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BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
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Application for Certification for the *IVANPAH SOLAR ELECTRIC GENERATING SYSTEM*

Docket No. 07-AFC-5

ERRATA TO THE PRESIDING MEMBER'S PROPOSED DECISION

After reviewing the comments submitted by the parties and the public on or before the September 2, 2010, deadline for comments, we incorporate the following changes[1] to the August 3, 2010 Presiding Member's Proposed Decision (PMPD):

INTRODUCTION

1. Page Introduction 2, last partial paragraph, revise as follows:

The ISEGS would be constructed in three phases: one 120-MW phase (known as Ivanpah 1) and two 125-MW phases (known as Ivanpah 2 and Ivanpah 3). Ivanpah 1 would be ~~920~~ **914** acres, Ivanpah 2 would be 1,097 acres, and Ivanpah 3 would be 1,227 acres. (Ex. 88, p. 2-2.) They would be located in southern California's Mojave Desert, to the west of Ivanpah Dry Lake, in San Bernardino County, 4.5 miles southwest of Primm, Nevada, and 3.1 miles west of the California-Nevada border in Townships 16 and 17 North, Range 14 East, San Bernardino Meridian.

2. Page Introduction 2, last full and partial paragraphs, revise as follows:

Raw ground water would be drawn from one of two wells, located ~~on the northwest corner of Ivanpah 1~~ **near the administration/warehouse building in the Construction Logistics Area (CLA)**, which would provide water to all three plants. Each well would have sufficient capacity to supply water for all three phases. Actual water use is not expected to exceed 100 acre feet per year for all three plants **during commercial operations**. Groundwater would go through a treatment system for use as boiler make-up water and to wash the heliostats. No wastewater would be generated by the system, ~~except for a small stream that would be treated and used for landscape irrigation~~.

[1] Where paragraphs are revised, changes are shown in **underline**/~~strikeout~~.

The Applicant indicates that it would take **about** 4**2**~~8~~ months to complete the project with construction **and engineering** expected to cost approximately ~~$300~~ **450** million, for ~~Ivanpah 1, $280 million for Ivanpah 2, and $520 million for Ivanpah 3~~ **each of** the three Ivanpah generating projects. Commercial operation would begin during the **fourth quarter of** ~~third quarter of~~ 2012~~0~~ **or first quarter 2013 at Ivanpah 1, in 2013 for Ivanpah 2, and in 2014 at Ivanpah 3** ~~and be completed during the fourth quarter 2013,~~ if approved by the Energy Commission **and the Bureau of Land Management**. The Applicant proposes to begin project construction during the fall of 2010. (Applicant's PMPD Comments, dated September 2, 2010.)

3. Page Introduction 8, sixth paragraph, revise as follows:

The Committee published the PMPD on August 3, 2010. The 30-day comment period on the PMPD ~~will~~ expire**d** on September 2, 2010. **On August 24, 2010, the Committee held a PMPD comment hearing and evidentiary hearing at which further evidence was taken.**

4. Page Introduction 8, following the last paragraph, insert the following:

Approximately 89 parties, individuals, and organizations commented on the PMPD. Their names are listed below. Those comments which raised substantial new environmental issues as well as selected other comments, are addressed throughout the remainder of this Decision. For substantively similar comments made by multiple commenters, our responses address the comment as a group, rather than individually. General comments to the effect that the Energy Commission should or should not approve the project were considered by the Commission but are not responded to individually.

***Parties*: Applicant, Basin & Range Watch, California Native Plant Society, CEC Staff, Center for Biological Diversity, San Bernadino County, Sierra Club, Western Watersheds**

***Non-Party Organizations*: American Lung Association, CA Dept of Fish and Game, Southern California Edison, Californians for Reliable Energy, Inc., Western Lands Project**

***Individuals*: Monica Alvarez, Janeen Armstrong, John Beetham, Tom Budlong, Chris Clarke, Craig Deutsche, David Dills, Amanda Finger, Jared Fuller, Kelly Fuller, Shaun Gonzales, Eric Hamburg, Richard Haney, Larry Hogue, Brendan Hughes, Timothy Ingalls, William C. McDonald, Thomas Meister, James Moody, LeRoy Murray, Susan Murray, Mary Ann Schroder, Rachel Shaw, Charlie Shrimplin, Michael and Joan Simmons, Charlotte Smith, Katherene Smith, Kim Snyder, Rebecca Swan**

***Saint Leo University Students*: Monica Alvarez, Brittany Brasseur, Marquetta Brown, Chris Cappuccilli, Allison Cary, Michael Castronuovo, Julia Cavallo, Zhen**

Feng Chen, Elise Clyburn, Karen Coradin, Jessyca Daniel, Erin Davis, Chamel Dayaa, Nick Dublino, Sarah Eade, Nicoletta Everett, Anella Garness, Heather Gick, Brittany Groubert, Jeraldine Guaba, Stephen Hallet, Luke Haniford, Laquida Jennings, Kelvin Justiniano, Joe Kaman, Matthew Kendrick, Brooke King, Bryan Komorowski, Leah MacPherson, Megan Mancuso, Ryan McArdell, Richie Miller, JiHae Moon, Courtney Murphy, Chelsea Olivero, John M. Peterson, Ryan Popovich, Konstantin Pyankov, Ryan Regidor, Catherine Sands, Sara Schmalz, Kevin Sullivan, Andre Swain, Jamal Thompson, Preston Walsh, Terry Whitted, Sarah Young.

PROJECT DESCRIPTION AND PURPOSE

5. Page Project Description 1, third paragraph, revise as follows:

Project construction will take place over approximately ~~48~~ **42** months with an average and peak workforce of 474 and 959, respectively, of construction craft people, supervisory, support, and construction management personnel on-site during construction. The peak construction site workforce level is expected to occur in Month 32. (Ex. 1, § 2.2-15.), There will be an estimated 90 full time positions at the completion of construction. Development and construction is expected to cost approximately $**1.8 billion** ~~1,100 million~~. Construction could begin during the fourth quarter of 2010 and be completed **by the first** ~~during the fourth~~ quarter **of** 2013. The facility will be operated 7 days a week, **up to** 14 hours per day.

6. Page Project Description 5, first paragraph, revise as follows:

Because the BLM expressed concern that the two original proposed well locations would interfere with monitoring and regulation of the Primm Valley Golf Club Colosseum wells, the applicant relocated the proposed wells ~~4,250 feet south of their original location to the northwest corner of Ivanpah 1~~ **further to the west to be near the administration/warehouse building**.

7. Page Project Description 8, first paragraph, revise as follows:

In accordance with the Interconnection Agreement between the Applicant**, the California Independent System Operator (California ISO),** and SCE, the existing Eldorado-Baker-Cool Water-Dunn Siding-Mountain Pass 115-kV line would loop in and out through the proposed Ivanpah Substation to **enable** interconnect**ion of** the project to the SCE transmission grid **as requested by the Applicant**. This 115-kV line is currently aligned between the Ivanpah 1 and 2 sites along a northeast-southwest right-of-way. In order to accommodate ~~the total anticipated~~ **up to** 1,400 MW **of** load generation ~~by ISEGS and five other planned renewable energy generation projects in the region, the California Independent System Operator (California ISO)~~ **that may seek interconnection to the California ISO-controlled transmission system owned by SCE in the Ivanpah Dry Lake Area, SCE** has identified approximately 36 miles of

transmission line within California and Nevada that would need to be upgraded from 115 kV to 220 kV. SCE is in the process of developing a project to upgrade the transmission system, which includes removing the existing 115-kV transmission lines and constructing a new double-circuit 220-kV transmission line between the existing Eldorado Substation in Nevada and the proposed SCE Ivanpah Substation in California. (Ex. 300, p. 3-13; SCE comment letter dated 9-2-10.)

TRANSMISSION SYSTEM ENGINEERING

8. Page Transmission System Engineering 2, second full paragraph, revise as follows:

The system impact studies were performed by **the California ISO and** SCE at the request of the Applicant, to identify the transmission system impacts of **interconnecting** Ivanpah #1, #2, and #3 ~~on~~ **to** SCE's 115/220/500-kV system. The studies included power flow, ~~sensitivity, and~~ short circuit studies, and transient **stability** and post-transient **voltage** analyses (Ivanpah #1, #2 and #3, 2008a, System Impact Studies). The studies modeled the proposed project for a net output of 100 MW for Ivanpah #1**, 114 MW for Ivanpah** ~~and~~ #2, 200 MW for Ivanpah #3. The base cases included all ~~CAISO~~ **California ISO-**approved major SCE transmission projects~~, the transmission system for the Los Angeles Department of Water and Power, and major path flow limits of Southern California Import Transmission, East-Of-River, and West-of-River~~. The studies considered light load conditions with generation patterns and Path 46 imports maximized to identify the extent of potential congestion and fully stress the SCE system in the area where the Ivanpah project phases are interconnecting. The detailed study assumptions are described in the studies. The power flow studies were conducted with and without Ivanpah phases connected to SCE's grid at the proposed Ivanpah Substation, using 2013 heavy summer and 2013 light spring base cases. (Ex. 300, pp. 7.4-5 – 7.4-6.)

9. Page Transmission System Engineering 4, before subsection 2.b., insert the following:

Single Outage Contingency (N-1): **With Base Case (N-) mitigation in place, the loss of the new 36-mile Eldorado-Ivanpah 220 kV transmission line (modeled as energized at 115kV Ivanpah #1 and #2) or loss of the Eldorado 220/115kV transformer bank, N-1 contingency condition, would disconnect the Ivanpah and Mountain Pass areas from the Eldorado substation thereby triggering thermal overload, transient instability, and voltage collapse problems.**

Mitigation:

- **Install telecommunication facilities and corresponding protection relays for line monitoring and data communication needed to implement an SPS to trip Ivanpah #1 and #2 following loss of the Eldorado-Ivanpah 220 kV**

transmission line (modeled as energized at 115kV Ivanpah #1 and #2) or loss of the Eldorado 220/115kV transformer bank.

10. Page Transmission System Engineering 4, second through fifth full paragraphs, revise as follows:

Mitigation: ~~A~~ **The** previously implemented SPS **for Ivanpah #1 and #2** will need to be modified to reflect the changes associated with the facility upgrades triggered by Ivanpah #3. The SPS should be capable of tripping ~~the Mountain Pass 115 kV line, the new Ivanpah substation, the new Ivanpah 220 kV transmission line and~~ Ivanpah **#1, #2, and** #3 **following loss of the new 36-mile Eldorado-Ivanpah 220kV transmission line.**

Single Outage Contingency (N-1): Loss of one Ivanpah 115/220kV transformer bank results in loading the remaining transformer bank beyond its maximum emergency capability.

Mitigation: ~~Modify a~~ **The** previously implemented SPS **for Ivanpah #1 and #2 will be expanded** to ~~be capable of tripping Mountain Pass 115 kV new Ivanpah substation, New Ivanpah 220 kV transmission line or~~ Ivanpah #3 ~~of the project~~ under loss of one Ivanpah 115/220 kV transformer bank by opening the corresponding unit circuit breaker. (Ex. 300, p. 7.4-7.)

GREENHOUSE GAS EMISSIONS

11. Page Greenhouse Gas Emissions 1, last paragraph, revise as follows:

The generation of electricity using fossil fuels, even in **auxiliary equipment (such as auxiliary boilers or back-up generators)** ~~a back-up generator~~ at a thermal solar plant, ~~(such as auxiliary boilers or back-up generators)~~ produces ~~air emissions known as~~ greenhouse gases in addition to the criteria air pollutants that have been traditionally regulated under the federal and state Clean Air Acts. California is actively pursuing policies to reduce GHG emissions**; among them is a policy to add** ~~that include adding~~ non-GHG emitting renewable generation resources to the system.

12. Page Greenhouse Gas Emissions 2, first bulleted paragraph, revise as follows:

- Whether ISEGS GHG construction **and operation** emissions will have significant impacts;

13. Page Greenhouse Gas Emissions 3, last paragraph, revise as follows:

Senate Bill (SB) 1368 of 2006, and regulations adopted by the Energy Commission and the Public Utilities Commission pursuant to the bill, prohibit utilities from entering into

long-term commitments with any base load facilities that exceed an Emission Performance Standard (EPS) of 0.500 metric tonnes of CO_2 per megawatt-hour (this is the equivalent of 1100 pounds of CO_2/MWh). (Pub. Util. Code, § 8340 et seq.; Cal. Code Regs., tit. 20, § 2900 et seq.; CPUC D0701039.) Currently, the EPS is the only LORS that has the effect of limiting power plant GHG emissions. **The ISEGS is a solar project with a nightly shutdown so it will operate at less than a 60 percent capacity factor. It therefore is not subject to the requirements of SB 1368, which exempts facilities operating at less than a 60 percent capacity factor. Nonetheless, the ISEGS, at 0.029 MTCO$_2$e /MWh, would easily meet the EPS standard.** ~~ISEGS is exempt from SB 1368 because it would operate at or below a 60 percent capacity factor.~~

14. Page Greenhouse Gas Emissions 5, first paragraph after Greenhouse Gas Table 1, revise as follows:

There is no adopted, enforceable federal or state LORS applicable to ISEGS construction emissions of GHG. ~~Nor is there a quantitative threshold over which GHG emissions are considered "significant" under CEQA.~~ Nevertheless, there is guidance from regulatory agencies on how the significance of such emissions should be assessed. For example, the most recent guidance from CARB staff recommends a "best practices" threshold for construction emissions. [CARB, Preliminary Draft Staff Proposal, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act (Oct. 24, 2008), p. 9]. Such an approach is also recommended on an interim basis, or proposed, by major local air districts.

15. Page Greenhouse Gas Emissions 6, last paragraph and Greenhouse Gas Table 2, revise as follows:

For this solar project the primary fuel, solar energy, is greenhouse gas free, but there is a natural gas-fired steam boiler for each of the three plants. The proposed ISEGS project would cause GHG emissions from **heliostat field** ~~power block~~ maintenance activities, including mirror cleaning and vegetation removal, weekly testing of the emergency generator and firewater pump, **daily** ~~one hour per day of~~ operation of each boiler, and employee trips. (Ex. 200, p. 6.1-64) Operations GHG emissions are shown in **Greenhouse Gas Table 2**. All emissions are converted to CO_2-equivalent and totaled.

Greenhouse Gas Table 2
Estimated ISEGS Potential Operating Greenhouse Gas Emissions

	CO_2-equivalent ($MTCO_2e$ [a] **per year)**
Boilers	~~25,458~~ **23,549**
Emergency Generator Engines	~~346~~ **260**
Fire Pump Engine	15
Maintenance Vehicles	~~474~~ **385**
Worker Vehicles	1118
Delivery and Waste Haul Vehicles	22
Equipment Leakage (SF_6)	10
Total Project GHG Emissions – $MTCO_2e$ [b]	~~**27,444**~~ **25,359**
Facility MWh per year [c]	~~960,000~~ **888,000**
Facility GHG Performance ($MTCO_2e$ /MWh)	0.029

Source: Ex. ~~200, p. 6.1-65, Greenhouse Gas Table 3~~ 315, p. 4-25, Addendum Greenhouse Gas Table 1
[a] One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.
[B] the vast majority of the CO2E emissions, over 99 percent, are CO_2 from these emission sources.
[c] Approximately a 28 percent capacity factor. BSE2007a.

16. Page Greenhouse Gas Emissions 7, first paragraph, revise as follows:

The proposed project would be permitted, on an annual basis, to emit over ~~27,000~~ **25,000** metric tonnes of CO_2-equivalent per year if operated at its maximum permitted level. **The ISEGS is a solar project with a nightly shutdown so it will operate at less than a 60 percent capacity factor. It therefore is not subject to the requirements of SB 1368 which exempts facilities operating at less than a 60 percent capacity factor.** ~~ISEGS is a solar project with a nightly shutdown so it will operate less than 60 percent of capacity; therefore, the project is not subject to the requirements of SB 1368 and the Greenhouse Gas Emission Performance Standard.~~ Nonetheless, the ISEGS, at 0.029 $MTCO_2e$ /MWh, would easily meet **the Greenhouse Gas Emission Performance Standard required by SB 1368, which is 0.5 MTCO2e/MWh.** ~~" both.~~

17. Page Greenhouse Gas Emissions 8, Greenhouse Gas Table 3, remove the minus sign from the last cell in the table, to now read:

(36,173)

18. Page Greenhouse Gas Emissions 12, Findings 1 and 2, revise as follows:

1. The GHG emissions from the ISEGS project construction are **estimated** ~~likely~~ to be 17,779 $MTCO_2e$ during the 4-year construction period, which is the annual equivalent of 4,445 $MTCO_2e$.

2. **The construction GHG emissions would be minimal in comparison to the GHG emission reductions that the project would create in its lifetime.** ~~There~~

~~is no numerical threshold of significance under CEQA for construction-related GHG emissions.~~

19. Page Greenhouse Gas Emissions 13, Findings 8 and 9, revise as follows:

8. The maximum annual CO_2 emissions from ISEGS operation will be ~~27,444~~ **25,359** $MTCO_2e$, which constitutes an emissions performance factor of 0.029 $MTCO_2e$ / MWh.

