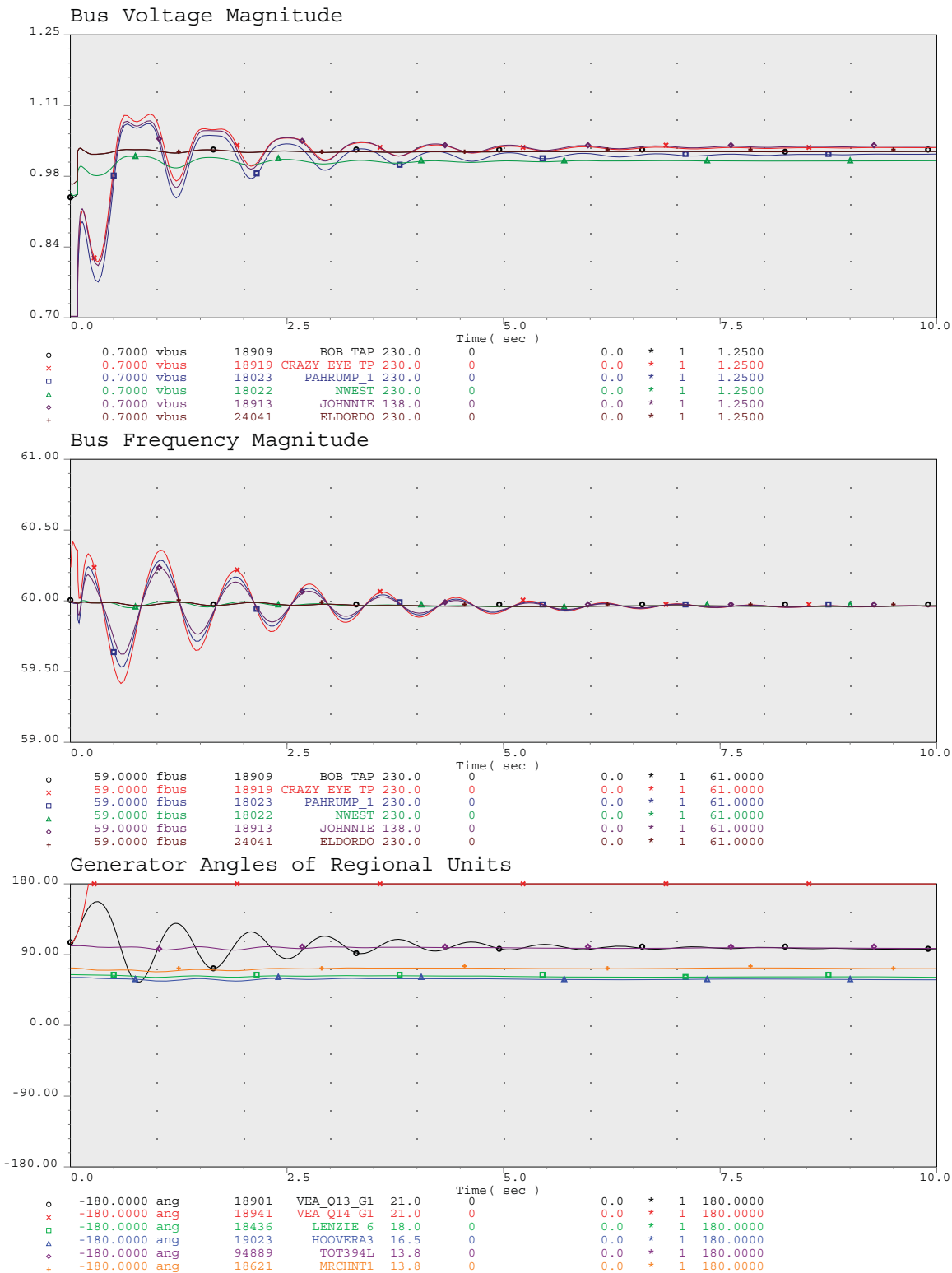
Figure 11- Crazy Eyes Tap-Pahrump 230-kV line and Pahrump 230/138-kV transformer #1 (with SPS)