9. **The ISEGS is a solar project that would operate at less than a 60 percent capacity factor, and therefore is not subject to the requirements of the SB 1368 Emissions Performance Standard which exempts facilities operating at less than a 60 percent capacity factor. Nonetheless, the ISEGS would easily meet the Greenhouse Gas Emission Performance Standard required by SB 1368**. ~~The SB 1368 EPS is not applicable to ISEGS GHG emissions because the project will be shut down nightly and will operate at or below a 60 percent capacity factor.~~

20. Page Greenhouse Gas Emissions 13, Conclusion of Law 4, revise as follows:

4. ***The* ISEGS is a solar project with a nightly shutdown so it will operate at less than a 60 percent capacity factor. It therefore is not subject to the requirements of SB 1368, which exempts facilities operating at less than a 60 percent capacity factor. Nonetheless, the ISEGS, at 0.029 MTCO2e /MWh, would easily meet the Greenhouse Gas *Emission Performance Standard* required by SB 1368, which is 0.5 MTCO2e/MWh.** ~~The SB 1368 EPS does not apply to ISEGS, but if it did, ISEGS GHG emissions will not exceed the EPS limit.~~

AIR QUALITY

21. Page Air Quality 5, third paragraph, revise as follows:

The emissions estimates in Air Quality Table 3 incorporate the fugitive dust control measures contained in Condition **AQ-SC3**. Staff evaluated the~~se~~ **applicant's original** emission estimates and deemed them reasonable, with the caveat that ~~that~~ the fugitive dust emissions ~~estimate~~ **may have been** ~~be~~ underestimated. Notably, ~~S~~**staff** determined that aggressive mitigation **would be** ~~is~~ necessary to ensure that the PM10 annual emissions during construction would not be greater than 100 tons per year and exceed General Conformity applicability thresholds thereby triggering a formal conformity determination under the federal Clean Air Act General Conformity Rule. (Ex. 300, pp. 6.1-13, 6.1-22.) As a result, we have adopted Conditions of Certification **AQ-SC1** through **AQ-SC 5** to mitigate the potentially significant impacts **and ensure compliance with the General Conformity Rule.**

22. Page Air Quality 8, last paragraph, revise as follows:

The emissions estimates in **Air Quality Table 5** incorporate the fugitive dust control measures contained in Condition **AQ-SC7**. Staff evaluated the~~se~~ **applicant's original** emission estimates and determined that that the fugitive dust emissions ~~estimate~~ may **have been** ~~be~~ underestimated. As with the construction-related emissions, s~~S~~taff determined that aggressive mitigation **would be** ~~is~~ necessary to ensure that the PM10 annual emission during operation would not be greater than 100 tons per year and would not exceed General Conformity applicability thresholds thereby triggering a formal conformity determination under the federal Clean Air Act General Conformity Rule. Staff also determined that there is ~~also~~ potential for localized exceedances of the federal PM10 AAQS. As a result, we have adopted Conditions of Certification **AQ-SC6** through **AQ-SC10** to mitigate the potentially significant impacts **and ensure compliance with the General Conformity Rule**. (Ex. 300, pp. 6.1-14 through 6.1-15, 6.1-22 through 6.1-24, 6.1-38.) **Staff also considered the loss of soil crusts due to disturbance of the ISEGS site, physical or biotic, during the evaluation of potential project fugitive dust impacts. This potential loss is a major factor in the staff's recommendation to use soil binders both during construction and operation (Conditions of Certification AQ-SC3 and AQ-SC7 which we adopt) that will mitigate the loss of dust control from the disturbance of the natural soil crusts.**

23. Page Air Quality 10, last paragraph, revise Air Quality Table 6 and following two paragraphs as follows:

Air Quality Table 6
Project Operation Emissions Impacts

Pollutants	Avg. Period	Impacts ($\mu g/m^3$)	Background [a] ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	Standard ($\mu g/m^3$)	Percent of Standard
NO_2	1-hr	~~150.4~~ 153.4	73.3	~~223.4~~ 226.4	339	~~66%~~ 67%
	Annual	0.1	7.3	7.4	57	13%
PM10	24-hr	3.3	96	99.3	50	199%
	Annual	0.5	12.7	13.2	20	66%
PM2.5 [c]	24-hr [b]	0.2	12.9	13.1	35	37%
	Annual	0.0	4.5	4.5	12	38%
CO	1-hr	321	4,025	4,346	23,000	19%
	8-hr	55	1,367	1,422	10,000	14%
SO_2	1-hr	3.9	94.3	98.2	665	15%
	24-hr [b]	0.1	13.1	13.2	105	13%
	Annual	0.0	2.7	2.7	80	3%

Source: CH2ML 2008h: Ex. 88, p 3-2.
Notes:
[a] Background values have been adjusted per staff recommended background concentrations shown in **Air Quality Table 5**.
[b] Maximum 24-hour hour PM2.5 and SO_2 concentrations occur under fumigation conditions.
[c] PM2.5 impacts were not remodeled to include maintenance emissions like the other pollutants, the results presented are stationary source emission only from the original AFC modeling analysis. With the maintenance PM2.5 emission the PM2.5 results would be higher than shown but lower than the PM10 results as the PM2.5 emissions are less than the PM10 emissions. Therefore, the PM2.5 impacts with maintenance emissions would not create new exceedances of the ambient air quality standards.

Staff evaluated the Applicant's results and again, as with Staff's evaluation of construction emission impacts, determined that the operating NOx, VOC, and PM emissions are potentially CEQA significant and require mitigation. The modeling analysis shows that with implementation of the recommended ~~fugitive dust~~ mitigation measures contained in Conditions of Certification **AQ-SC6** and **AQ-SC7**, ISEGS operation is not predicted to cause significant violations of the federal AAQS or cause significant NEPA and CEQA impacts. (Ex. 300, p. 6.1-23 through 6.1-24.)

Additionally, implementation of Conditions of Certification **AQ-SC8** through **AQ-SC10** will further ensure that potential impacts are insignificant. Condition **AQ-SC8** will ensure that the license is amended as necessary to incorporate changes to the air quality permits. Condition **AQ-SC9** requires **new** engines to meet model year EPA/ARB Tier emission standards for the year purchased. Condition ~~AQ~~**AQ-SC10 would**~~will ensure that the boiler operation does not exceed the amount that was modeled in the Applicant's air quality modeling analysis and to~~ formalize the Applicant's assertion in the Application for Certification that "[h]eat input from natural gas will not exceed 5 percent of the heat input from the sun, on an annual basis." (Exs. 1, p. 5.1-1, 300, pp. 6.1-28, 6.1-39.)

24. Page Air Quality 12, last partial paragraph, revise as follows:

There are, however, several proposed projects near the project site including several other renewable energy facilities (solar and wind), an airport, a high speed train, a new commercial/residential development in Jean, **Nevada**, and other long-term projects with minimal air quality impacts, and temporary projects with no long-term air quality impacts. Staff determined that in general, most of these projects would create minimal long-term emissions, but construction emissions of the other renewable energy facilities, the airport, and the large development in Jean**, Nevada,** will likely have high temporary emissions from construction vehicles and fugitive dust. Staff further determined that in the long-term, several of the developments should cause beneficial impacts such as the high-speed train reducing traffic emissions on I-15, and the renewable energy projects reducing emissions within the area of the Western Electricity Coordinating Council.

25. Page Air Quality 13, last paragraph, revise as follows:

~~No public or agency comments were received. However,~~ Intervenor Basin Range and Watch asked about the source and quantity of water for dust control during operation and construction and recommended that this information should be provided. Staff responded that the source of water for dust control during plant construction and operation is assumed to be the same on-site ground water wells used for other plant water needs. Staff further explained that ~~the~~ even though the Applicant estimated 128 acre-feet of use during the 15 months of initial grading for the three project phases based on a 5 day per week construction schedule and 5 months of initial grading per construction phase, the Applicant did not provide estimates of water use for dust control during the rest of the construction period or for ongoing operations. Staff advised Basin and Range Watch that Staff modified recommended Conditions of Certification **AQ-**

SC3 and **AQ-SC7** to both increase dust control efficiency and minimize water use through the required use of polymeric dust suppressants on the site's unpaved roads and other disturbed surfaces to create and maintain stabilized surfaces during project construction and operation. We have adopted those conditions are recommended. (Ex. 300, pp. 6.1-37 – 6.1-38.)

National Park Service (NPS) expressed concern that the air quality analysis does not evaluate the air quality impacts to the Mojave National Preserve with respect to visibility and nitrogen deposition. NPS contends that fugitive dust emissions and primary pollutant emissions from construction equipment and point sources have the potential to impact visibility at the park. NPS stated that recent studies evaluating the effects of nitrogen deposition in both Mojave National Preserve and nearby Joshua Tree National Park indicate that nitrogen deposition may be causing negative effects to these ecosystems. There are a number of reasons why visibility and deposition modeling was not performed for the analysis of project impacts, including the following:

- **The project is a minor source and does not trigger Prevention of Significant Deterioration (PSD) permitting and associated visibility modeling analysis requirements, and there are no other regulatory requirements to perform visibility modeling.**
- **Even if the project were a major source triggering PSD permitting, there are no Class 1 Areas located within 100 km of the site; the Mojave National Preserve is not a listed Class 1 Area and thus does not trigger visibility modeling.**
- **The facility's maximum permitted stationary source emissions of NOx, PM, and SOx are less than 12, 6 and 2 tons per year; the predominate wind patterns in the site area are directly away from the Mojave National Preserve; and the maximum project impacts all occur well east and outside of the portion of the Clark Mountain portion of the Preserve and north of the project site, well away from the main portion of the Preserve.**

When considered together, we conclude that the Mojave National Preserve will not be significantly impacted from the ISEGS project. (FEIS p. A.1-90)

26. Page Air Quality 18, Condition AQ-SC5, revise as follows:

AQ-SC5 Diesel-Fueled Engine Control: The AQCMM shall submit to the CPM~~,~~ in the **Monthly Compliance Report** ~~MCR,~~ a construction mitigation report that demonstrates compliance with the **Air Quality Construction Mitigation Plan (AQCMP)**~~following~~ mitigation measures for purposes of controlling diesel construction-related emissions. Any deviation from the **AQCMP**~~following~~ mitigation measures shall require prior ~~and~~ CPM notification and approval.

~~a. All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine~~

meets the conditions set forth herein.

b. All construction diesel engines with a rating of 50 hp or higher shall meet, at a minimum, the Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. This good faith effort shall be documented with signed written correspondence by the appropriate construction contractors along with documented correspondence with at least two construction equipment rental firms. In the event that a Tier 3 engine is not available for any off-road equipment larger than 100 hp, that equipment shall be equipped with a Tier 2 engine, or an engine that is equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 2 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "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 to Tier 2 equivalent emission levels and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or

   2. The construction equipment is intended to be on site for 5 days or less.

   3. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not possible.

c. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item "b" occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, 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 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.~~

~~d. All heavy earth-moving equipment and heavy duty construction-related trucks with engines meeting the requirements of (b) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.~~

~~e. All diesel heavy construction equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.~~

~~f. Construction equipment will employ electric motors when feasible.~~

Verification: The AQCMM shall include in the Monthly Compliance Report (**COMPLIANCE-6**) **the following to demonstrate control of diesel construction-related emissions:**

A. A summary of all actions taken to maintain compliance with this condition;

B. A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained; and

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

The following off-road diesel construction equipment mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by AQ-SC2.

a. All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.

b. All construction diesel engines with a rating of 50 hp or higher shall meet, at a minimum, the Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. ~~This good faith effort shall be documented with signed written correspondence by the appropriate construction contractors along with documented correspondence with at least two construction~~

~~equipment rental firms~~. **In the event that a Tier 3 engine is not available for any off-road equipment larger than 100 hp, that equipment shall be equipped with a Tier 2 engine, or an engine that is equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 2 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "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 to Tier 2 equivalent emission levels and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or**

2. **The construction equipment is intended to be on site for 5 days or less.**

3. **The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical** ~~possible~~.

c. **The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item "b" occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, 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 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.**

d. **All heavy earth-moving equipment and heavy duty construction-**

related trucks with engines meeting the requirements of (b) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.

e. **All diesel heavy construction equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.**

f. **Construction equipment will employ electric motors when feasible.**

27. Page Air Quality 20, Condition AQ-SC6, revise as follows:

AQ-SC6 The project owner, when obtaining dedicated on-road or off-road vehicles for mirror washing activities and other facility maintenance activities, shall only obtain new model year vehicles that meet California on-road vehicle emission standards or appropriate U.S.EPA/California off-road engine 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** ~~production~~, the project owner shall submit to the CPM a copy of the 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**).

28. Page Air Quality 21, Condition AQ-SC7 revise as follows:

AQ-SC7 The project owner shall provide a site Operations Dust Control Plan, including all applicable fugitive dust control measures identified in the verification of **AQ-SC3** that would be applicable to reducing fugitive dust from ongoing operations~~;~~ that:

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.

The site Operations ~~fugitive~~ Dust Control Plan shall include the use of durable non-toxic soil stabilizers on all regularly used unpaved roads and disturbed off-road areas, or alternative methods for stabilizing 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 or 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 performance and application of the fugitive dust controls shall also be measured against and 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 BLM's Authorized Officer and the CPM for review and approval a copy of the site Operations Dust Control 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. **Within**~~At least~~ 60 days after commercial operation, the project owner shall provide to the BLM's Authorized Officer and 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.

WORKER SAFETY/FIRE PROTECTION

29. Page Worker Safety/Fire Protection 4, last partial paragraph, revise as follows:

The evidence shows that these resources comprise adequate fire protection and emergency response capabilities. (*Id.*) Conditions of Certification **WORKER SAFETY-1** and **-2** require the project owner, prior to construction and operation of the project, to provide the final Fire Prevention Program to BLM's Authorized Officer, the Compliance Project Manager, and the local fire authorities. These entities will then confirm its adequacy. (Exs. 300, pp. 6.14-12 to 6.14-13; 303, pp. 43 to 44.) Finally, the record shows that the limited fire risks and potential for hazardous materials incidents at the facility do not pose significant **direct impacts** ~~added demands~~ on local fire protection services. (Ex. 300, p. 6.14-14.) **In combination with other proposed projects in the region, however, the project may contribute to a cumulatively significant impact on fire protection and emergency services. To mitigate any such impact to insignificant levels, we adopt Conditions Worker Safety-7 and Worker Safety-8, requiring an independent determination of the proper amount of compensation to be paid to the San Bernardino County Fire Department.**

30. Page Worker Safety/Fire Protection 5, just before Findings of Fact: insert:

3. Public Comment

The County of San Bernardino offered public comment reiterating its earlier assertion that this project would affect its ability to deliver fire protection services and offered a capital facilities study in support of its position. (Ex. 1102, received into the record as public comment only.) We are not convinced that the study properly determines that appropriate amount of compensation, but we are convinced that some compensation is required. We've therefore modified the conclusions in the text, above, and adopt conditions to require either agreement between the applicant and the County or an independent study to determine the appropriate level of compensation.

31. Page Worker Safety/Fire Protection 8, last partial paragraph, insert Conditions Worker Safety-7 and Worker Safety-8 following Worker Safety-6 as follows:

WORKER SAFETY-7 The project owner shall either:

(1) Reach an agreement with the San Bernardino County Fire Department (SBCFD) regarding funding of its project-related share of capital and operating costs to improve fire protection/emergency response infrastructure and provide appropriate equipment as mitigation of project-related impacts on fire protection/emergency response services within the jurisdiction; or

(2) If no agreement can be reached, the project owner shall fund a study (the "independent fire needs assessment and risk assessment") conducted by an independent contractor who shall be selected by the project owner and approved by the CEC Compliance Project Manager (CPM), in consultation with San Bernardino County Fire Department, and fulfill all mitigation identified in the independent fire needs assessment and a risk assessment. The study will evaluate the project's proportionate funding responsibility for the above-identified mitigation measures, with particular attention to emergency response and equipment/staffing/location needs.

Should the project owner pursue option (2), above, the study shall evaluate the following:

(a) The project's proportionate (incremental) contribution to potential cumulative impacts on the SBCFD and the project allocated costs of enhanced fire protection/emergency response services including the fire response, hazardous materials spill/leak response, rescue, and emergency medical services necessary to mitigate such impacts;

(b) The extent that the project's contribution to local tax revenue will reduce impacts on local fire protection and emergency response services; and

(c) Recommend an amount of funding (and corresponding payment plan) that represents the project's proportional payment obligation for the above-identified mitigation measures.

Compliance Protocols shall be as follows:

(a) **The study shall be conducted by an independent consultant selected by the project owner and approved by the CPM after consultation with the SBCFD. The project owner shall provide the CPM with the names of at least three consultants, whether entities or individuals, from which to make a selection, together with statements of qualifications;**

(b) **The study shall be fully funded by the project owner.**

(c) **The project owner shall provide the protocols for conducting the independent study for review and comment by the SBCFD and review and approval by the CPM prior to the independent consultant's commencement of the study;**

(d) **The consultant shall not communicate directly with the project owner or SBCFD without express prior authorization from the CPM. When such approval is given, the CPM shall be copied on any correspondence between or among the project owner, SBCFD, and the consultant (including emails) and included in any conversations between or among the project owner, SBCFD and consultant; and**

(e) **The CPM shall verify that the study is prepared consistent with the approved protocols, *or***

(3) If the project owner and SBCFD do not agree to the recommendations of the independent consultant's study, the Energy Commission or its designee shall, based on the results of the study and comments from the project owner and SBCFD, make the final determination regarding the funding to be provided to the SBCFD to accomplish the above-identified mitigation.

No construction of permanent above-ground structures shall occur until funding of mitigation occurs pursuant to either of the resolution options set forth above.

Verification: **At least five (5) days before construction of permanent above-ground structures, the project owner shall provide to the CPM:**

(1) A copy of the individual agreement with the SBCFD or, if the owner joins a power generation industry association, a copy of the group's bylaws and a copy of the group's agreement with the SBCFD; and evidence in each January Monthly Compliance Report that the project owner is in full compliance with the terms of such bylaws and/or agreement; *or*
(2) A protocol, scope and schedule of work for the independent study and the qualifications of proposed contractor(s) for review and approval by the CPM; a copy of the completed study showing the precise amount the project owner shall pay for mitigation; and documentation that the amount has been paid.

Annually thereafter, the owner shall provide the CPM with verification of funding to the SBCFD if annual payments were approved or recommended under either of the above-described funding resolution options.

WORKER SAFETY-8 The project owner shall:

> **Provide a $200,000 payment to San Bernardino County Fire Department prior to the start of construction. This funding shall off-set any initial funding required by WORKER SAFETY-7 above until the funds are exhausted. This offset will be based on a full accounting by the San Bernardino County Fire Department regarding the use of these funds.**

Verification: At least five (5) days prior to the start of construction the project owner shall provide documentation of the payment described above to the CPM. The CPM shall adjust the payments initially required by WORKER SAFETY-7 based upon the accounting provided by the San Bernardino County Fire Department.

WASTE MANAGEMENT

32. Page Waste Management 2, third paragraph, revise as follows:

The nonhazardous solid wastes are expected to include approximately 280 tons of scrap wood, concrete, steel/metal, paper, glass, and plastics. These wastes will be recycled to the extent possible. Non-recyclable wastes will be collected and disposed of pursuant to applicable LORS. **(Ex. 1, §§ 5.14.4.1.1, 5.14.5, 5.14.2)**

33. Page Waste Management 3, last partial paragraph, revise as follows:

Routine operations are expected to generate approximately four tons of hazardous waste, including hydraulic fluids, oils, greases, oily filters and rags, cleaning solutions

and solvents, and batteries. Although spills might occur, proper hazardous material handling and good practices will keep spill wastes to a minimum. **(Ex. 1, § 5.14.5)**

34. Page Waste Management 4, first full paragraph, revise as follows:

Hazardous wastes will be temporarily stored onsite no longer than 90 days and transported by licensed hazardous waste haulers to authorized disposal facilities in accordance with LORS applicable to generators of hazardous waste. (Ex**s**. **1, pp. 5.14-2, 17;** 300, p. 6.13-9 to 6.13-10.)

35. Page Waste Management 4, last partial paragraph, revise as follows:

The following three waste disposal facilities that could take the ISEGS nonhazardous construction and operation wastes: Sloan Transfer facility in Sloan, Nevada; Apex Regional Landfill in Las Vegas, Nevada; and Barstow Sanitary Landfill in Barstow, California. The evidence shows that there is sufficient capacity at these facilities to handle the project's construction and operation nonhazardous wastes. **(Ex. 1, p. 5.14-10.)**

36. Page Waste Management 4, first full paragraph, revise as follows:

Hazardous wastes will be transported to one of two available Class I landfills: Clean Harbors Buttonwillow Landfill in Kern County and Chemical Waste Management Kettleman Hills Landfill in Kings County. The Kettleman Hills facility also accepts Class II and III waste. Evidence indicates there is sufficient capacity at these facilities to handle the project's hazardous wastes during its operating lifetime. (Ex**s**. **1, pp. 5.14-11 – 5.14-12;** 300, p. 6.13-11.)

37. Page Waste Management 7, Condition Waste-3, revise as follows:

WASTE-3 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 BLM's Authorized Officer, and 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.

Verification: The project owner shall submit the Construction Waste Management Plan to BLM's Authorized Officer, and the CPM for approval no less than 30 days prior

to the initiation of construction activities at the site. **BLM's Authorized Officer and the CPM shall approve or identify any material deficiencies in the Construction Waste Management Plan within 30 days following receipt of the Plan.**

38. Page Waste Management 8, Condition Waste-6, revise as follows:

WASTE-6 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 BLM's Authorized Officer, and 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; and
- a detailed description of how facility wastes will be managed and disposed upon closure of the facility.

Verification: The project owner shall submit the Operation Waste Management Plan to BLM's Authorized Officer, and the CPM for approval no less than 30 days prior to the start of project operation. **BLM's Authorized Officer and the CPM shall approve or identify any material deficiencies in the Operation Waste Management Plan within 30 days following receipt of the Plan.** The project owner shall submit any required revisions to BLM's Authorized Officer, and the CPM within 20 days of notification from BLM's Authorized Officer. and 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.

39. Page Waste Management 9, Condition Waste-7, revise as follows:

WASTE-7 The project owner shall ensure that all spills or releases of hazardous substances, hazardous materials, or hazardous waste are reported, cleaned up, and remediated as necessary, in accordance with all applicable federal, state, and local requirements.

Verification: The project owner shall document all unauthorized releases and spills of hazardous substances, materials, or wastes that occur on the project property or related pipeline and transmission corridors. The documentation shall include, at a minimum, the following information: location of release; date and time of release; reason for release; volume released; amount of contaminated soil/material generated; how release was managed and material cleaned up; if the release was reported; to whom the release was reported; release corrective action and cleanup requirements ~~placed~~ **imposed** by regulating agencies; level of cleanup achieved and 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. Copies of the unauthorized spill documentation shall be provided to BLM's Authorized Officer and the CPM within 30 days of the date the release was discovered.

BIOLOGICAL RESOURCES

40. Page Biological Resources 2, first two paragraphs, revise as follows:

The ISEGS site is located on and surrounded by undisturbed, natural land, with the exception of the Primm Valley Golf Club and I-15 to the east and a transmission line and associated unpaved roads. Vegetation on the site and in the immediate project area consists of primarily Mojave creosote bush scrub, with ~~Mojave yucca – Nevada ephedra scrub, and~~ Mojave wash scrub also represented. Plant communities at the site are characterized by ~~an unusually~~ high diversity and density of native succulents and relatively low levels of noxious weeds. Elevations in the project area range from approximately 3,150 to 2,850 feet above mean sea level ~~(BSE 2007a)~~. The Clark Mountain Range occurs to the north and west of the project area, and the topography slopes gradually down to the east and southeast toward Ivanpah Dry Lake on the alluvial fans and bajada on the Clark Mountain's' east ~~and south~~ flank~~s~~. Approximately 2,000 ephemeral washes, which form part of the regional bajada, occur throughout the project area. The northernmost phase of the project site is immediately flanked by two hills: a limestone hill to the west and a metamorphic hill to the east.

The dominant plant community on the site, Mojave creosote bush scrub, is common in the Mojave Desert and is comprised of drought-adapted native shrubs. A census of all individuals of California barrel cactus (Ferocactus cylindraceus var. lecontei) and clustered barrel cactus (Echinocactus polycephalus var. polycephalus) recorded 2,869 individuals of California barrel cactus and 3,501 individuals of clustered barrel cactus within the project area. Densities were estimated at one to two mature barrel cacti per acre for the site overall. Densities of 15 mature barrel cacti per acre were found in some

localized areas. ~~This density is unusual because it occurs on a bajada rather than on rocky slopes where high barrel cactus densities would be expected.~~

41. Page Biological Resources 7, Biological Resources Table 1, revise to read as follows (because the changes are to bold and italicized fonts, we show the only the final result here):

Biological Resources Table 1
Special-Status Species Known or Potentially Occurring in the ISEGS Project Area and Vicinity

PLANTS		
Common Name	***Scientific Name***	**Status State/Fed/CNPS/BLM**
Mormon needle grass	*Achnatherum aridum*	__/__/2.3
Clark Mountain agave*	***Agave utahensis* var. *nevadensis***	**__/__/4.2**
Desert ageratina	*Ageratina herbacea*	__/__/2.3
Coyote gilia	*Aliciella triodon*	__/__/2.2
Small-flowered androstephium	*Androstephium breviflorum*	__/__/2.2
White bear poppy	*Arctomecon merriamii*	__/__/2.2
Mojave milkweed	***Asclepias nyctaginifolia***	**__/__/2.1**
Cima milk-vetch	*Astragalus cimae* var. *cimae*	__/__/1B.2/S
Providence Mountain milk-vetch	*Astragalus nutans*	__/__/4.2
Scaly cloak fern	*Astrolepis cochisensis* ssp. *cochisensis*	__/__/2.3
Black grama	*Bouteloua eriopoda*	__/__/4.2
Red grama	*Bouteloua trifida*	__/__/2.3
Alkali mariposa lily	*Calochortus striatus*	__/__/1B.2/S
Purple bird's-beak	*Cordylanthus parviflorus*	__/__/2.3
Desert pincushion	***Coryphantha chlorantha***	**__/__/2.1**
Viviparous foxtail cactus*	***Coryphantha vivipara* var. *rosea***	**__/__/2.2**
Winged cryptantha	*Cryptantha holoptera*	__/__/4.3
Gilman's cymopterus	*Cymopterus gilmanii*	__/__/2.3
Utah vine milkweed	***Cynanchum utahense***	**__/__/4.2**
Nine-awned pappus grass	***Enneapogon desvauxii***	**__/__/2.2**
Naked-stemmed daisy	*Enceliopsis nudicaulis* ssp. *nudicaulis*	__/__/4.3
Limestone daisy	*Erigeron uncialis* var. *uncialis*	__/__/1B.2/S
Forked buckwheat	*Eriogonum bifurcatum*	__/__/1B.2/S
Hairy erioneuron	*Erioneuron pilosum*	__/__/2.3

PLANTS		
Common Name	***Scientific Name***	**Status State/Fed/CNPS/BLM**
Clark Mountain spurge	*Euphorbia exstipulata* var. *exstipulata*	__/__/2.1
Wright's bedstraw	*Galium wrightii*	__/__/2.3
Pungent glossopetalon	*Glossopetalon pungens*	__/__/1B.2/S
Parish club-cholla	***Grusonia parishii***	**__/__/2.2**
Hairy-podded fine-leaf hymenopappus	*Hymenopappus filifolius* var. *eriopodus*	__/__/2.3
Jaeger's ivesia	*Ivesia jaegeri*	__/__/1B.3/S
Knotted rush	*Juncus nodosus*	__/__/2.3
Hillside wheat grass	*Leymus salinus* ssp. *mojavensis*	__/__/2.3
Plains flax	*Linum puberulum*	__/__/2.3
Spearleaf	*Matelea parvifolia*	__/__/2.3
Rough menodora	*Menodora scabra*	__/__/2.3
Polished blazing star	*Mentzelia polita*	__/__/1B.2/S
Utah mortonia*	***Mortonia utahensis***	**__/__/4.3**
Tough muhly	*Muhlenbergia arsenei*	__/__/2.3
Crowned muilla	***Muilla coronata***	**__/__/4.2**
False buffalo-grass	*Munroa squarrosa*	__/__/2.2
Cave evening-primrose*	***Oenothera cavernae***	**__/__/2.1**
Short-joint beavertail	*Opuntia basilaris* var. *brachyclada*	__/__/1B.2/S
Curved-spine beavertail	*Opuntia curvospina*	__/__/2.2
Spiny cliff-brake	*Pellaea truncata*	__/__/2.3
White-margined beardtongue	*Penstemon albomarginatus*	__/__/1B.2/S
Rosy two-toned beardtongue	*Penstemon bicolor* ssp. *roseus*	__/__/2.3
Limestone beardtongue	*Penstemon calcareous*	__/__/1B.3
Death Valley beardtongue	*Penstemon fruticiformis* var. *amargosae*	__/__/1B.3/S
Stephen's beardtongue	*Penstemon stephensii*	__/__/1B.3/S
Thompson's beardtongue	*Penstemon thompsoniae*	__/__/2.3
Utah beardtongue	*Penstemon utahensis*	__/__/2.3
Aven Nelson's phacelia	*Phacelia anelsonii*	__/__/2.3
Barneby's phacelia	*Phacelia barnebyana*	__/__/2.3
Sky-blue phacelia	*Phacelia coerulea*	__/__/2.3
Parish's phacelia	*Phacelia parishii*	__/__/1B.1/S
Jaeger's phacelia	*Phacelia perityloides* var. *jaegeri*	__/__/1B.3/S
Chambers' physaria	*Physaria chambersii*	__/__/2.3
Small-flowered rice grass	*Piptatherum micranthum*	__/__/2.3
Desert portulaca	***Portulaca halimoides***	**__/__/4.3**
Abert's sanvitalia	*Sanvitalia abertii*	__/__/2.2

PLANTS		
Common Name	***Scientific Name***	**Status State/Fed/CNPS/BLM**
Many-flowered schkuhria	*Schkuhria multiflora* var. *multiflora*	__/__/2.3
Johnson's bee-hive cactus	*Sclerocactus johnsonii*	__/__/2.2
Mojave spike-moss	*Selaginella leucobryoides*	__/__/4.3
Rusby's desert-mallow	***Sphaeralcea rusbyi* var. *eremicola***	**__/__/1B.2/S**
WILDLIFE		
Common Name	***Scientific Name***	**Status State/Fed/BLM**
Reptiles		
Desert tortoise	***Gopherus agassizii***	**ST/FT/__**
Banded gila monster	*Heloderma suspectum cinctum*	CSC/__/__/S
Birds		
Burrowing owl	***Athene cunicularia***	**CSC/FSC/__**
Golden eagle	***Aquila chrysaetos***	**CSC, FP/FSC/S**
Vaux's swift	***Chaetura vauxi***	**__/FSC/__**
Gray-headed junco	*Junco hyemalis caniceps*	WL/FSC/__
Loggerhead shrike	***Lanius ludovicianus***	**CSC/FSC/__**
Hepatic tanager	*Piranga flava*	WL/FSC/__
Summer tanager	*Piranga rubra*	CSC/__/__
Brewer's sparrow	***Spizella breweri***	**__/BCC/__**
Bendire's thrasher	*Toxostoma bendirei*	CSC/BCC/S
Crissal thrasher	***Toxostoma crissale***	**CSC/BCC/__**
Le Conte's thrasher	***Toxostoma lecontei***	**WL/BSS/__**
Virginia's warbler	*Vermivora virginiae*	WL/BCC/__
Gray vireo	*Vireo vicinior*	CSC/BCC/S
Mammals		
Townsend's big-eared bat	*Corynorhinus townsendii*	CSC/__/S
Pallid bat	*Antrozous pallidus*	CSC/__/S
Long-legged myotis	*Myotis volans*	__/__/S
Nelson's bighorn sheep	*Ovis canadensis nelsoni*	__/__/S
American badger	***Taxidea taxus***	**CSC/__/__**

Bold-face-type species names are those observed on or near the proposed project site or plants observed in the one-mile buffer by the applicant during the 2007/08 field surveys.
* Found in buffer area surveys only. For all but *Utah mortonia*; no specific location information was included in the applicant's final botanical plant report (CH2M Hill 2008x).

Status Codes:

Federal: FE - Federally listed endangered: species in danger of extinction throughout a significant portion of its range
FT - Federally listed, threatened: species likely to become endangered within the foreseeable future
BCC: Fish and Wildlife Service: Birds of Conservation Concern: Identifies migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent highest conservation priorities <www.fws.gov/migratorybirds/reports/BCC2002.pdf>

State CSC = California Species of Special Concern Species of concern to CDFG because of declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.
SE - State listed as endangered
ST = State listed as threatened
WL = State watch list

California Native Plant Society
List 1B - Rare, threatened, or endangered in California and elsewhere
List 2 - Rare, threatened, or endangered in California but more common elsewhere
List 3 - Plants which need more information
List 4 - Limited distribution – a watch list
0.1 - Seriously threatened in California (high degree/immediacy of threat)
0.2 - Fairly threatened in California (moderate degree/immediacy of threat)
0.3 - Not very threatened in California (low degree/immediacy of threats or no current threats known)

Bureau of Land Management (BLM): S = Sensitive
BLM Manual §6840 defines sensitive species as"…those species that are (1) under status review by the FWS/NMFS; or (2) whose numbers are declining so rapidly that Federal listing may become necessary, or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats." <www.blm.gov/ca/pdfs/pa_pdfs/biology_pdfs/SensitiveAnimals.pdf>

(Ex. 300, pp. 6.2-16 – 6.2-18.)

42. Page Biological Resources 10, second full paragraph, revise as follows:

Small-Flowered Androstephium (Androstephium breviflorum). Small-flowered androstephium is a bulbiferous herb found mainly in San Bernardino County, though it has been recorded in adjacent Riverside County and possibly Inyo County. This species also occurs in Arizona, Nevada, and Utah. It is found in dry, loose sandy to rocky soils, and on sand dunes and alluvial fans. The CNDDB Element Occurrence records are all presumed extant. In addition, approximately 31 occurrences were documented in the AFC for the Stirling Energy Systems Solar One Project (now called Calico Solar). In 2008 a total of 12 individuals were mapped in four locations on the ISEGS project site, within Ivanpah 1 and 2, in Mojave creosote bush scrub. ~~Many new occurrences of this species have been found in recent years and the project area includes only a very small portion of its total distribution in California.~~ **However, in 2010 the applicant reported that the individuals previously mapped as this plant were mis-identified individuals of crowned muilla (*Muilla coronata*), a CNPS List 4 (watch list) species**.

43. Page Biological Resources 19, first full paragraph, revise as follows:

Pallid and Townsend's big-eared bats could use the project area for foraging and might use nearby mine shafts for roosting. Though no mines exist on the project site, Staff observed a mine shaft in the limestone hill immediately west of Ivanpah 3. While BLM staff conducted a visual night survey on June 23, 2008, at least five bats were observed from the limestone hill, and one individual flew into and out of the mine shaft. Species identification was not possible with this type of survey. Although standard acoustic surveys would be able to distinguish most species, they would **not** successfully detect Townsend's big-eared bat. (Ex. 300, pp. 6.2-26 – 6.2-27.)

44. Page Biological Resources 25, first paragraph, revise as follows:

A substantial portion of the Ivanpah Valley documented occurrences of ~~small-flowered androstephium~~, Mojave milkweed, desert pincushion, nine-awned pappus grass, Parish's club-cholla, and Rusby's desert-mallow would be directly, indirectly, and cumulatively impacted by the project. Plants are particularly vulnerable to the effects of habitat fragmentation; small fragments of habitat can only support small populations and are more vulnerable to extinction. Even minor fluctuations in climate can be catastrophic in a small fragmented population. For ~~small-flowered androstephium~~, Mojave milkweed, desert pincushion, nine-awned pappus grass, and Parish's club-cholla, the California populations are already geographically marginal relative to their core populations outside the state. For most of these species, these Ivanpah Valley populations represent a substantial portion of their total documented range regionally and within California. Loss of a substantial portion of these populations makes them more vulnerable to extirpation within the state, especially for Mojave milkweed; its California distribution outside of the Ivanpah Valley is restricted to only two other observations and a handful of historic herbarium collections. **Biological Resources Table 2** summarizes the percentage of statewide documented occurrences for these special-status plant species. (Ex. 300, pp. 4-4 – 4-6.)

45. Page Biological Resources 25, Biological Resources Table 2, delete the first row of data for Androstephium breviflorum (small-flowered androstephium).

46. Page Biological Resources 26, first full paragraph, revise as follows:

To mitigate the potentially significant impacts to ~~small-flowered androstephium,~~ Mojave milkweed, desert pincushion, nine-awned pappus grass, Parish's club-cholla, and Rusby's desert-mallow, we impose Condition of Certification **BIO-13**, requiring a Weed Management Plan to help prevent the spread of non-native and invasive plant species on the ISEGS site.

47. Page Biological Resources 27, third paragraph, revise as follows:

~~Small-flowered androstephium,~~ Mojave milkweed, desert pincushion, nine-awned pappus grass, Parish's club-cholla, and Rusby's desert-mallow are not listed under the California Endangered Species Act, but that does not diminish the potential significance of their loss. Plants on the CNPS List 1A, 1B, and 2 meet the definitions of Sections 2062 and 2067 (CESA) of the California Fish and Game Code, and are eligible for state listing. Furthermore, even if a species is not a California or federally listed species it still may be considered endangered, rare or threatened, if the species can be shown to meet the criteria in Section 15380 of the CEQA Guidelines. "CEQA Section 15380 provides that a plant or animal species may be treated as 'rare or endangered' even if not on one of the official lists if, for example, it is likely to become endangered in the foreseeable future." Plants appearing on CNPS List 1B or 2 are considered to meet that criteria, and impacts to these species are generally considered "significant." (Ex. 300, p. 6.2-38.)