VEA CLUSTER ALPHA STUDIES  
 FROM CAISO HS CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
 CASIO SYSTEM INCLUDES UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
 Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
 Brkr Fail Pahrump 138/230Kv Tran Bnk 1 & Pahrump -Crazy Eye Tp 230 with

BASE ON-PEAK CASE

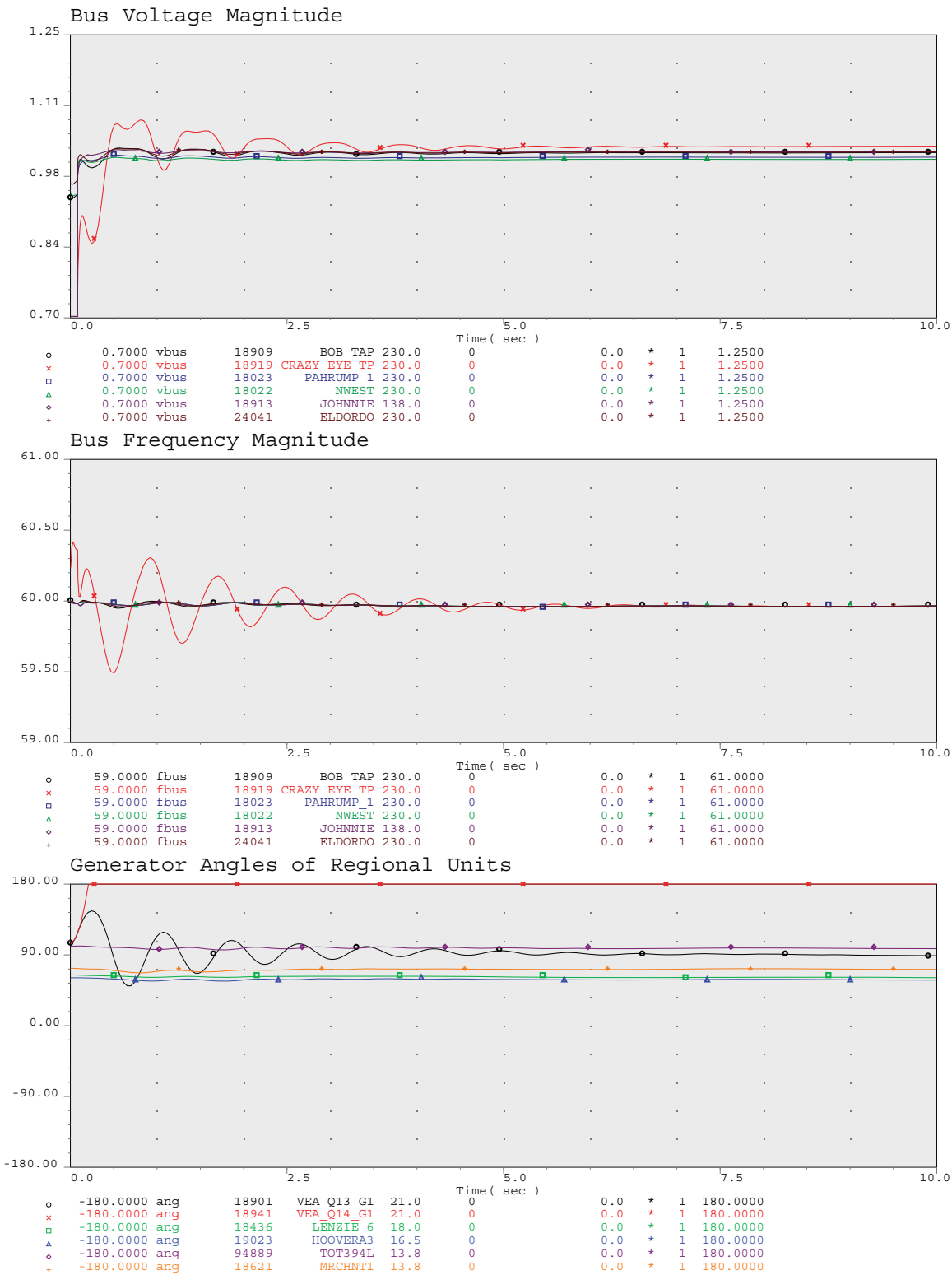
Figure 12- Crazy Eyes Tap-Bob Tap 230-kV line (with SPS)