48. Page Biological Resources 29, last full paragraph, revise as follows:

Implementation of staff's proposed Conditions of Certification **BIO-8** and **BIO-9** have inherent risks and could themselves result in direct effects such as mortality, injury, or harassment of desert tortoises due to equipment operation, fence installation activities, removal of tortoise burrows, and tortoise translocation. Installation of exclusionary fencing at the perimeter of the project area would also fragment habitat for desert tortoise and home ranges of individual tortoises. **Condition of Certification BIO-8** ~~To~~address**es** ~~agency~~ **CDFG and USFWS** concerns about harm to tortoise resulting from ~~translocation or the~~ erection of the perimeter fence **and desert tortoise clearance surveys.** ~~the dangers to desert tortoises associated with translocation,.~~ Condition **BIO-9** requires the preparation of a Desert Tortoise Relocation/Translocation Plan in consultation with those agencies **to address concerns about harm to desert tortoise resulting from translocation**. (Ex. 300, pp. 6.2-47 – 6.2-51.)

49. Page Biological Resources 29, last full paragraph, revise and insert additional paragraphs as follows:

Implementation of staff's proposed Conditions of Certification **BIO-8** and **BIO-9** have inherent risks and could themselves result in direct effects such as mortality, injury, or harassment of desert tortoises due to equipment operation, fence installation activities, removal of tortoise burrows, and tortoise translocation. Installation of exclusionary fencing at the perimeter of the project area would also fragment habitat for desert tortoise and home ranges of individual tortoises. To address agency**, party and public** concerns about harm to tortoise resulting from translocation or the erection of the perimeter fence, Condition **BIO-9** requires the preparation of a Desert Tortoise Relocation/Translocation Plan in **accordance with U.S. Fish and Wildlife Service guidelines. The plan must be approved by USFWS, BLM, and the Energy Commission's CPM (after** consultation with **the California Department of Fish and Game).** ~~those agencies~~. (Ex. 300, pp. 6.2-47 – 6.2-51.)

We take official notice of the Translocation of Desert Tortoises (Mojave Population) From Project Sites: Plan Development Guidance, U.S. Fish and Wildlife Service, August 2010[2] (Guidance), one of the guidelines applicable to the preparation of the required Desert Tortoise Relocation/Translocation Plan. It specifies the following steps:

- **Determining whether the proposed land use is compatible with desert tortoises continuing to live on the site.**
- **Estimating the number of tortoise that will be affected on the project site through the use of surveys.**
- **Identifying potential recipient and control sites for the tortoises to be relocated to and on which to monitor tortoises as a control group for comparison with the moved tortoises and their new neighbors.**
- **Estimating tortoise densities at recipient and control sites.**
- **Developing the translocation plan in coordination with USFWS, State wildlife agencies, and land management agencies.**
- **Confirming tortoise densities at the recipient and control sites, health checkups, including blood tests for disease, and attaching transmitters to tortoises. Including the relocated tortoises, density at a receiving site may not exceed 130% of mean density for the desert tortoise recovery unit.**
- **Determine disposition of tortoises on project site—monitor on site via telemetry, move to quarantine facility off-site, or, if health problems are suspected, transferred to the Desert Tortoise Conservation Center in Las Vegas or other facility for further evaluation, treatment, and potential return to the wild.**
- **Construct project fencing.**
- **Prepare, obtain approval, and execute disposition plan.**
- **Post-translocation monitoring for a minimum of five years.**
- **Collection of data throughout the process for use by wildlife and permitting agencies.**

The Guidance specifies measures to protect the relocated, receiving area and control area tortoises, such as disinfection of containers used to transport them, hydration within 12 hours of release, release at an unoccupied shelter site and reference to requirements contained in other protocols. In all, we find it to be a comprehensive and thorough program to minimize harm to tortoises.

In comments on the PMPD and additional testimony offered at the August 24, 2010, further evidentiary hearing, several of the intervenors questioned the wisdom of attempting to relocate or translocate the tortoises found on the project site. Based on the results of studies conducted in connection with a large-scale

[2] found at http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt/USFWS%20DT%20Transocation%20Guidance.docx; additional guidance documents may be found at http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/

translocation program at the Fort Irwin military base, they argue that many of the tortoises that are relocated will die within a few years of their relocation. Taking into account deaths among tortoise in the receiving areas and in a control population that will be monitored, it is even speculated that the total number of tortoise deaths could exceed the number of tortoises that are relocated. (8-24-10 RT, pp. 63 – 64.)

As we describe above, the standards applicable to tortoise translocation activities take reasonable precautions to minimize tortoise mortality. Nonetheless, we assume that a substantial number of the translocated tortoises may perish. Sierra Club witness, Mr. Cashen, and others assert that we should not permit the project for this reason. Commission staff experts, as well as experts from the USFWS and CDFG assert to the contrary, that the project may be approved with the provision of habitat compensation lands at a 3 to 1 ratio as is required by Condition BIO-17. (8-24-10 RT, p. 91.) We resolve this disagreement among the experts in favor of the agency biologists, who are responsible for managing desert tortoise populations. We are persuaded that, although some tortoises may perish as a result of translocation, the enhanced habitat compensation lands that will be created will allow other tortoises and their offspring to thrive, resulting in no net loss in the tortoise population due to this project.

50. Page Biological Resources 29, last partial paragraph, revise as follows:

The loss of approximately 3,582 acres of occupied habitat and fragmentation and disturbance to adjacent habitat will be compensated pursuant to Condition BIO-17 by the acquisition of lands that would be permanently protected and enhanced to support healthy populations of desert tortoise. The acquired lands will be permanent**ly** protected and managed for desert tortoise, and exclude incompatible uses such as grazing, off-highway vehicle use, roads and trails, utility corridors, military operations, construction, mining, grazing by livestock and burros, invasive species, fire, and environmental contaminants. An equally important component is the implementation of enhancement actions to improve desert tortoise survival and reproduction. These actions might include habitat restoration, weed control, road closures or road fencing, reducing livestock and burro grazing, and controlling ravens and other predators. Without permanent protection and enhancement actions on lands acquired for mitigation, the result would be a net loss for desert tortoise populations. **Condition of Certification BIO-17 also includes BLM's required mitigation consisting of desert tortoise habitat enhancement including installation of at least 50 miles of desert tortoise exclusion fencing on roadways in the Northeastern Mojave Recovery Unit, and habitat restoration of at least 50 routes within the Desert Wildlife Management Area.**

51. Page Biological Resources 31, last partial paragraph, revise as follows:

In addition to ravens, feral dogs have emerged as major predators of the tortoise. Dogs may range several miles into the desert and have been found digging up and killing desert tortoises (USFWS 1994; Evans 2001). Dogs brought to the project site with visitors may harass, injure, or kill desert tortoises, particularly if allowed off leash to roam freely in occupied desert tortoise habitat. The worker environmental awareness training (**BIO-6**) and restrictions on pets being brought to the site required of all personnel (**BIO-11**) would reduce or eliminate the potential for these impacts. Additional raven ~~mitigation tools~~ **avoidance and minimization measures** have been incorporated into Conditions **BIO-11** and **BIO-12**.

52. Page Biological Resources 35, last full paragraph, revise as follows:

Incidental Take Permit: California Endangered Species Act (Fish and Game Code §§ 2050 et seq.) The California Endangered Species Act (CESA) prohibits the "take" (defined as "to hunt, pursue, catch, capture, or kill") of state-listed species except as otherwise provided in state law. Construction and operation of the ISEGS project could result in the take of desert tortoise, listed as threatened under CESA. Condition **BIO-17** specifies compensatory mitigation for desert tortoise habitat loss at a 3:1 ratio, with BLM "nesting" their 1:1 mitigation requirement within this framework. **Condition BIO-9 requires translocation of tortoises found on the project site according to a Desert Tortoise Translocation Plan which must incorporate measures to minimize harm to the relocated tortoises and those tortoises existing in the area to which they are relocated. Some tortoise mortality is expected to occur as a result of the translocation effort. The combination of best practices relocation of tortoises found on the site and purchase and enhancement of compensating off-site habitat will minimize impacts to the individual tortoises and fully mitigate impacts to the species as is required by CESA.** ~~This funding and mitigation approach provides full mitigation for desert tortoise~~

53. Page Biological Resources 35, last partial paragraph, revise as follows:

Streambed Alteration Agreement, California Fish and Game Code §§ 1600 1607. Pursuant to these sections, CDFG typically regulates all changes to the natural flow, bed, or bank, of any river, stream, or lake that supports fish or wildlife resources. Construction and operation of the ISEGS would result in direct or indirect impacts to up to 175 acres of waters of the state. Staff recommends Condition of Certification **BIO-~~19~~ 20**, which we adopt, to assure compliance.

***54. Page Biological Resources 37, two paragraphs preceeding "Findings of Fact, revise as follows*:**

7. Public Comment

~~We find no comments which raise a substantial new environmental issue and require a specific response.~~ **In comments on the PMPD, the**

County of San Bernardino argues that we should not require the set aside of habitat compensation lands for the tortoise and other species. Doing so deprives its citizens and visitors of recreation opportunities and the County of tax revenues. Given the requirements of federal and state laws requiring that we take all feasible measures to protect and mitigate harm to the various threatened or endangered species found on the project site, we do not have the option to refrain from requiring mitigation measures such as the compensating habitat.

Several parties and members of the public argue or comment to the effect that some of the plans required of the applicant, the Desert Tortoise Translocation Plan being a commonly cited prime example, constitute impermissible deferred mitigation under CEQA. We disagree. Performance standards are included in our conditions to assure that the appropriate level of protection is achieved by the approved plans. As we discuss above in the analysis of impacts upon tortoises, the project owner must comply with detailed and specific federal guidelines for the design and contents of relocation plans, the process of relocation and translocation, and the qualifications required of persons performing the work. Draft plans are subject to review by appropriate experts and approval by the Energy Commission and BLM.

It is also argued that our decision does not adequately address the effects of the project on migratory birds. The loss of active bird nests or young is regulated by the federal Migratory Bird Treaty Act and Fish and Game Code section 3503. The applicant has proposed mitigation measures to avoid and minimize impacts to nesting birds that have been incorporated into Conditions of Certification BIO-11 (Impact Avoidance and Best Management Practices), BIO-15 (Pre-construction Nest Surveys) and BIO-16 (Burrowing Owl Avoidance and Impact Minimization Measures). The required measures will avoid direct impacts to nests, eggs, or young of migratory birds, and would reduce potential impacts of construction disturbance to nesting birds to less-than-significant levels. Potential cumulative impacts due to loss of nesting and foraging habitat for these special-status bird species are reduced to insignificant levels by the preservation of desert tortoise habitat required by Condition of Certification BIO-17. In addition, new Condition BIO-21, requiring preparation and implementation of an Avian and Bat Monitoring and Management Plan to monitor death and injury of birds and bats from collisions with facility towers and mirrors and exposure to concentrated sunlight, and if necessary, implement adaptive management strategies to minimize previously unknown impacts, will further protect all bird species, including migratory birds.

Various commentators refer to a recent DRECP Science Advisory Panel draft report which, after citing the recent results from the Fort Irwin translocation project, recommend that translocation not be conducted and development directed to previously disturbed lands. Whether to approve this project or not is a policy decision to be made by the Energy Commission, after considering all the relevant factors, including scientific opinion. Input from the Advisory Panel is informative but we are not bound by any policy recommendations it makes.

Several commentators mentioned the genetic uniqueness of the desert tortoises in the Ivanpah Valley as justifying a heightened level of concern and protection. When pressed, however, no definitive evidence or rationale for doing so was presented. (8/24/10 RT, pp. 150 – 153.) At this point we consider the concern to be speculative.

Responding to a California Native Plant Society comment that required summer/fall plant surveys should be targeted to the summer rains that would cause plants to germinate and become visible. We agree and have modified Condition BIO-18 accordingly.

A comment from Basin and Range Watch suggests that a 5:1 habitat compensation ratio be applied to this project instead of the 3:1 ratio adopted in the PMPD. While that ratio was suggested in the Calico Solar Project case (08-AFC-13), the ratio was applied to only a portion of the Calico site. The mitigation measures proposed for Calico are not necessarily appropriate for other cases. In the absence of evidence that the proposed 3:1 ratio recommend by the wildlife agencies is insufficient, we decline to impose a greater requirement.

55. Pages Biological Resources 37 – 38, revise Findings of Fact 2 and 5 – 8 and add Findings of Fact 11 – 15 as follows:

2. Approximately 2,000 ephemeral wash~~es~~ **segments**, which form part of the regional bajada, occur throughout the project area.
5. Twenty-one special status wildlife and **227** plant species were detected during biological surveys.
6. Implementation of Conditions of Certification **BIO-11**, **BIO-13**, **BIO-14**, and **BIO-18** will reduce impacts to Special-Status plant species. After mitigation, it is uncertain whether potentially significant impacts to plants located on the project site but not in ~~one of the~~ **a** protected area~~s~~ will be mitigated to insignificant levels.
7. Implementation of Conditions of Certification **BIO-1** through **BIO-6**, **BIO-8** through **BIO-12**, ~~**BIO-17**~~, ~~**BIO-19**~~ will reduce impacts to Special-Status plant species to insignificant levels, except as described immediately above.

8. A mitigation ratio of 3:1 is appropriate for the provision of habitat compensation lands **and habitat enhancements** for desert tortoise, **as described in Condition of Certification BIO-17. In addition to BIO-17, implementation of Conditions of certification BIO-1 through BIO-12 will also reduce impacts to desert tortoise to insignificant levels. The acquisition and protection of desert tortoise compensation lands will also help mitigate project impacts to** Gila monster, ~~big horn sheep,~~ American badger, burrowing owl, golden eagle, Vaux's ~~sift~~ **swift**, loggerhead shrike, Brewer's sparrow, Crissal thrasher, and Le Conte's thrasher.

11. Implementation of Condition of Certification BIO-15 will reduce project construction impacts to nesting migratory birds to less than significant levels.

12. Implementation of Condition of Certification BIO-16 will reduce project impacts to burrowing owls to less than significant levels.

13. Implementation of Condition of Certification BIO-19 will reduce project impacts to Nelson's bighorn sheep to less than significant levels.

14. Implementation of Condition of Certification BIO-20 will reduce project impacts to 175 acres of state waters to less than significant levels.

15. **Implementation of Condition of Certification BIO-21 will avoid and minimize Project-related avian or bat impacts related to collisions with facility features and exposure to bright light and heat from concentrating sunlight.**

56. Page Biological Resources 43, revise Condition BIO-6 as follows:

Worker Environmental Awareness Program (WEAP)

BIO-6 The project owner shall develop and implement an Ivanpah SEGS-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the WEAP from ~~USFWS, CDFG,~~ BLM's Authorized Officer and the CPM. **The USFWS and CDFG shall also be provided a copy of the WEAP for review and comment.** The WEAP shall be administered to all onsite personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. The WEAP shall be implemented during site mobilization, ground disturbance, grading, construction, operation, and closure. The WEAP shall:

1. Be developed by or in consultation with the Designated Biologist 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 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 Gila monsters are venomous and should not be handled, and that no snakes, reptiles, or other wildlife shall be harmed;

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. Include a discussion of fire prevention measures to be implemented by workers during project activities; request workers dispose of cigarettes and cigars appropriately and not leave them on the ground or buried;

5. Present the meaning of various temporary and permanent habitat protection measures;

6. Identify whom to contact if there are further comments and questions about the material discussed in the program; and

7. 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.

Verification: At least 60 days prior to the start of any project-related site disturbance activities, the project owner shall provide to BLM's Authorized Officer and the CPM a copy of the draft WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program.

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. At least 10 days prior to site and related facilities mobilization, the project owner shall submit two copies of the BLM- and CPM-approved final WEAP.

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 BLM's Authorized Officer and the CPM and 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.

57. Page Biological Resources 48, revise subpart 2(c) of Condition BIO-8 as follows:

c. **Utility Corridor Fencing**. The utility rights-of-way shall be temporarily fenced on each side of the right-of-way prior to ground disturbing activities to prevent desert tortoise entry during construction. Temporary fencing ~~must follow guidelines for permanent fencing~~ **must be capable of preventing desert tortoises from entering the work area, with** ~~and~~ supporting stakes ~~shall be~~ 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.**

58. Page Biological Resources 50, revise Condition BIO-9 as follows:

Desert Tortoise Translocation Plan

BIO-9 The project owner shall develop and implement a final Desert Tortoise Relocation/Translocation Plan (Plan) that is consistent with current USFWS approved guidelines, **including the recently released "Translocation of Desert Tortoises (Mojave Population) from Project Sites: Plan Development Guidance, U.S. Fish and Wildlife Service, August 2010,"** and meets the approval of BLM~~, USFWS, CDFG and Energy Commission staff~~**'s Authorized Officer, USFWS and the CPM, in consultation with CDFG.** The final Plan shall be based on the draft Desert Tortoise Relocation/Translocation Plan prepared by the applicant dated May 2009 and shall include all revisions deemed necessary by BLM**'s Authorized Officer**, USFWS, **and the CPM, in consultation with** CDFG ~~and the Energy Commission staff~~.

Verification: Within 60 days of publication of the Energy Commission Decision the project owner shall provide BLM's Authorized Officer and the CPM with the final version of a Desert Tortoise Relocation/Translocation Plan that has been reviewed and approved by BLM, USFWS, **and the CPM in consultation with** CDFG ~~and Energy Commission staff~~. BLM's Authorized Officer and the CPM will determine the plan's acceptability within 15 days of receipt of the final plan. All modifications to the approved translocation must be made only after consultation with BLM's Authorized Officer, **USFWS and** the CPM, ~~USFWS, and~~ **in consultation with** CDFG. ~~The project owner shall notify BLM's Authorized Officer and the CPM no fewer than 5 working days before implementing any BLM- and CPM-approved modifications to the Plan.~~

Within 30 days after initiation of translocation activities, the Designated Biologist shall provide to BLM's Authorized Officer and 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.

59. Page Biological Resources 53, revise Condition BIO-11 as follows:

Impact Avoidance and Minimization Measures

BIO-11 During construction the project owner shall implement all feasible measures to avoid or minimize impacts to biological resources, including the following:

13. Dispose of Roadkilled Animals. Road killed animals or other carcasses detected in the project area or on roads near the project area shall be picked up immediately **and delivered to the Biological Monitor. Within 1 working day of receipt of the carcass the Biological Monitor shall contact CDFG and/or USFWS for guidance on disposal or storage of the carcass**~~upon detection and appropriately disposed of to avoid attracting common ravens and coyotes~~.