VEA CLUSTER ALPHA STUDIES  
FROM CAISO OP CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
CAISO SYSTEM INCLUDED UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
Crazy Eye Tp-Bob Tap 230kV Line Ckt 1 with RAS

BASE OFF-PEAK CASE

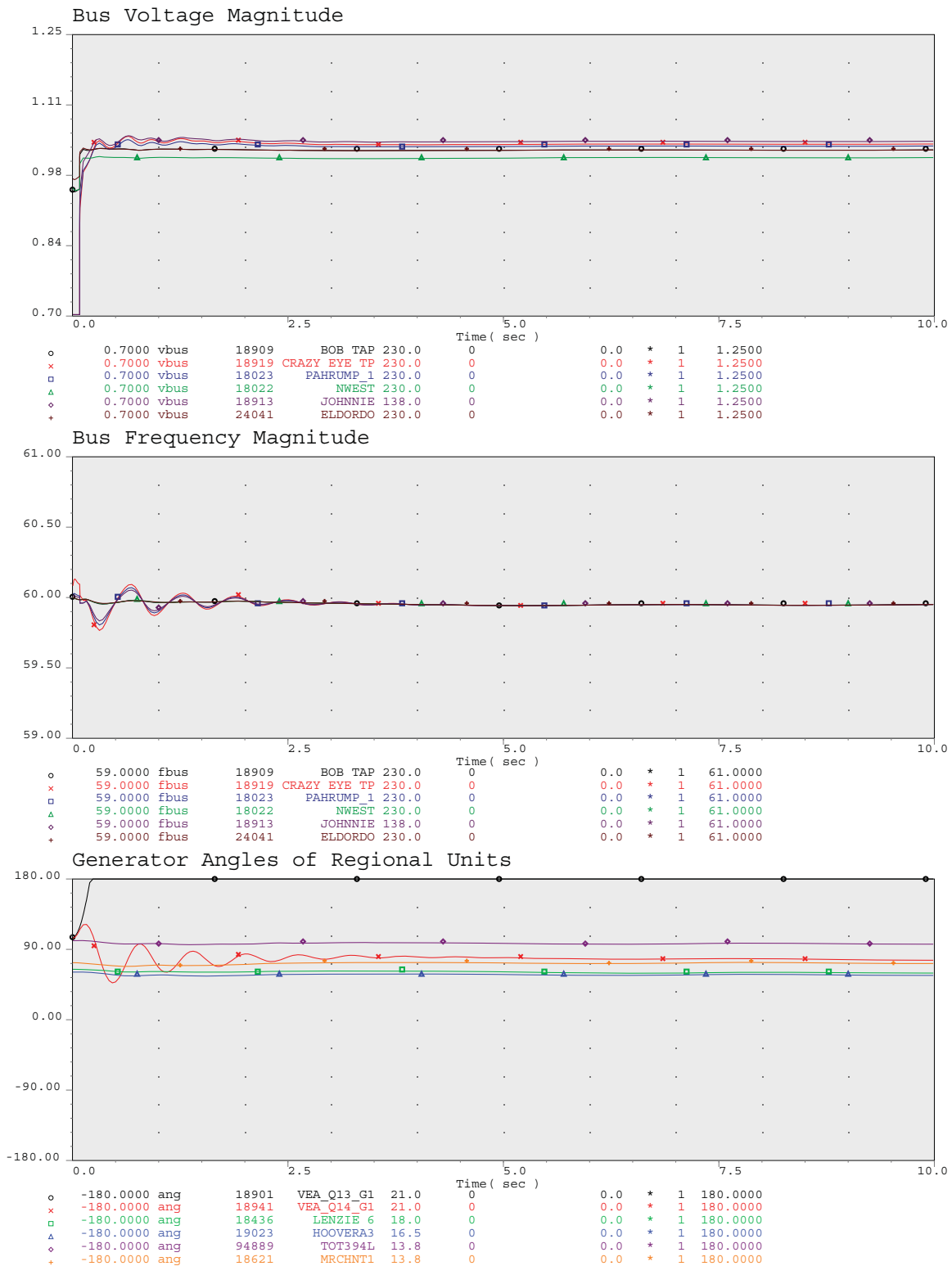
Figure 13 - Crazy Eyes Tap-Pahrump 230-kV line (with SPS)