14. **On-site personnel shall photograph and record the location of all bird carcasses encountered within the solar fields, and shall provide the bird carcass, photograph, and location data to the Designated Biologist. The Designated Biologist shall identify the bird, ascertain a cause of death if possible, maintain a database of this information for all bird carcasses, and each year of operation shall provide a report summarizing this information to the CPM, BLM's Authorized Officer, CDFG and USFWS.**

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 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. 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 personnel, no workers or visitors to the site shall bring firearms or weapons. Vehicular traffic 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. The speed limit when traveling on Colosseum Road and other dirt access routes within desert tortoise habitat shall not exceed 20 miles per hour.

17. 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.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP ~~and implemented~~. Implementation of the measures **shall**~~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 BLM's Authorized Officer and the CPM, for review and approval, a written construction termination report identifying how measures have been completed. **The Designated Biologist shall provide to the CPM, BLM's Authorized Officer, 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**.

60. Page Biological Resources 57, revise Condition BIO-12 as follows:

Raven Management Plan

BIO-12 The project owner shall implement a Raven Management Plan that is consistent with the most current USFWS-approved raven management guidelines, and which meets the approval of USFWS, ~~CDFG,~~ BLM**'s Authorized Officer**, and the ~~Energy Commission staff~~**CPM in consultation with CDFG**. The draft Raven Management Plan submitted by the Applicant (CH2M Hill 2008f) shall provide the basis for the final plan, subject to review and revisions from USFWS~~, CDFG,~~ BLM**'s Authorized Officer and the CPM in consultation with CDFG**~~, and the Energy Commission staff~~. **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 USFWS Regional Raven Management Program. The amount shall be a one-time payment of $105 per acre of permanent disturbance.**

Verification: At least 60 days prior to start of any project-related ground disturbance activities, the project owner shall provide BLM's Authorized Officer, the CPM, USFWS, and CDFG with the final version of a Raven Management Plan that has been reviewed by USFWS, CDFG, BLM, and the Energy Commission staff. The CPM and BLM's Authorized Officer will determine the plan's acceptability within 15 days of receipt of the final plan. All modifications to the approved Raven Management Plan shall be made only after ~~consultation with~~ **approval by** BLM**'s Authorized Officer and the CPM, in consultation with** ~~and Energy Commission staff,~~ USFWS, and CDFG. ~~The project owner shall notify BLM's Authorized Officer and the CPM no less than 5 working days before implementing any BLM- and CPM-approved modifications to the Raven Management Plan.~~

No less than 10 days prior to the start of any Project-related ground disturbance activities, the project owner shall provide documentation to the CPM, CDFG and USFWS that the one-time fee for the USFWS Regional Raven Management Program has been deposited in the REAT-NFWS subaccount for the Project.

Within **60** ~~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 Raven 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.

61. Page Biological Resources 58, revise Condition BIO-13 as follows:

Weed Management Plan

BIO-13 The project owner shall implement a Weed Management Plan that meets the approval of BLM and the ~~Energy Commission staff~~ **CPM**. The draft Weed Management Plan submitted by the applicant (CH2M Hill 2008e) shall provide the basis for the final plan, subject to review ~~and revisions~~ **and approval** from BLM and **the CPM**~~Energy Commission staff~~, **in consultation with** USFWS, and CDFG. In addition to describing weed eradication and control methods, and a reporting plan for weed management during and after construction, the final Weed Management Plan shall include at least the following Best Management Practices to prevent the spread and propagation of noxious weeds:

1. Limit the size of any vegetation and/or ground disturbance to the absolute minimum, and limit ingress and egress to defined routes.

2. Maintain vehicle wash and inspection stations and closely monitor the types of materials brought onto the site.

3. Reestablish vegetation quickly on disturbed sites.

4. Monitoring and rapid implementation of control measures to ensure early detection and eradication for weed invasions.

5. Use only weed-free straw or hay bales used for sediment barrier installations, and weed-free seed.

6. Reclamation and revegetation shall occur on all temporarily disturbed areas, including pipelines, transmission lines, and staging areas.

Verification: At least 60 days prior to start of any project-related ground disturbance activities, the project owner shall provide BLM's Authorized Officer and the CPM with the final version of a Weed Management ~~Plan that has been reviewed and approved by BLM, and Energy Commission staff, USFWS, and CDFG~~. BLM's Authorized Officer and

the CPM will determine the plan's acceptability within 15 days of receipt of the final plan. All modifications to the approved Weed Control Plan must be made only after consultation with the **CPM** ~~Energy Commission staff~~, **and** BLM**'s Authorized Officer, in consultation with** USFWS, and CDFG. ~~The project owner shall notify the CPM no less than 5 working days before implementing any BLM- and CPM-approved modifications to the Weed Management Plan.~~

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

62. Page Biological Resources 59, revise Condition BIO-14 as follows:

Closure, Revegetation and Rehabilitation Plan

BIO-14 The project owner shall develop and implement a revised Closure, Revegetation and Rehabilitation Plan (Plan) in cooperation with BLM and Energy Commission staff~~, USFWS and CDFG~~ to guide site restoration and closure activities, including methods proposed for revegetation of disturbed areas immediately following construction and rehabilitation and revegetation upon closure of the facility. This plan must address preconstruction salvage and relocation of succulent vegetation from the site to ~~either~~ an onsite ~~or nearby~~ nursery facility for storage and propagation of material to reclaim disturbed areas. In the case of unexpected closure, the plan ~~should~~ assume<u>s</u> restoration activities ~~c~~<u>w</u>ould possibly take place prior to the anticipated ~~lifespan~~ **closure** of the plant. The Plan shall address all issues discussed in **Biological Resources Appendix ~~A~~B**: ***Issues to Address in the*** ~~*Revisions to Draft*~~ *Closure, Revegetation and Rehabilitation Plan*, and shall include but is not limited to the following elements in the revised plan:

1. Plan Purpose: The plan shall explicitly identify the objective of the revegetation plan to be re-creation of the types of habitats lost during construction and operation of the proposed solar energy facility. The final revegetation plan shall include introduction of mid- to late-successional species.

2. Standards/Monitoring: Performance standards for success thresholds, weed cover, performance monitoring methods and schedule, and maintenance monitoring in the revised Plan shall be conducted as described in **Biological Resources Appendix B**.

3. Baseline Surveys – Baseline vegetation surveys for planning restoration efforts shall be conducted as described in **Biological Resources Appendix B.**

4. Vegetation Clearing: Clearing of vegetation shall be limited to areas for which final maps are provided to BLM before approval of the ROW. Clearing of vegetation will be permitted on roads, utility routes, heliostat maintenance pathways, building and parking areas, and temporary staging areas provided these are specifically documented on a georeferenced construction alignment drawing or aerial photo or shape file, showing the exact locations of soil disturbance. BLM will consider relocating specific installations prior to the beginning of construction and during construction on a case by case basis but will not approve additional acreage beyond that addressed in the current application.

5. Vegetation Mowing; Vegetation mowing shall be limited to areas adjoining vehicle pathways used for heliostat installation to allow installation of the heliostat pylon and allow for tracking clearance under the heliostat. Vegetation mowing may be repeated during the life of the facility to maintain appropriate clearance for heliostat tracking.

6. Succulent Salvage: The revised Plan shall include a table that shows proposed succulent salvage by species the number of plants onsite, the lower threshold height for salvage, the number in each size class, and the fate of plants not salvaged. An inventory and map of proposed succulent transplants shall be provided as described in Appendix A. Information gained from succulent transplant experience gained in ISEGS 1 shall be applied to future salvage operations, as described in **Biological Resources Appendix B**.

7. Seed Handling: Seed collection, testing and application shall be conducted as described in **Biological Resources Appendix B**, with collection areas within 10 miles of the project boundaries and on similar terrain, soil, exposure, slope, and elevation to the project site.

8. Soil Preparation: Soil descriptions, compaction measurements, mulch application, soil storage, seed farming, mycorrhizal inoculation, and biological crust collection and storage shall be conducted as described in **Biological Resources Appendix B.** Soil stockpiles shall not be placed on areas that support special-status plant species or other sensitive biological resources.

9. Weed Management. Weed management activities needed to control weeds resulting from mirror washing shall be conducted as described in **Biological Resources Appendix B**.

10. Final Closure Plan**.** A Final Closure Plan, which addresses the final revegetation and rehabilitation activities upon closure and decommissioning of the project, shall be completed as part of the revised Plan. The Final Closure Plan shall include a cost estimate, adjusted for

inflation, reflecting the costs of the revegetation, rehabilitation, and monitoring for the duration of time estimated to achieve the objective of re-creating plant communities impacted by the project.

11. The project owner shall implement the Closure, Revegetation, and Rehabilitation Plan, Revision 3, dated July 6, 2010, with the following modifications.

a. The long-term soil stockpiles, as discussed in Table 5-2 of the Plan, shall be no higher than 6 feet.

b. The Preliminary Seeding Plan for Short-Term Disturbed Areas, and to be used as the basis for the seeding during final project decommissioning, shall be based upon the species list provided in Table 7-1 of the Plan rather than the species list in Table 7-2. The list may be modified at the time of decommissioning based on seed availability.

c. Concrete will be removed to a minimum depth of 6 feet unless it is shown that a particular area is prone to flood hazards and a greater depth for concrete removal should be required. All concrete removed shall be hauled off the project site and disposed of in an approved facility. Crushed concrete shall not be used as backfill on the site during decommissioning.

d. Succulents salvaged during project construction shall not be sold by the project owner. Should excess succulents be removed that cannot be transplanted in the Succulent Nursery Area, their disposition will be managed by BLM.

Verification: No more than 30 days from the Energy Commission Decision and BLM Record of Decision the project owner shall provide BLM's Authorized Officer and the CPM with a draft version of the revised Closure, Revegetation and Rehabilitation Plan. At least 60 days prior to start of any project-related ground disturbance activities, the project owner shall provide BLM's Authorized Officer and the CPM with the final version of the Closure, Revegetation and Rehabilitation Plan that has been reviewed and approved by BLM's **Authorized Officer**~~, USFWS, CDFG,~~ and the **CPM** ~~Energy Commission staff~~. All modifications to the approved Revegetation and Reclamation Plan must be made only after consultation with BLM's Authorized Officer **and**~~,~~ the CPM~~, USFWS and CDFG~~. ~~The project owner shall notify BLM's Authorized Officer and the CPM and no less than 5 working days before implementing any BLM- and CPM-approved modifications to the Closure, Revegetation and Rehabilitation Plan.~~

Within 30 days after completion of project construction for each phase of development, the project owner shall provide to BLM's Authorized Officer and the CPM for review and

approval, a written report identifying which items of the Closure, Revegetation and Rehabilitation 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.

At least one year prior to planned closure and decommissioning the project owner shall submit to the BLM-Authorized Officer and the CPM a final Closure Plan for review to determine if revisions are needed. The project owner shall incorporate all required revisions to the final Closure Plan and submit to the BLM-Authorized Officer and the CPM no less than 90 days prior to the start of ground disturbing activities associated with closure and decommissioning activities.

63. Page Biological Resources 62, revise Condition BIO-16 as follows:

Burrowing Owl Impact Avoidance and Minimization Measures

BIO-16 The project owner shall implement the following measures for the burrowing owl:

1. Complete a pre-construction survey for burrowing owls for any areas subject to disturbance from construction prior to the start of initial ground disturbance activities. If burrowing owls are present within 500 feet of the project site or linear facilities, then the CDFG burrowing owl guidelines (1995) shall be implemented;

2. Monitor burrowing owl pairs within 500 feet of any activities that exceed ambient noise and/or vibration levels;

3. Establish a 500-foot set back from any active burrow and construct additional noise/visual barriers (e.g., haystacks or plywood fencing) to shield the active burrow from construction activities. Post signs (in both English and Spanish) designating presence of sensitive area;

4. ~~Actively~~ Passively relocate all owls occupying burrows that will be temporarily or permanently impacted by the project and implement the following CDFG take avoidance measures:

    a. Occupied burrows shall not be disturbed during the nesting season (February 1 – August 31) unless a qualified biologist can verify through non-invasive methods that egg laying/incubation has not begun or juveniles are foraging independently and able to fly;

    b. A qualified biologist must **passively** relocate owls, confirm that owls have left burrows prior to ground-disturbing activities, and monitor the burrows. Once evacuation is confirmed, the biologist should hand excavate burrows and then fill burrows to prevent reoccupation; and

    c. Relocation of owls shall be approved by and conducted in consultation with CDFG.

5. Submit a Burrowing Owl Mitigation and Monitoring Plan to the CPM and CDFG for review and approval prior to relocation of owls (and incorporate it into the project's BRMIMP) as well as a construction termination report with results to CDFG and CPM 30 days after completing owl relocation and monitoring and at least 30 days prior to the start of commercial operation.

Verification: The project owner shall complete a pre-construction survey for burrowing owls for any areas subject to disturbance from construction no more than 30 days prior to the start of any project-related site disturbance activities, and submit a report to CDFG, USFWS, BLM's Authorized Officer and the CPM that describes when surveys were completed, observations, mitigation measures, and the results of the mitigation. If burrowing owls are to be protected on site or relocated, the project owner shall coordinate with and report to CDFG, USFWS, BLM and Energy Commission staff on these proposed activities in a Burrowing Owl Mitigation and Monitoring Plan. Within 30 days after completion of owl relocation and monitoring, and the start of ground disturbance **or** at least 90 days prior to the sale of power, the project owner shall provide to the CDFG and CPM a written construction termination report identifying how measures have been completed.

64. Page Biological Resources 64, revise Condition BIO-17 as follows:

Desert Tortoise Compensatory Mitigation

BIO-17 To fully mitigate for habitat loss and potential take of desert tortoise, the project owner shall provide compensatory mitigation at a 3:1 ratio for impacts to ~~4,073~~ **3,582** acres or the area disturbed by the final project footprint. At least two thirds of the 3:1 mitigation **requirement** ~~to satisfy the Energy Commission's Complementary Mitigation Measures~~ shall be achieved by acquisition, in fee title or in easement, of no less than ~~8,146~~ **7,164** acres of land suitable for desert tortoise **or twice the area disturbed by the final project footprint. The Energy Commission's compensatory mitigation requirement consists of habitat acquisition at a 2:1 ratio as well as the BLM's 1:1 desert tortoise mitigation approach of habitat enhancement.** The project owner shall provide **financial Security as specified in this condition in an amount sufficient to ensure the entire 3:1 mitigation requirement, including** ~~funding for the~~ acquisition, initial habitat improvements and long-term management ~~endowment of~~ **for** these ~~Energy Commission complementary~~ compensation lands **to be acquired and the mitigation to be provided through BLM.** The ~~remaining third of the 3:1 compensatory~~ 1:1 mitigation that will~~, to~~ satisfy **both** BLM's mitigation requirements and a portion ~~the balance~~ of the Energy Commission's mitigation requirements, shall be developed in accordance with BLM's desert tortoise mitigation requirements as described in the Northern and Eastern Mojave Desert Management Plan (BLM 2002). BLM's compensatory mitigation plan, serving as one third of the 3:1 mitigation ratio required to satisfy CESA, **consists of**~~would include acquisition of up to 4,073 acres of land within the Eastern Mojave Recovery Unit, or~~ desert tortoise habitat

enhancement **including installation of at least 50 miles of desert tortoise exclusion fencing on roadways in the Northeastern Mojave Recovery Unit, and habitat restoration of at least 50 routes within the Desert Wildlife Management Area.** ~~or rehabilitation activities that meet BLM, CDFG, USFWS and Energy Commission approval, or some combination of the two.~~ **The project owner may elect to 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) [Deposit of Funds to a NFWF Account] as described in #4 of this condition.** The Energy Commission requirements for acquisition of ~~8,146~~ **7,164** acres of compensation lands **and habitat enhancements through BLM** shall include **all of** the following:

1. Responsibility for Acquisition of Compensation Lands: The **project owner may delegate its** responsibility for acquisition of **compensation** lands ~~may be delegated by written agreement from the Energy Commission and CDFG~~ to a third party, such as a non-governmental organization supportive of Mojave Desert habitat conservation. Such delegation shall be subject to approval **in writing** by the CPM ~~and CDFG~~, in consultation with BLM**, CDFG** and USFWS, 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 18 months of the Energy Commission's decision.

2. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition shall:

a. be as close to the project site as possible;

b. provide good quality 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;

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 three months prior to acquisition of the property, the project owner shall submit a formal acquisition proposal to the CPM, CDFG, USFWS and BLM 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 ~~CDFG and~~ the CPM, in consultation with BLM**, CDFG** and the USFWS, shall be required for acquisition of all parcels comprising the ~~8,146~~ **7,164** acres.

4. Energy Commission **Compensation Land** ~~Complementary~~ Mitigation Security. The project owner shall provide **Security** ~~financial assurances~~ to the CPM ~~and CDFG~~ with copies of the document(s) to **CDFG**, BLM and the USFWS, to guarantee that an adequate level of funding is available to implement the ~~Energy Commission~~ ~~Complementary~~ ~~M~~mitigation ~~Measures~~ **requirements** described in this condition **(Condition of Certification BIO-17**). The **CPM** ~~se funds~~ shall **use the Security** ~~be used~~ solely for implementation of the **mitigation** measures associated with the project **in the event the mitigation is not provided as required in this condition.** ~~Alternatively, financial assurance can be provided to the CPM and CDFG in t~~**The Security may be in the** form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") **approved by the CPM. Security must be provided to the CPM** 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 BLM and the USFWS, to ensure funding in the amount of $20,446,460. 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 $910/acre = $7,412,860;~~

~~b. costs of initial habitat improvements to compensation lands, calculated at $250/acre = $2,036,500;~~

~~c. costs of establishing an endowment for long-term management of compensation lands, calculated at $1,350/acre = $10,997,100; and~~

~~d. total security = $20,446,460.~~

The Security estimates described below and in Biological Resources Table 1 (Estimate of Total Security), Table 2 (Estimate of Phase 1

Security), and Table 3 (Estimate of Phase 2 Security) are based on the most current guidance from the REAT agencies (*Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account, July 23, 2010*) and may be revised with updated information. [These tables are new text to the PMPD but are not marked as such for ease of reading.] The Security shall be provided in conformance with one of the following two options or a combination of the two options if approved by the CPM:

a. **Project Owner Acquisition of Compensation Lands - If the project owner is locating, acquiring and protecting compensation lands itself, the project owner shall provide the CPM with Security in the estimated amount of $33,183,648 prior to initiating any ground-disturbing project-related activities; if the project owner elects to construct the project in two phases in accordance with Condition of Certification BIO-22, the project owner shall provide Security in the amount of $11,876,448 prior to initiating any ground-disturbing activities associated with Phase 1, and shall provide Security in the amount of $21,307,200 prior to initiating any ground-disturbing activities associated with Phase 2; or**

b. **Deposit of Funds to a NFWF Account – If the project owner elects to comply with mitigation requirements by funding NFWF's implementation of the project's mitigation, the project owner shall deposit funds in the estimated amount of $33,909,523 to the NFWF Account; if the project owner elects to construct the project in two phases in accordance with Condition of Certification BIO-22, the project owner shall deposit funds in the amount of $12,163,207 prior to initiating any ground-disturbing activities associated with Phase 1, and shall provide Security in the amount of $21,788,316 prior to initiating any ground-disturbing activities associated with Phase 2.**

Actual Cost. The actual cost to comply with this condition will vary depending on the final footprint of the Project, and the actual costs of acquiring, improving and managing the compensation lands. Regardless of actual cost, the project owner shall be responsible for implementing all aspects of this condition.

Biological Resources – Table 1 – Estimate of Total Security

Ivanpah (07-AFC-5)			**9/3/2010**
CEC's Bio. Res. Mitigation/Compensation Cost Estimate -Owner Acquisiton & NFWF Options			
Construction Not Phased Security Estimate for 3,582 acre Project Disturbance and 3:1 Mitigation			
Item	**Desert Tortoise Compensation**	**Rare Plant Compensation**	**Streambed Compensation**
Phase 1 Number of Acres	3,582	30	175
Phase 1 Mitigation Number of Acres (3:1 for Desert Tortoise, 1:1 for Plants and Streams)	10,746	10	58
Estimated number of parcels to be acquired, at 160 acres per parcel[2]	67	1	0
Land cost at $1000/acre[3]	$10,746,000	$10,000	$58,000
Level 1 Environmental Site Assessment at $3000/parcel	$201,488	$3,000	$1,088
Appraisal at no less than $5,000/parcel	$335,813	$5,000	$1,813
Initial site work - clean-up, restoration or enhancement, at $250/acre[4]	$2,686,500	$2,500	$14,500
Closing and Escrow Cost at $5000 for 2 transactions[5]	$335,813	$5,000	$1,813
Biological survey for determining mitigation value of land (habitat based with species specific augmentation) at $5000/parcel	$335,813	$5,000	$1,813
3rd Party Administrative Costs (Land Cost x 10%)[6]	$1,074,600	$1,000	$5,800
Agency cost to accept land donation[7] (Land Cost x 15%) x 1.17 (17% of the 15% for overhead)	$1,885,923	$1,755	$10,179
SUBTOTAL - Acquisition and Initial Site Work	**$17,601,948**	**$33,255**	**$95,004**
Long-term Management and Maintenance (LTMM) fee at $1450/acre [8]	$15,581,700	$14,500	$84,100
Subtotal -Owner Acquisition Option Excl. NFWF Fees	**$33,183,648**	**$47,755**	**$179,104**
Total Phase 1 Mitigation -Owner Acquisition Option Desert Tortoise, Streambed & Plants			**$33,410,507**
NFWF Fees			
Establish Project Specific Account[9]	$12,000		
Call for and Process Pre-Proposal Modified RFP or RPF [10]	$30,000		
NFWF Management fee for Acquisition and Enhancement Actions (Subtotal x 3%)	$528,058	$998	$2,850
NFWF Management Fee for LTMM account (LTMM x 1%)	$155,817	$145	$841
Subtotal of NFWF Fees	$725,875	$1,143	$3,691
TOTAL Estimated cost for deposit in project specific sub-account	**$33,909,523**	**$48,898**	**$182,795**
Total Phase 1 Mitigation -NFWF Option Desert Tortoise, Streambed & Plants			**$34,141,216**

Biological Resources – Table 2 – Estimate of Phase 1 Security

Ivanpah (07-AFC-5)			**9/3/2010**
CEC's Bio. Res. Mitigation/Compensation Cost Estimate -Owner Acquisiton & NFWF Options			
Construction Phase I Security Estimate for 1,282 acre Project Disturbance and 3:1 Mitigation			
Item	**Desert Tortoise Compensation**	**Rare Plant Compensation**	**Streambed Compensation**
Phase 1 Number of Acres	1,282	10	58
Phase 1 Mitigation Number of Acres (3:1 for Desert Tortoise, 1:1 for Plants and Streams)	3,846	10	58
Estimated number of parcels to be acquired, at 160 acres per parcel[2]	24	1	0
Land cost at $1000/acre[3]	$3,846,000	$10,000	$58,000
Level 1 Environmental Site Assessment at $3000/parcel	$72,113	$3,000	$1,088
Appraisal at no less than $5,000/parcel	$120,188	$5,000	$1,813
Initial site work - clean-up, restoration or enhancement, at $250/acre[4]	$961,500	$2,500	$14,500
Closing and Escrow Cost at $5000 for 2 transactions[5]	$120,188	$5,000	$1,813
Biological survey for determining mitigation value of land (habitat based with species specific augmentation) at $5000/parcel	$120,188	$5,000	$1,813
3rd Party Administrative Costs (Land Cost x 10%)[6]	$384,600	$1,000	$5,800
Agency cost to accept land donation[7] (Land Cost x 15%) x 1.17 (17% of the 15% for overhead)	$674,973	$1,755	$10,179
SUBTOTAL - Acquisition and Initial Site Work	**$6,299,748**	**$33,255**	**$95,004**
Long-term Management and Maintenance (LTMM) fee at $1450/acre [8]	$5,576,700	$14,500	$84,100
Subtotal - Owner Acquisition Option Excl. NFWF Fees	**$11,876,448**	**$47,755**	**$179,104**
Total Phase 1 Mitigation - Owner Acquisition Option Desert Tortoise, Streambed & Plants			**$12,103,307**
NFWF Fees			
Establish Project Specific Account[9]	$12,000		
Call for and Process Pre-Proposal Modified RFP or RPF [10]	$30,000		
NFWF Management fee for Acquisition and Enhancement Actions (Subtotal x 3%)	$188,992	$998	$2,850
NFWF Management Fee for LTMM account (LTMM x 1%)	$55,767	$145	$841
Subtotal of NFWF Fees	$286,759	$1,143	$3,691
TOTAL Estimated cost for deposit in project specific sub-account	**$12,163,207**	**$48,898**	**$182,795**
Total Phase 1 Mitigation - NFWF Option Desert Tortoise, Streambed & Plants			**$12,394,900**

Biological Resources – Table 3 – Estimate of Phase 2 Security

Ivanpah (07-AFC-5)			**9/3/2010**
CEC's Bio. Res. Mitigation/Compensation Cost Estimate - Owner Acquistion & NFWF Options			
Construction Phase 2 Security Estimate for 2,300 acre Project Disturbance and 3:1 Mitigation			
	Desert Tortoise Compensation	**Rare Plant Compensation**	**Streambed Compensation**
Phase 2 Number of Acres	2,300	20	117
Phase 2 Mitigation Number of Acres (3:1 for Desert Tortoise, 1:1 for Plants and Streams)	6,900	20	117
Estimated number of parcels to be acquired, at 160 acres per parcel[2]	43	1	1
Land cost at $1000/acre[3]	$6,900,000	$20,000	$117,000
Level 1 Environmental Site Assessment at $3000/parcel	$129,375	$3,000	$2,194
Appraisal at no less than $5,000/parcel	$215,625	$5,000	$3,656
Initial site work - clean-up, restoration or enhancement, at $250/acre[4]	$1,725,000	$5,000	$29,250
Closing and Escrow Cost at $5000 for 2 transactions[5]	$215,625	$5,000	$3,656
Biological survey for determining mitigation value of land (habitat based with species specific augmentation) at $5000/parcel	$215,625	$5,000	$3,656
3rd Party Administrative Costs (Land Cost x 10%)[6]	$690,000	$2,000	$11,700
Agency cost to accept land donation[7] (Land Cost x 15%) x 1.17 (17% of the 15% for overhead)	$1,210,950	$3,510	$20,534
SUBTOTAL - Acquisition and Initial Site Work	$11,302,200	$48,510	$191,646
Long-term Management and Maintenance (LTMM) fee at $1450/acre [8]	$10,005,000	$29,000	$169,650
Subtotal - Owner Acquisition Option Excl. NFWF Fees	**$21,307,200**	**$77,510**	**$361,296**
Total Phase 2 Mitigation - Owner Acquisition Option Desert Tortoise, Streambed & Plants			**$21,746,006**
NFWF Fees			
Establish Project Specific Account[9] (Initial Fee paid in Phase 1)	$0		
Call for and Process Pre-Proposal Modified RFP or RPF [10]	$30,000		
NFWF Management fee for Acquisition and Enhancement Actions (Subtotal x 3%)	$339,066	$1,455	$5,749
NFWF Management Fee for LTMM account (LTMM x 1%)	$100,050	$290	$1,697
Subtotal of NFWF Fees	$469,116	$1,745	$7,446
TOTAL Estimated cost for deposit in project specific sub-account	**$21,776,316**	**$79,255**	**$368,742**
Total Phase 2 Mitigation - NFWF Option Desert Tortoise, Streambed & Plants			**$22,224,313**

Footnotes to Biological Resources Tables 1, 2, and 3:

1. Not all costs will apply to all REAT agency requirements.

2. All costs are best estimates as of summer 2010. Actual costs will be determined at the time of the transactions and may change the funding needed to implement the required mitigation obligation. Note: regardless of the estimates, the developer is responsible for providing adequate funding to implement the required mitigation.

3. Generalized estimate taking into consideration an 18-24 month window to acquire the land after agency decisions are made. If the agencies, developer, or 3rd party has better, credible information on land costs in the specific area where project-specific mitigation lands are likely to be purchased, those data may be considered by the CPM in finalizing the Security estimate. Note: Regardless of the estimates, the developer is responsible for providing adequate funding to implement the required mitigation.

4. Parcel sizes may range from 1 acre to 640 acres and above. The 160 acre parcel estimate is used in this security calculation.

5. Based on information from California Department of Fish and Game.

6. Two transactions at $2500 each: landowner to 3rd party; 3rd party to agency. The transactions will likely be separated in time.

7. Federal agencies only. State agencies may or may not require cost to accept donations.

8. Estimate for purposes of calculating general costs. The actual long term management and maintenance costs will be determined using a Property Analysis Report (PAR) or a PAR-like assessment tailored to the specific acquisition.

9. Each renewable energy project will be a separate sub-account within the REAT-NFWF account, regardless of the number of required mitigation actions per project. If a project and its mitigation are phased, this fee is only applied when the project specific account is established and not charged again when additional funds are deposited with subsequent phases.

10. If determined necessary by the REAT agencies if multiple 3rd parties have expressed interest; for transparency and objective selection of 3rd party to carryout acquisition.

5. Compensation Lands Acquisition Conditions The project owner shall comply with the following conditions relating to acquisition of the Energy Commission ~~Complementary Mitigation~~ compensation lands after the CDFG and the CPM, in consultation with BLM and the USFWS, have 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 ~~8,146~~ **7,164** 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 BLM**, CDFG** and 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 ~~8,146~~ **7,164** acres of compensation lands to CDFG under terms approved by **the CPM and** 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 **in consultation with CDFG** 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 **the CPM and** CDFG. If the approved non-profit holds a conservation easement, CDFG **or another designee of the CPM** 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 ~~8,146~~ **7,164** acres. 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 **in consultation with CDFG.** If CDFG takes fee title to the compensation lands, the habitat improvement fund must go to CDFG.

d. Long-term Management ~~Endowment~~ **and Maintenance** Fund. Prior to ground-disturbing project activities, the project owner shall provide to CDFG **in accordance with and as included in Item #4 of this condition** a non-wasting capital ~~endowment~~ **long-term management and maintenance fee** in the amount determined through the Property

Analysis Record (PAR) or PAR-like analysis that will be conducted for the ~~8,146~~ **7,164** acres. ~~The project owner's financial responsibility for the actual cost of mitigation shall not increase by more than 25% of the Security Amount ($20,446,460).~~ Alternatively, a non-profit organization may hold the ~~endowment~~ **long-term management and maintenance** 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 **in consultation with CDFG**. If CDFG takes fee title to the compensation lands, the ~~endowment~~ **long-term management and maintenance fee** must go to CDFG, where it will 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,~~ **long-term management and maintenance fund,** the California Wildlife Foundation or similarly approved entity identified by CDFG shall manage the **long-term management and maintenance fund** ~~endowment~~ for CDFG and with CDFG supervision.

e. Interest, Principal, and Pooling of Funds. The project owner, ~~CDFG~~ and the CPM **in consultation with CDFG**, shall ensure that an agreement is in place with the ~~endowment~~ **long-term management and maintenance fund** holder/manager to ensure the following ~~conditions~~ requirements are met:

- Withdrawal of Principal. The ~~endowment~~ **long-term management and maintenance fund** 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 ~~8,146~~ **7,164** acres. ~~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 will manage the endowment for CDFG with CDFG supervision.~~
- Pooling ~~Endowment~~ **Long-Term Management and Maintenance** Funds. CDFG, or a CPM ~~and CDFG~~ approved non-profit organization qualified to hold ~~endowments~~ **long-term management and maintenance fund** pursuant to California Government Code section 65965, may pool the ~~endowment~~ **long-term management and maintenance fund** with other ~~endowments~~ **such funds** for the operation, management, and protection of the ~~8,146~~ **7,164** acres for local populations of desert tortoise. However, for reporting purposes, the ~~endowment~~ **long-**

term management and maintenance fund must be tracked and reported individually to the CDFG and CPM.

- Reimbursement Fund. The project owner shall provide reimbursement to **the CPM,** 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.

6. **Long-term Maintenance of Fencing and Habitat Restoration. In addition to the funding described above for the acquisition, enhancement and management of the Energy Commission compensation lands, the Project owner shall provide sufficient funds to ensure that long-term management and maintenance is provided for the habitat improvements required by BLM for the ISEGS project, including fencing of roads in the Northeastern Mojave Recovery Unit, and habitat restoration of routes in the Desert Wildlife Management Area. The maintenance shall occur as long as the roads continue to operate as functional roadways and for the duration of project impacts. This long-term maintenance fee shall be calculated upon completion of a Property Analysis Record (PAR) or PAR-like analysis of the proposed enhancement actions, and shall be sufficient to fund annual inspections and repairs/maintenance of all fencing and habitat improvements completed as part of the BLM mitigation requirements for the ISEGS project.**

   The Project owner may choose to satisfy its mitigation obligations identified in this Decision by paying an in lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099 or any other applicable in-lieu fee provision, to the extent the in-lieu fee provision is found by the Commission to be in compliance with CEQA and CESA requirements.

Verification: The Project owner shall provide the CPM with written notice at least 30 days prior to the start of ground-disturbing activities on the Project site.

If purchase of 7,164 acres of mitigation lands as described in this condition, or as described in BIO-22 (phasing), is not completed at least 30 days prior to the start of ground-disturbing activities, the Project owner shall provide the CPM with approved Security at least 30 days prior to the start of ground-disturbing activities. The Security shall be in accordance with Item # 4 of this condition and other requirements of this condition, allowing for either Acquisition of Mitigation Lands by the project owner or use of the NFWF Account to satisfy this condition, and with BIO-22 (phasing) if the project owner elects to use that option.

If the project owner elects to Deposit Funds to the NFWF Account, it shall provide documentation of deposit of the required security to the REAT-NFWF Account at least 30 days prior to start of ground-disturbing activities on the project site.

Within 6 months of the Energy Commission decision, the project owner shall provide to the CPM for review and approval a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate amount for the long-term maintenance fee to fund maintenance of the proposed enhancement actions (desert tortoise exclusion fencing and DWMA route restoration). The project owner shall deposit the long-term maintenance fee into the REAT-NFWF account or another third-party recipient acceptable to the CPM in consultation with CDFG and BLM within 18 months of the Energy Commission decision.

Starting with the first year following construction and continuing for the duration of project impacts, the project owner shall provide to the CPM, BLM and CDFG an annual report describing: the results of the annual inspection of fencing and rehabilitated routes; a summary of fence repairs and maintenance of reclaimed routes completed during the year; and recommendations and a cost estimate for repairs and maintenance activities needed for the upcoming year.

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

No later than 18 months following the publication of the Energy Commission Decision the project owner shall provide written verification to the CPM and CDFG that the Energy Commission ~~Complementary Mitigation~~ compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient(s). ~~Alternatively, no later than 30 days prior to beginning project ground-disturbing activities, the project owner shall provide written verification of Security in accordance with this condition of certification. If Security is provided, t~~**T**he 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. **If NFWF or another approved third party is being used for the acquisition, the project owner shall ensure that funds needed to accomplish the acquisition are transferred in timely manner to facilitate the planned acquisition and to ensure the land can be acquired and transferred prior to the 18-month deadline.** Within six months of the land or easement purchase, as determined by the date on the title, the project owner, or an approved third party, shall provide CDFG and the CPM with a management plan for the Energy Commission ~~Complementary Mitigation~~ compensation lands and associated funds. ~~CDFG and t~~**T**he CPM shall review and approve the management plan, in consultation with **CDFG,** BLM 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. If habitat disturbance exceeds ~~4,073~~ **3,582** acres, the project owner shall provide a compensation plan to the CPM ~~and CDFG~~ for their review and approval, in consultation with **CDFG**, BLM and the USFWS. The compensation plan shall be submitted no later than 90 days from the CPM's receipt of the final accounting, and shall include a description of additional funds required or lands that must be purchased to compensate for the unanticipated habitat disturbances, and a schedule for that acquisition or funding inclusive of all associated **long-term**

management and maintenance fund ~~endowment~~ and enhancement costs. The amount of funding for habitat acquisition, initial habitat improvement, and long-term management ~~endowment~~ shall be calculated at the adjusted market value at the time of construction. ~~The project owner's financial responsibility for the actual cost of mitigation shall not increase by more than 25 percent of the Security Amount ($20,446,460).~~

If the project owner elects to satisfy its mitigation obligations by paying an in-lieu fee instead of acquiring compensation lands, pursuant to Fish and Game code sections 2069 and 2099 or any other applicable in-lieu fee provision, the Project owner shall notify the Commission that it would like a determination that the Project's in-lieu fee proposal meets CEQA and CESA requirements.

65. Page Biological Resources 69, revise Condition BIO-18 as follows:

SPECIAL-STATUS PLANT IMPACT AVOIDANCE AND MINIMIZATION

BIO-18 The project owner shall implement the following measures to avoid and minimize impacts to special-status plant species. Items 2, 3, 5, 6, 7, ~~and~~ 10**, and 11** are recommended exclusively by Energy Commission staff.