VEA CLUSTER ALPHA STUDIES  
FROM CAISO OP CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
CAISO SYSTEM INCLUDED UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
Pahrump\_1-Crazy Eye Tp 230kV Line Ckt 1 with RAS

BASE OFF-PEAK CASE

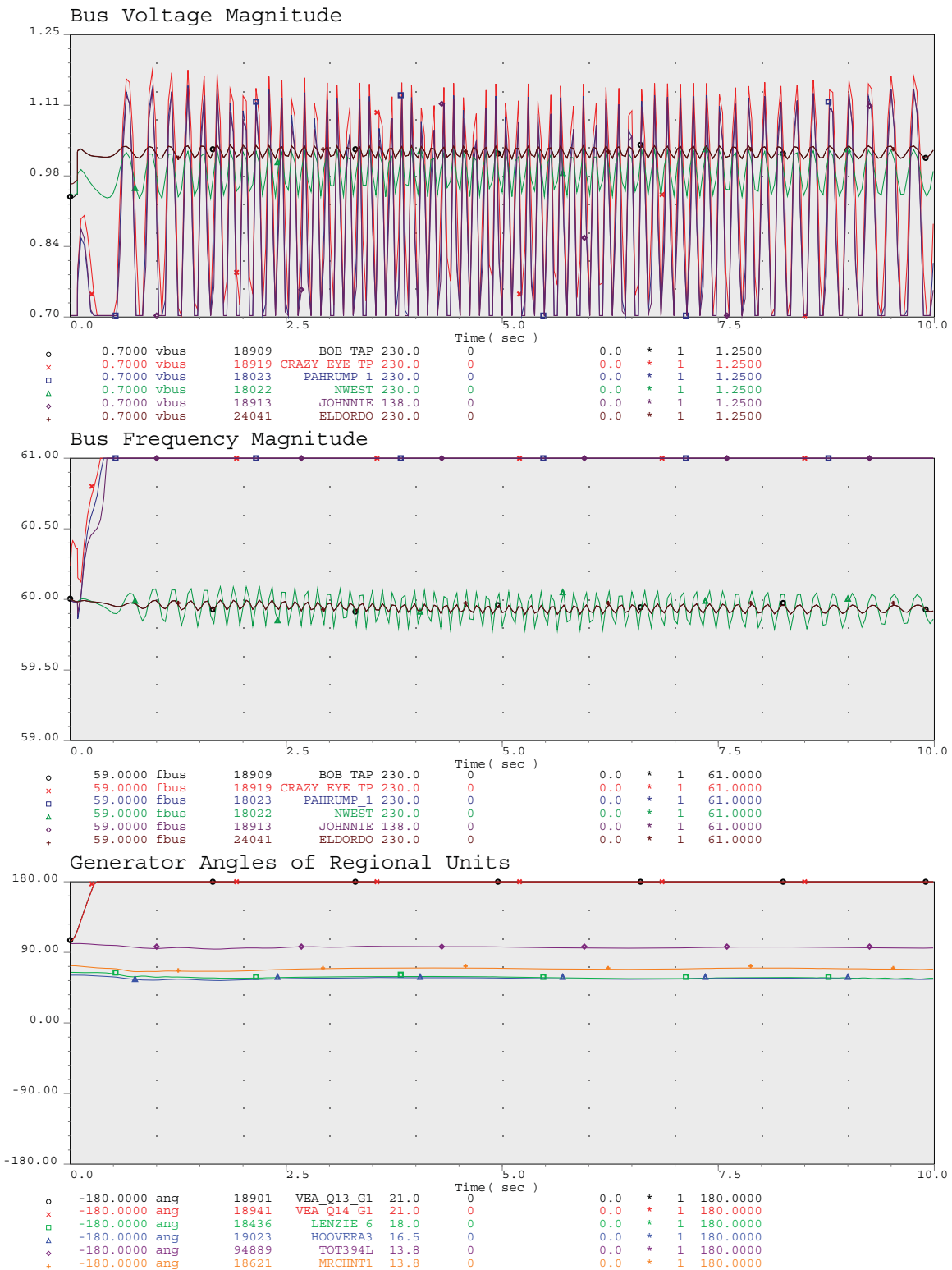
Figure 14 - Crazy Eyes Tap-Q13 230-kV line