1. On-Site Plant Avoidance/Minimization Areas: To the extent feasible the project owner shall avoid and minimize disturbance to all special-status plant species within the project site. Impact avoidance **(i.e., protection from project-related impacts of any kind through removal of acreage from the project footprint)** and **impact** minimization efforts shall occur in all feasible locations**. Impact avoidance shall focus on areas that support the highest density and diversity of special-status plant species and shall remove, at a minimum,** ~~but shall focus in particular on~~ **the three** areas **totaling 476 acres and labeled "Rare Plant Mitigation Area" in Project Description Figure 13 from the Staff's FSA Addendum dated March 16, 2010 (Exhibit 315). The natural gas pipeline shall be aligned and narrowed to avoid special-status plant occurrences north of Ivanpah 3 as depicted in Project Description Figure 13. Impact minimization shall be conducted throughout the site.** ~~depicted in **Biological Resources Figure 2** that indicate the highest densities of Mojave milkweed, Rusby's desert-mallow, desert pincushion, nine-awned pappus grass, and Parish's club-cholla. The highest priorities for protection shall be small-flowered androstephium,~~ **Impact minimization within the solar field shall consist of protecting small perimeters ("halos") around** Mojave milkweed, desert pincushion, and Rusby's desert-mallow **plants as indicated in the applicant's January 2010 draft Special-Status Plant Avoidance and Protection Plan (Exhibit 81, Appendix B)**. ~~The project owner shall implement all feasible impact avoidance and minimization measures within the following areas:~~

   ~~a. ISEGS 1 and 3: Reconfigure project features to the extent feasible within the northern portions of ISEGS 1 and 3 to avoid areas that~~

~~support the highest density and diversity of special-status plant species.~~

b. ~~Construction Logistics Area: Reconfigure the layout and design of the Construction Logistics Area to maximize protection of high density and diversity special-status plant areas.~~

c. ~~Natural Gas Pipeline: Adjust the alignment of the proposed 75-foot wide natural gas pipeline and narrow the construction footprint to avoid special-status plant occurrences north of ISEGS 3.~~

2. Protection Goals : The project owner shall implement all feasible measures to protect 75 percent of the individuals of ~~small-flowered androstephium,~~ Mojave milkweed, Rusby's desert-mallow, desert pincushion, nine-awned pappus grass, and Parish's club-cholla within the project area (as mapped in Figure 5-3 of the applicant's final botanical survey report [CH2M Hill 2008x]). Each year during construction the measurement of percent protection achieved shall be calculated based on a comparison of numbers of individuals of each of these five species present in this area identified before construction compared to numbers remaining post –construction. These pre- and post-construction plant numbers shall be based on floristic surveys conducted by a qualified botanist.

3. Identify and Establish Special-Status Plant Protection Areas: The project owner shall identify Special-Status Plant Protection Areas ~~within~~ **for exclusion from** the project footprint **and avoidance of project-related impacts of any kind** ~~as needed~~ to ~~achieve~~ **facilitate achieving** the 75 percent protection goal. To accurately identify the ~~locations~~ **boundaries** of these areas, pre-construction floristic surveys shall be conducted by a qualified botanist at the appropriate time of year for special-status plant identification including both spring and summer/**fall** blooming periods. **Summer/fall surveys will be conducted after rains that are likely to cause plant germination and may be suspended in years where no such rains occur.** The surveys shall encompass **at a minimum the three areas totaling 476 acres and labeled "Rare Plant Mitigation Area" in Project Description Figure 13** ~~all the high plant density areas depicted in **Biological Resources Figure 2**~~ and shall extend 150 feet on both sides of the proposed gas pipeline alignment and 250 feet out from the project fenceline. The locations of the Special-Status Plant Protection Areas shall be clearly depicted on all final maps and project drawings and descriptions **for exclusion of all project activities**.

4. Protection of Adjacent Occurrences: The project owner shall identify special-status plants occurrences within 250 feet of the project fenceline during the pre-construction plant surveys described above. A qualified botanist shall delineate the boundaries of these special status plant

occurrences prior to the initiation of ground disturbing activities. These flagged special status plant occurrences shall be designated as Environmentally Sensitive Areas on plans and specifications, and shall be protected from accidental impacts during construction (e.g. vehicle traffic, temporary placement of soils or vegetation) and from the indirect impacts of project operation (**e.g.,** herbicide spraying, changes in upstream hydrology, etc).

5. Develop and Implement a Special-Status Plant Protection and Monitoring Plan : The project owner shall develop and implement a Special-Status Plant Protection and Monitoring Plan for special-status plants occurring within the Special-Status Plant Protection Areas **and on-site areas designated for impact minimization**. The goal of the Special-Status Plant Protection and Monitoring Plan shall be to maintain the special-status plant species ~~within the Special-Status Plant Protection Areas~~ as healthy, reproductive populations that can be sustained in perpetuity. At a minimum, the Special-Status Plant Protection and Monitoring Plan shall:

   - establish baseline conditions and numbers of the plant occurrences **in all protected areas (i.e., those to be excluded from the footprint and on-site areas to be protected)** ~~within the Special-Status Plant Protection Areas~~ and success standards for protection of special-status plant occurrences ~~within the Plant Protection Areas;~~

   - provide information about microhabitat preferences and fecundity, essential pollinators, reproductive biology, and propagation and culture requirements for each special-status species;

   - describe measures (e.g., fencing, signage) to avoid direct construction and operation impacts to special-status plants within **all protected areas** ~~the Special-Status Plant Protection Areas~~;

   - describe measures to avoid or minimize indirect construction and operations impacts to special-status plants within ~~the Special-Status Plant Protection Areas~~ **protected areas** (e.g., runoff from mirror-washing, use of soil stabilizers/tackifiers, alterations of hydrology from drainage diversions, erosion/sedimentation from disturbed soils upslope, herbicide drift, the spread of non-native plants, etc).

   - provide a monitoring schedule and plan for assessing the numbers and condition of special-status plants ~~within the Special-Status Plant Protection Areas~~; and

   - identify specific triggers for remedial action (e.g., numbers of plants dropping below a threshold);

6. Develop Special-Status Plant Remedial Action Plan: The project owner shall develop a detailed Special-Status Plant Remedial Action Plan to be implemented if special-status plants within the ~~Plant Protection Areas~~ **476**

acres of protected area and on-site minimization "halos" fail to meet success standards described in the Special-Status Plant Protection and Monitoring Plan. The Plant Remedial Action Plan shall include specifications for ex-situ/offsite conservation of seed and other propagules, and the seed bank and other symbionts contained in the topsoil where these plants occur. The remedial measures described in the Plant Remedial Action Plan shall not substitute for plant protection or other mitigation measures. The Special-Status Plant Remedial Action Plan shall include, at a minimum:

- guidelines for pre-construction seed collection (and/or other propagules) for each ~~of the five~~ species;
- specifications for collecting, storing, and preserving the upper layer of soil containing seed and important soil organisms;
- detailed replacement planting program with biologically meaningful quantitative and qualitative success criteria (see Pavlik 1996), monitoring specifications, and triggers for remedial action; and
- ecological specifications for suitable planting sites.

7. Seed Collection: Implementation of the Special-Status Plant Remedial Action Plan would require a source of local source of seeds/propagules. In addition, seed collection would serve to preserve germplasm in the event that all mitigation fails. The project owner shall develop and implement a Seed Collection Plan to collect and store seed for ~~small-flowered androstephium,~~ Mojave milkweed, Rusby's desert-mallow, desert pincushion, nine-awned pappus grass, and Parish's club-cholla. The source of these seeds shall be from plants proposed for removal within the project footprint. The project owner shall engage the services of a qualified contractor approved by the CPM to undertake seed collection and storage.

8. Gas Pipeline Revegetation and Monitoring: In the natural gas pipeline construction corridor where disturbed soils will be revegetated, the topsoil excavated shall be segregated, kept intact, and protected, under conditions shown to sustain seed bank viability. At a minimum, the top 2 cm of the soil shall be separately stored and preserved. Topsoil salvage, storing, and replacement shall be replaced in its original vertical orientation following pipeline installation ensuring the integrity of the top 2 cm in particular. The project owner shall prepare a Gas Pipeline Revegetation and Monitoring Plan targeted at re-establishment of Rusby's desertmallow, desert pincushion, Mojave milkweed, and potentially other special-status plant species. The Gas Pipeline Revegetation and Monitoring Plan shall identify success criteria for re-establishment and shall continue for a period of no less than 10 years until the defined success criteria are achieved. The Gas Pipeline Revegetation and Monitoring Plan shall include measures for seeding or other remedial

actions. If no individuals of Rusby's desert-mallow, desert pincushion, or Mojave milkweed, are located during the first year of monitoring, the project owner shall conduct supplemental seeding or other remedial measures in the area disturbed by natural gas pipeline installation.

9. Surveys on Acquired and Public Lands: The project owner shall conduct floristic surveys for Rusby's desert-mallow and Mojave milkweed on all lands that will be acquired as part of the desert tortoise compensatory mitigation requirements (see Condition of Certification **BIO-17**). ~~Similar surveys shall be conducted for small-flowered androstephium, desert pincushion, nine-awned pappus grass, and Parish's club-cholla for those species for which the 75 percent on-site avoidance goal has not been achieved.~~ The goal of the surveys shall be to identify at least the same number of occurrences on off-site **compensation or public** lands as **the number of occurrences in the project area excluding the occurrences in the Special-Status Plant Protection Areas in Project Description Figure 13** ~~were impacted by the ISEGS project~~. If this goal is not met by surveys on proposed acquisition lands, additional surveys shall be conducted within suitable habitat on public lands ~~until the same number of occurrences of each species that were impacted are identified~~. To be counted toward fulfillment of the goal the occurrences must reflect new data not previously documented in other survey efforts. The survey requirements shall include the following:

   - All surveys shall be conducted by a qualified botanist in accordance with BLM, CDFG, and CNPS plant survey guidelines;
   - Surveys shall occur the first spring after construction begins and continue each year **for a maximum of ten years** until the same number of ~~special-status plant~~ **Mohave milkweed and Rusby's desert-mallow** occurrences are identified on acquisition lands and/or ~~BLM~~ **public** lands **as located outside Special-Status Plant Protection Areas** ~~as were impacted, or predicted to be impacted based on final site design, by the ISEGS project construction and operation;~~
   - For each year surveys are conducted yearly survey results shall be provided to the CPM, BLM's Authorized Officer and CDFG, and shall include CNDDB field survey forms for all special-status plant species encountered during the surveys; and
   - All field survey forms shall be submitted to the CNDDB at the time of submittal to the CPM, BLM and CDFG.
   - ~~For each of the species for which surveys were conducted,~~ t**T**he project owner's qualified botanist shall submit a completion report documenting fulfillment of the target goals and which describe the number of new, previously undiscovered occurrences identified and

mapped. Locations shall be reported **with GPS coordinates compatible with inclusion in a GIS database.**

10. Security for Implementation of Plans: The project owner shall provide security adequate to fund implementation of the Special-Status Plant Protection and Monitoring Plan, the Special-Status Plant Remedial Action Plan for the life of the project, as well as the Seed Collection Plan, and the Gas Pipeline Revegetation Monitoring Plan.

11. **Acquire Off- Site Occurrence of Mojave Milkweed or Adjacent Land: The project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes at least 30 acres supporting a viable occurrence of Mojave milkweed (or suitable habitat adjacent to a known occurrence). The terms and conditions of this acquisition or easement shall be as described in Condition of Certification BIO-17 with the additional criteria that the Mojave milkweed mitigation lands: 1) provide habitat for the special-status plant species that is of similar or better quality (e.g., in terms of native plant composition) than that impacted; 2) contain OR abut a known occurrence of Mojave milkweed, ideally with populations that are stable, recovering, or likely to recover, that shares the same watershed as the land; and 3) be adequately sized and buffered to support self-sustaining special-status plant populations. These mitigation lands may be included with the desert tortoise mitigation lands ONLY if the above criteria are met. Estimated security for acquisition of compensation lands for Mojave milkweed is $107,265. If the project owner elects to construct the project in two phases in accordance with Condition of Certification BIO-22, the project owner shall provide Security in the amount of $47,755 prior to initiating any ground-disturbing activities associated with Phase 1, and shall provide Security in the amount of $77,510 prior to initiating any ground-disturbing activities associated with Phase 2. If sufficient new Mojave milkweed occurrences are discovered on desert tortoise compensation lands (not public lands) in accordance with item 9 above prior to acquiring this land, the associated security shall be refunded to the project owner.**

Verification: No less than 30 days following the publication of the Energy Commission Decision the project owner shall submit final maps and design drawings depicting the location of Special-Status Plant Protection Areas within and adjacent to the project site, and shall identify the species and numbers of plants within each of the Special-Status Plant Protection Areas.

No less than 30 days following the publication of the Energy Commission Decision the project owner shall submit draft versions of the Special-Status Plant Protection and Monitoring Plan, the Special-Status Plant Remedial Action Plan, the Seed Collection

Plan, and the Gas Pipeline Revegetation Monitoring Plan for review by the CPM, BLM's Authorized Agent, and CDFG. The project owner shall also provide a cost estimate for implementation of these plans which is subject to approval by the CPM, BLM's authorized agent, and the CDFG. The final plans shall be submitted for approval by the CPM, in consultation with BLM's Authorized Agent, CDFG, and CNPS within 90 days of the publication of the Commission Decision. The final plans shall be incorporated into the BRMIMP. At this time, the project owner shall also provide security sufficient to fund the implementation of the plans.

Within 30 days of the start of construction, the project owner shall submit copies of the contract with the CPM-approved seed contractor and the check for seed collection and curation fees to the CPM.

The project owner shall identify special-status plants occurrences within 250 feet of the project fence line during the pre-construction plant surveys described above. A qualified botanist shall delineate the boundaries of these special status plant occurrences at least 30 days prior to the initiation of ground disturbing activities.

On January 31st of each year following construction the project owner's qualified botanist shall submit a report, including CNDDB field survey forms, describing the results of off-site plant surveys **for Mojave milkweed and Rusby's desert-mallow** to the BLM's authorized officer, the CPM, CDFG, and CNDDB. Submittal of survey reports shall continue **for a maximum of 10 years** until the same number of occurrences **in the project area excluding the occurrences in the Special-Status Plant Protection Areas** ~~impacted by the project for small-flowered androstephium , Rusby's desert-mallow and Mojave milkweed~~ are identified on these off-site lands**.** ~~as were impacted by the project. Similar reports shall be submitted for desert pincushion, nine-awned pappus grass, and Parish's club-cholla for each of those species for which 75 percent avoidance was not achieved. For each of the species for which surveys were conducted, the~~ **The** project owner's qualified botanist shall submit a completion report documenting fulfillment of the target goals and which describe the number of new, previously undiscovered occurrences identified and mapped using GIS techniques for each species. Mapping results shall include GPS coordinates of the plants found.

The Designated Biologist shall maintain written and photographic records of the tasks described above, and summaries of these records shall be submitted along with the Monthly Compliance Reports to the CPM, BLM Authorized Agent, and CDFG. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report for a period not less than 10 years for the Gas Pipeline Revegetation Plan, and for the life of the project for the Special-Status Plant Protection and Monitoring Plan, and the Special-Status Plant Remedial Action Plan, including funding for the seed storage.

No less than 90 days prior to acquisition of the parcel(s) containing or adjacent to a known Mojave milkweed occurrence, the project owner, or a third-party approved by the CPM, in consultation with CDFG, shall submit a formal

acquisition proposal to the CPM and CDFG describing the parcel(s) intended for purchase.

Draft agreements to delegate land acquisition to CDFG or an approved third party and agreements to manage compensation lands shall be submitted to Energy Commission staff for review and approval (in consultation with CDFG) prior to land acquisition. Such agreements shall be mutually approved and executed at least 60 days prior to start of any project-related ground disturbance activities. The project owner shall provide written verification to the CPM that the compensation lands have been acquired and recorded in favor of the approved recipients(s). Alternatively, before beginning project ground-disturbing activities, the project owner shall provide Security in accordance with this condition. Within 90 days after the lands 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, for the compensation lands and associated funds.

66. Page Biological Resources 75, revise Condition BIO-19 as follows:

Nelson's Bighorn Sheep Mitigation

BIO-19 To compensate for project impacts to Nelson's bighorn sheep the project owner shall finance, construct and manage an artificial water source in the eastern part of the Clark Mountain range or in the State Line Hills outside of designated Wilderness. **The project owner shall monitor and control noxious and invasive weeds within 100 feet of the artificial water source. Control of weeds shall be coordinated with the CPM and BLM staff and shall consist of removal by mechanical methods, rather than herbicides. To minimize potential impacts to Nelson bighorn sheep, the project owner shall not use barbed wire fence on the northern perimeter of the Ivanpah 3 site, unless the project owner provides evidence that such fencing is essential for security reasons.**

Verification: Within 60 days of publication of the Energy Commission Decision the project owner shall submit to the BLM's Authorized Officer, the CPM and CDFG a Draft Bighorn Sheep Mitigation Plan identifying a proposed location for the artificial water source and providing plans for its construction and management. At least 60 days prior to start of any project-related ground disturbance activities, the project owner shall provide BLM's Authorized Officer and the CPM with the final version of the Bighorn Sheep Mitigation Plan that has been reviewed and approved by BLM, CDFG, and the Energy Commission staff. BLM's Authorized Officer and the CPM will determine the plan's acceptability within 30 days of receipt of the final plan.

No later than 18 months following the publication of the Energy Commission Decision, the project owner shall provide written verification to BLM's Authorized Officer and the CPM that the construction of the artificial water source has been completed. At the

same time, the project owner shall provide evidence of an agreement (Memorandum of Understanding) and a funding mechanism to provide ongoing maintenance of the water source by CDFG or some other party approved by BLM's Authorized Office and the CPM.

67. Page Biological Resources 75, revise Condition BIO-20 as follows:

Streambed Impact Minimization and Compensation Measures

BIO-20 The project owner shall implement the following measures to avoid, minimize and mitigate for impacts to ephemeral drainages:

1. Acquire Off-Site Desert Wash: The project owner shall acquire, in fee or in easement, a parcel or parcels of land that includes ephemeral washes with at least ~~198~~ **175** acres of state jurisdictional waters. The terms and conditions of this acquisition or easement shall be as described in Condition of Certification **BIO-17** with the additional criteria that the desert wash mitigation lands: 1) include at least ~~198~~ **175** acres of state jurisdictional waters; 2) be characterized by similar soil permeability, hydrological and biological functions as the impacted drainages; and 3) be within the same watershed as the impacted wash. The desert wash mitigation lands may be included with the desert tortoise mitigation lands ONLY if the above three criteria are met.