VEA CLUSTER ALPHA STUDIES  
 FROM CAISO OP CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
 CAISO SYSTEM INCLUDED UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
 Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
 Crazy Eye Tp-Vea\_Q13 230kV Line Ckt 1

BASE OFF-PEAK CASE

Figure 15 - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (without SPS)

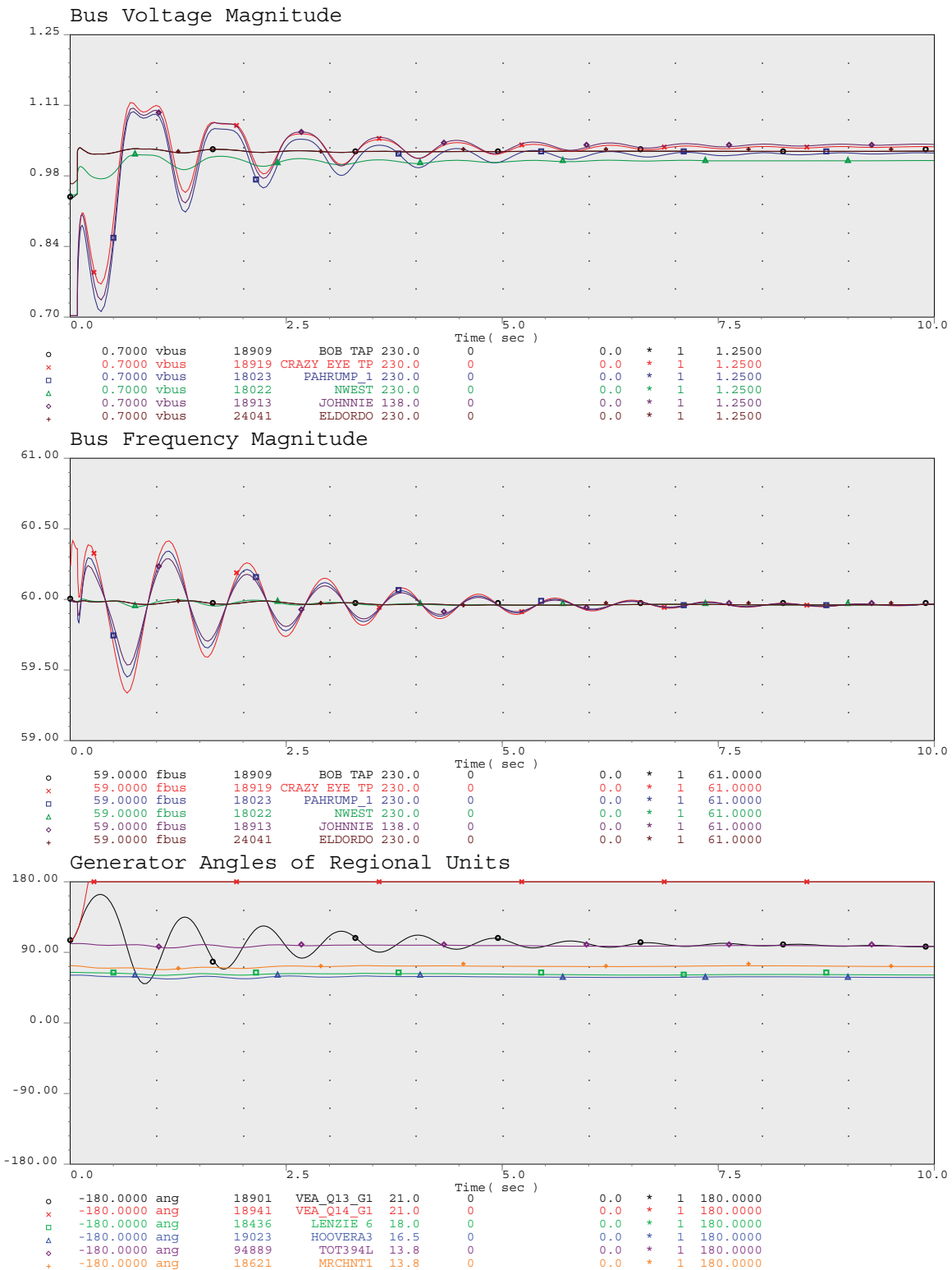


VEA CLUSTER ALPHA STUDIES  
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 Comstruc Crazy Eye Tp-Bob Tap 230 & Gmbd-Gmbd Ps-Sandy 138

BASE OFF-PEAK CASE



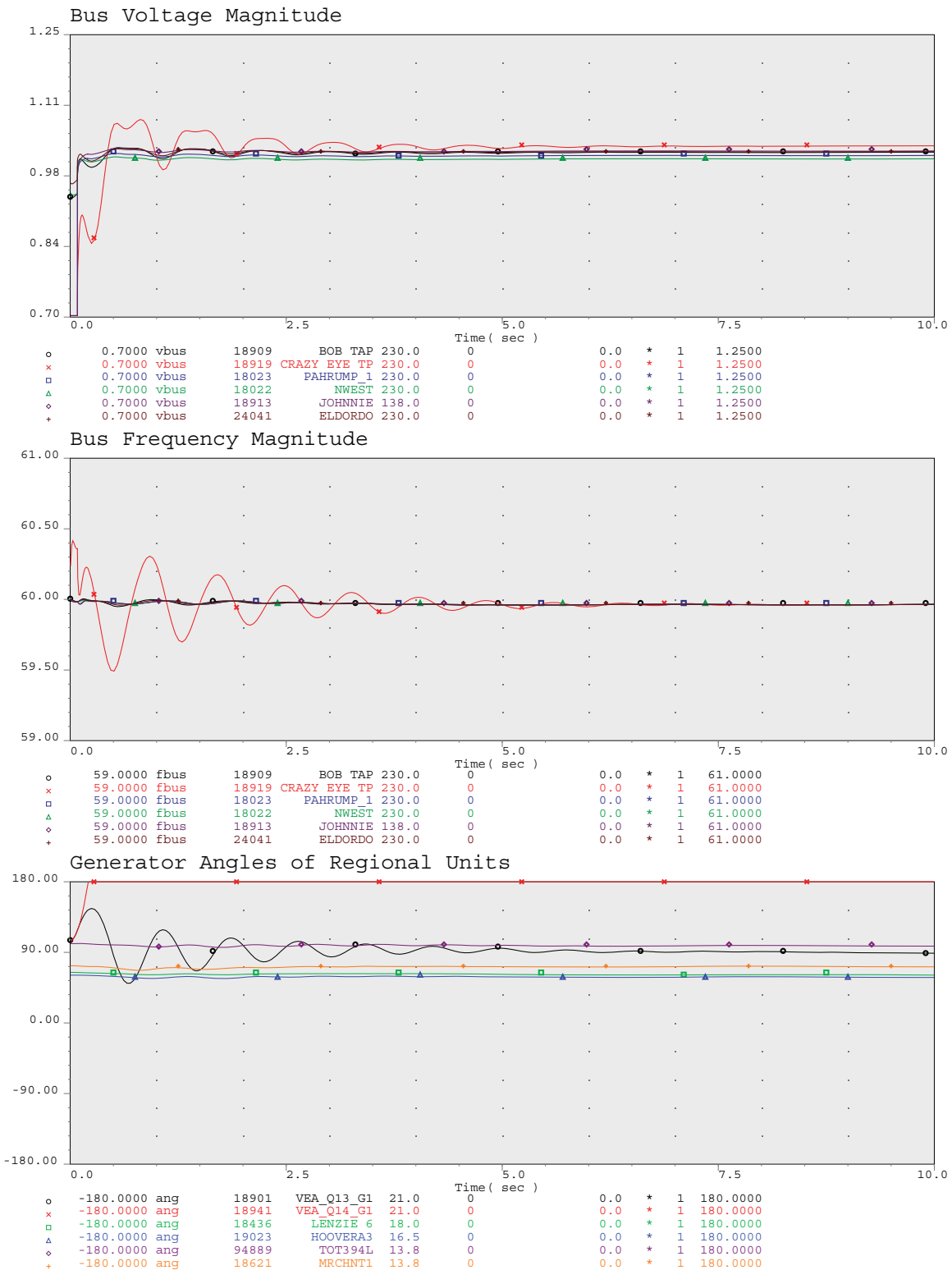
Figure 16 - Crazy Eyes Tap-Bob Tap 230-kV line and Gamebird-Sandy 138-kV line (with SPS)



VEA CLUSTER ALPHA STUDIES  
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 Comstruc Crazy Eye Tp-Bob Tap 230 & Gmbd-Gmbd Ps-Sandy 138 with RAS

BASE OFF-PEAK CASE

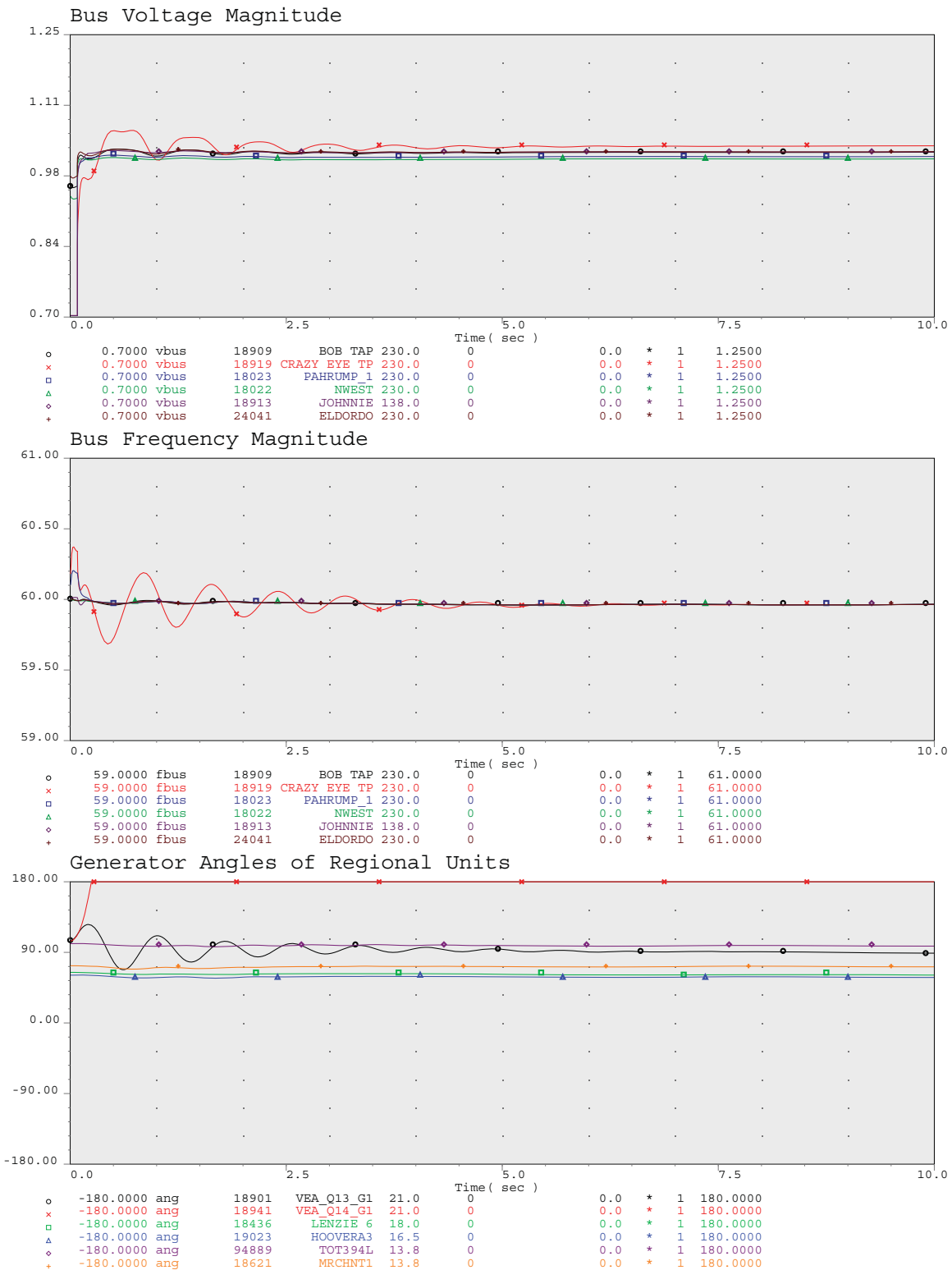
Figure 17 - Crazy Eyes Tap-Pahrump 230-kV line and Pahrump-Gamebird 138-kV line (with SPS)



VEA CLUSTER ALPHA STUDIES  
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 CAISO SYSTEM INCLUDED UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
 Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
 Comstruc Pahrump-Crazy Eye Tp 230 & Pahrump-Gamebird 138 with RAS

BASE OFF-PEAK CASE

Figure 18- Crazy Eyes Tap-Pahrump 230-kV line and Pahrump 230/138-kV transformer #1 (with SPS)



VEA CLUSTER ALPHA STUDIES  
 FROM CAISO OP CASE USED IN EAST-OF-PISGAH CLUSTER 4 STUDIES AND ECI "Q0" CASE  
 CAISO SYSTEM INCLUDED UPGRADES/ADDITIONS DISCUSSED IN E-O-P PHASE 1 REPORT  
 Q13 AND Q14 (1 UNIT) ON-LINE (810 MW (NET) INTERCONNECTED @ CRAZY EYES TAP;  
 Brkr Fail Pahrump 138/230Kv Tran Bnk 1 & Pahrump -Crazy Eye Tp 230 with

BASE OFF-PEAK CASE



**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA  
1516 NINTH STREET, SACRAMENTO, CA 95814  
1-800-822-6228 – WWW.ENERGY.CA.GOV**

**APPLICATION FOR CERTIFICATION  
FOR THE *HIDDEN HILLS SOLAR ELECTRIC  
GENERATING SYSTEM***

**DOCKET NO. 11-AFC-02**

**PROOF OF SERVICE  
(Revised 6/18/2012)**

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Board of County Supervisors  
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Nye County Water District  
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Interim General Manager  
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Suite 100  
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Michael L. Elliott  
Cultural Resources Specialist  
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Region  
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### DECLARATION OF SERVICE

I, Mary Finn, declare that on July 23, 2012, I served and filed copies of the attached Preliminary Staff Assessment Comments, Set 2, dated July 23, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: [www.energy.ca.gov/sitingcases/hiddenhills/index.html](http://www.energy.ca.gov/sitingcases/hiddenhills/index.html).

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

**(Check all that Apply)**

**For service to all other parties:**

- ☒ Served electronically to all e-mail addresses on the Proof of Service list;
- ☐ Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "e-mail preferred."

**AND**

**For filing with the Docket Unit at the Energy Commission:**

- ☒ by sending an electronic copy to the e-mail address below (preferred method); **OR**
- ☐ by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

**CALIFORNIA ENERGY COMMISSION – DOCKET UNIT**

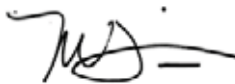
Attn: Docket No. 11-AFC-02  
1516 Ninth Street, MS-4  
Sacramento, CA 95814-5512  
[docket@energy.ca.gov](mailto:docket@energy.ca.gov)

**OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:**

- ☐ Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission  
Michael J. Levy, Chief Counsel  
1516 Ninth Street MS-14  
Sacramento, CA 95814  
[michael.levy@energy.ca.gov](mailto:michael.levy@energy.ca.gov)

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.



Mary Finn, CH2M Hill