2. Security for Implementation of Mitigation: A security in the form of an irrevocable letter of credit, pledged savings account, or certificate of deposit for the amount of all mitigation measures pursuant to this condition of certification shall be submitted to, and approved by, the CPM, in consultation with CDFG, prior to commencing project activities within areas of CDFG jurisdiction. This amount shall be based on a cost estimate which shall be submitted to CDFG for review and to the CPM for approval within 60 days of the Energy Commission Decision's publication and prior to commencing project activities within areas of CDFG jurisdiction. **Estimated security for acquisition of compensation lands for state waters is $540,400. If the project owner elects to construct the project in two phases in accordance with Condition of Certification BIO-22, the project owner shall provide Security in the amount of $179,104 prior to initiating any ground-disturbing activities associated with Phase 1, and shall provide Security in the amount of $361,296 prior to initiating any ground-disturbing activities associated with Phase 2.** The security shall be approved by the CPM, in consultation with CDFG's legal advisors, prior to its execution, and shall allow the CPM at its discretion to recover funds immediately if the CPM, in consultation with CDFG, determines there has been a default.

3. Preparation of Management Plan: The project owner shall submit to Energy Commission CPM and CDFG a draft Management Plan that reflects site-specific enhancement measures for the drainages on the acquired compensation lands. The objective of the Management Plan shall be to enhance the wildlife value of the drainages, and may include enhancement actions such as weed control, fencing to exclude livestock, or erosion control. No later than 12 months after publication of the Energy Commission Decision the project owner shall submit a final Management Plan for review and approval to the CPM and CDFG.

4. Right of Access and Review for Compliance Monitoring: The CPM reserves the right to enter the project site or allow CDFG to enter the project site at any time to ensure compliance with these conditions. The project owner herein grants to the CPM and to CDFG employees and/or their representatives the right to enter the project site at any time, to ensure compliance with the terms and conditions and/or to determine the impacts of storm events, maintenance activities, or other actions that might affect the restoration and revegetation efforts. The CPM and CDFG may, at the CPM's discretion, review relevant documents maintained by the operator, interview the operator's employees and agents, inspect the work site, and take other actions to assess compliance with or effectiveness of mitigation measures.

5. Notification: The project owner shall notify the CPM and CDFG, in writing, at least five days prior to initiation of project activities in jurisdictional areas as noted and at least five days prior to completion of project activities in jurisdictional areas. The project owner shall notify the CPM and CDFG of any change of conditions to the project, the jurisdictional impacts, or the mitigation efforts, if the conditions at the site of a proposed project change in a manner which changes risk to biological resources that may be substantially adversely affected by the proposed project. The notifying report shall be provided to the CPM and CDFG no later than seven days after the change of conditions is identified. As used here, change of condition refers to the process, procedures, and methods of operation of a project; the biological and physical characteristics of a project area; or the laws or regulations pertinent to the project as defined below. A copy of the notifying change of conditions report shall be included in the annual reports.

    a. Biological Conditions: a change in biological conditions includes, but is not limited to, the following: 1) the presence of biological resources within or adjacent to the project area, whether native or non-native, not previously known to occur in the area; or 2) the presence of biological resources within or adjacent to the project area, whether native or non-native, the status of which has changed to endangered, rare, or

threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.

b. Physical Conditions: a change in physical conditions includes, but is not limited to, the following: 1) a change in the morphology of a river, stream, or lake, such as the lowering of a bed or scouring of a bank, or changes in stream form and configuration caused by storm events; 2) the movement of a river or stream channel to a different location; 3) a reduction of or other change in vegetation on the bed, channel, or bank of a drainage, or 4) changes to the hydrologic regime such as fluctuations in the timing or volume of water flows in a river or stream.

c. Legal Conditions: a change in legal conditions includes, but is not limited to, a change in Regulations, Statutory Law, a Judicial or Court decision, or the listing of a species, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.

6. Code of Regulations: The project owner shall provide a copy of the Streambed Impact Minimization and Compensation Measures from the Energy Commission Decision to all contractors, subcontractors, and the applicant's project supervisors. Copies shall be readily available at work sites at all times during periods of active work and must be presented to any CDFG personnel or personnel from another agency upon demand. The CPM reserves the right to issue a stop work order or allow CDFG to issue a stop work order after giving notice to the project owner, the CPM, if the CPM in consultation with CDFG, determines that the project owner has breached any of the terms or conditions or for other reasons, including but not limited to the following:

a. The information provided by the applicant regarding streambed alteration is incomplete or inaccurate;

b. New information becomes available that was not known to it in preparing the terms and conditions;

c. The project or project activities as described in the Final Staff Assessment have changed; or

d. The conditions affecting biological resources changed or the CPM, in consultation with CDFG, determines that project activities will result in a substantial adverse effect on the environment.

7. Best Management Practices: The project owner shall also comply with the following conditions:

a. The project owner shall minimize road building, construction activities and vegetation clearing within ephemeral drainages to the extent feasible.
b. The project owner shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter ephemeral drainages or be placed in locations that may be subjected to high storm flows.
c. The project owner shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey these laws, and it shall be the responsibility of the project owner to ensure compliance.
d. Spoil sites shall not be located within drainages or locations that may be subjected to high storm flows, where spoil shall be washed back into a drainage.
e. Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to vegetation or wildlife resources, resulting from project-related activities, shall be prevented from contaminating the soil and/or entering waters of the state. These materials, placed within or where they may enter a drainage or Ivanpah Dry Lake, by project owner or any party working under contract or with the permission of the project owner shall be removed immediately.
f. No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, cement or concrete or washings thereof, oil or petroleum products or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into, or placed where it may be washed by rainfall or runoff into, waters of the state.
g. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any drainage.
h. No equipment maintenance shall occur within 150 feet of any ephemeral drainage where petroleum products or other pollutants from the equipment may enter these areas under any flow.

Verification: No less than 90 days prior to acquisition of the parcel (s) containing ~~198~~ **175** acres of waters of the state, the project owner, or a third-party approved by the CPM, in consultation with CDFG, shall submit a formal acquisition proposal to the CPM and CDFG describing the parcel(s) intended for purchase.

Draft agreements to delegate land acquisition to CDFG or an approved third party and agreements to manage compensation lands shall be submitted to Energy Commission staff for review and approval (in consultation with CDFG) prior to land acquisition. Such agreements shall be mutually approved and executed at least 60 days prior to start of any project-related ground disturbance activities. The project owner shall provide written verification to the CPM that the compensation lands have been acquired and recorded

in favor of the approved recipient(s). Alternatively, before beginning project ground-disturbing activities, the project owner shall provide Security in accordance with this condition. Within 90 days after the land 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, for the compensation lands and associated funds.

No fewer than 30 days prior to the start of work potentially affecting waters of the state, the project owner shall provide written verification (i.e., through incorporation into the BRMIMP) to the CPM that the above best management practices will be implemented and provide a discussion of work in waters of the state in Compliance Reports for the duration of the project.

68. Page Biological Resources 80, following the last paragraph, add the following Conditions BIO-21 and BIO-22:

AVIAN AND BAT MONITORING AND MANAGEMENT PLAN

BIO-21 The Project owner shall prepare and implement an Avian and Bat Monitoring and Management Plan (Plan) to monitor death and injury of birds and bats from collisions with facility features including the solar receiver tower and reflective heliostat mirrors, and exposure to bright light and heat from concentrating sunlight. The Project owner shall use the monitoring data to inform and develop an adaptive management program that would avoid and minimize Project-related avian or bat impacts. Any Project-related bird or bat deaths or injuries shall be reported to the CPM, CDFG and USFWS, and then the CPM in consultation with CDFG and USFWS, shall then determine if the Project-related bird or bat deaths or injuries warrant implementation of adaptive management measures contained in the Plan. The study design for the Plan shall be approved by the CPM in consultation with CDFG and USFWS, and, once approved, shall be incorporated into the project's BRMIMP and implemented.

During construction, bird and bat deaths or injuries shall be reported in the Monthly Compliance Report. For one year following the beginning of power plant operation, the Designated Biologist shall submit quarterly reports to the CPM, CDFG, and USFWS. describing the results of monitoring. The monthly and quarterly reports shall provide a detailed description of any Project-related bird or bat deaths or injuries detected during the monitoring study or at any other time, including describing the dates, species found injured or dead, where found, expected cause of injury or death, other appropriate results of monitoring, and a description of adaptive management measures proposed or implemented in accordance with any applicable CDFG or USFWS guidelines to avoid or minimize deaths or injuries. Following the completion of the fourth quarter of monitoring, the Designated Biologist

shall prepare an Annual Report that summarizes the year's data, analyzes any Project-related bird fatalities or injuries detected, and provides recommendations for future monitoring and any adaptive management actions needed.

Verification: No less than 30 days prior to the start of construction-related ground disturbance activities the Project owner shall submit to the CPM, USFWS and CDFG a final Avian and Bat Monitoring and Management Plan. Modifications to the Plan shall be made only after approval from the CPM in consultation with CDFG and USFWS.

No later than January 31st of every year 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 determine whether more years of monitoring are needed, and whether mitigation and adaptive management measures are necessary. After two years of data collection, the project owner or contractor shall prepare a report that describes the study design and monitoring results of the Avian and Bat Monitoring and Management Plan. The report shall be submitted to the CPM, CDFG and USFWS no later than the third year after onset of Project operation.

PROJECT CONSTRUCTION AND COMPENSATION PHASING PLAN

BIO-22 As an alternative to providing mitigation or security for compensatory mitigation for the entire project prior to the start of the first ground-disturbing activities, the project owner may elect to provide security for compensatory mitigation in two phases as specified in this condition.

Only the phases identified as Phase 1 and Phase 2, as described in this condition, and as provided by the applicant on September 2, 2010 in their Comments on the Presiding Member's Proposed Decision, may be used for the phasing of mitigation and security requirements. To the extent those sources are found to contain conflicting information about Project phasing, the description in this condition shall control. This condition presumes that the phases identified in this condition are identical to the phases that the Bureau of Land Management (BLM) will authorize work on through issuance of "notices to proceed"; if phases used by BLM are not identical to the phases as described in this condition and the materials identified above, the project owner shall obtain separate written authorization from the CPM prior to beginning work on each of the two phases. In no event shall any project disturbance occur unless security has been provided for the required mitigation associated with the particular phase of construction.

For purposes of this condition:

"Project Disturbance" or "ground disturbance" means any project-related ground, habitat, or species disturbing action.

“Project Disturbance Area” or “ground disturbance area” means all areas that would be temporarily or permanently disturbed during construction or operation of the Project, including all linear facilities, or which would be subject to any project-related ground, habitat, or species disturbing action.

“Project construction” or “construction” means any ground-disturbing activity, including but not limited to construction work, site mobilization, fence construction, or any desert tortoise translocation activities.

“Security” means the security that is required under other biological conditions of certification to ensure required mitigation measures will be implemented, or payments by the project owner into the National Fish and Wildlife Foundation (NFWF) mitigation account in accordance with the option provided in other conditions of certification.

Overview of Project Phases

Phase 1 includes the following components (1,282 acres):

a. **Fence Colosseum Road;**
b. **Fence the Construction Logistics Area (CLA) and Construct Holding Pens in the CLA;**
c. **Fence, Conduct Clearance Surveys, and Construct Ivanpah 1**
d. **Fence Access Road and Power Block for Ivanpah 2, and Perform Construction Within Ivanpah 2 Power Block.**

Phase 1 would include 1,282 acres of desert tortoise mitigation, as well as 10 of the 30 acres of rare plant mitigation, and 58 of the 175 acres of state waters mitigation.

Phase 2 includes the following components (2,300 acres):

a. **Construct Ivanpah 2 – Consists of the diagonal access roads, perimeter road for fence, channel crossings as needed, and solar field including grading of approximately 90 acres in the southwest and central regions of the solar field area;**
b. **Construct Ivanpah 3 - Consists of the diagonal access roads, perimeter road for fence, channel crossings as needed, power block, and solar field including grading of approximately 120 acres in the southern and western regions of the solar field area;**
c. **Other external features including roads and gas line.**

Phase 2 would include 2,300 acres of desert tortoise mitigation, as well as 20 of the 30 acres of rare plant mitigation, and 117 of the 175 acres of state waters mitigation.

General Requirements

At no time may the project owner cause ground-disturbance to any location outside of the area that has been approved for construction according to the phasing plan identified in this Condition of Certification.

Prior to initiating construction in either phase of the Project, the project owner shall comply with all pre-construction requirements in this and other Conditions of Certification and shall notify the CPM that it has obtained a Notice to Proceed for the particular phase from the BLM.

Construction activities, including work on linear and non-linear features, shall not occur outside desert tortoise exclusion areas that have been fenced and cleared in accordance with USFWS protocols and as described in Condition of Certification BIO-8 (Desert Tortoise Clearance and Exclusion Fencing).

The project owner shall provide security to ensure implementation of the mitigation requirements in Conditions of Certification BIO-17 (Desert Tortoise Compensatory Mitigation), BIO-18 (Special-Status Plant Impact Avoidance and Minimization) and BIO-20 (Streambed Impact Minimization and Compensation Measures) for each of the two phases prior to any project construction associated with that phase. Phasing of security only applies to security required by the Conditions listed above. If the project owner elects to phase payments of security under either a Project Owner Acquisition or NFWF option and if the commencement of construction is delayed beyond June 1, 2011, the amount of the security (including payments to NFWF if applicable [see definition of security above]) will be adjusted by the CPM in consultation with DFG, BLM and USFWS prior to each phase to reflect the CPM's best estimate at that time of the estimated costs of land acquisition, long-term management and maintenance costs, and other costs that are included in the security computation. Those costs may be greater than the costs identified in the conditions of certification.

Even when security has been provided, the project owner shall complete the acquisition, protection and transfer of all compensation lands required in the conditions of certification listed above, as well as all funding requirements associated with those lands, within the time periods identified in those conditions of certification.

Additional requirements within the project's conditions of certification that are not expressly phased in this condition shall be phased as necessary to carry out the purpose of this condition, and to ensure that no project construction occurs in an area for which the project owner

has not provided security and obtained permission to begin construction. Examples may include such activities as construction and location of desert tortoise exclusion fencing or timing of pre-construction clearance surveys for other species. The project owner shall first obtain approval from the CPM, acting in consultation with BLM, CDFG and USFWS, for the phasing of any requirements or deadlines that are not expressly phased in conditions of certification.

Security Requirements

Security for phased construction shall be in the amounts as specified in Conditions of Certification BIO-17, -18 and -20, and may be adjusted by the CPM in consultation with DFG, BLM and USFWS based upon more accurate information provided by the project owner confirming the acreages described in this table, and on updates from the REAT agencies with more current guidance than the *Desert Renewable Energy REAT Biological Resource Compensation/Mitigation Cost Estimate Breakdown for use with the REAT-NFWF Mitigation Account, July 23, 2010*.

Verification: No fewer than 30 days prior to the start of desert tortoise clearance surveys for each phase, the Project owner shall submit a description of the proposed construction activities for that phase to CDFG, USFWS and BLM for review and to the CPM for review and approval. The description for each phase shall include the proposed construction schedule, a figure depicting the locations of proposed construction and number of acres of desert tortoise habitat, rare plant habitat, and state-jurisdictional streambeds to be disturbed.

If all mitigation requirements, including habitat acquisition and protection, are not completed for a Project phase at least 30 days prior to the start of ground-disturbing activities for that phase, the Project Owner shall provide verification to the CPM and CDFG that approved security as described in Conditions of Certification BIO-17 (Desert Tortoise Compensatory Mitigation), BIO-18 (Special-Status Plant Impact Avoidance and Minimization), and BIO-20 (Streambed Impact Minimization and Compensation Measures) has been established in accordance with these Conditions of Certification no later than 30 days prior to beginning ground-disturbing activities for each Phase.
Prior to submitting verification regarding the security to the CPM, the project owner shall obtain the CPM's written approval of the dollar amount and form of the security and the CPM's written approval of the terms governing the security instrument.

Prior to initiating construction in each phase of the Project, the project owner shall comply with all pre-construction requirements in this and other Conditions of Certification and shall notify the CPM that it has obtained a Notice to Proceed for the particular phase from the BLM.

The Project Owner shall provide written verification to the CPM, CDFG, BLM and USFWS of the compensation lands acquisition, protection, and transfer requirements and satisfaction of associated funding requirements as set forth in BIO-17, BIO-18 and BIO-20 within the following time frames: (1) For Phase 1 mitigation, verification shall be provided no later than 18 months after the start of construction of Phase 1, and (2) for Phase 2 mitigation, such verification shall be provided no later than 18 months after the start of construction of Phase 2. Other verification, notification and reporting requirements and other deadlines set forth in BIO-17, BIO-18 and BIO-20 that relate to compensation land requirements, to the option of funding mitigation through the NFWF account, or to use of approved third parties to carry out mitigation requirements also apply to Phase 1 and to Phase 2.

Within 90 days after completion of all project related ground disturbance for each project phase, the project owner shall provide to the CPM, CDFG, BLM and USFWS an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during Project construction.

SOIL AND WATER RESOURCES

69. Page Soil & Water Resources 7, first full sentence, revise as follows:

If discharged to land, discharge of this water would be subject to the requirements of the State Water Resources Control Board~~'s general permit number 2003-003~~**-DWQ Order No. 2003-0003-DWQ (Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality).**

70. Page Soil & Water Resources 31, second paragraph of Section 7, change "4,073" to "3,582."

71. Page Soil & Water Resources 14, Soil and Water Resources Table 4, change the value for "Reoperation of the Molycorp Mine " from "400" to "1200" AFY.

72. Page Soil & Water Resources 20, Condition Soil&Water-2, revise as follows:

WASTE DISCHARGE REQUIREMENTS

SOIL&WATER-2: The project owner shall comply with the requirements specified in Appendix B, C, and D for dredge and fill, wastewater, and storm water discharges associated with construction and industrial activity. **These requirements relate to discharges, or potential discharges, of waste that could affect the quality of waters of the state, and were developed in consultation with staff of the State Water Resources Control Board and/or the applicable California Regional Water Quality Control Board**

(hereafter "Water Boards"). It is the Commission's intent that these requirements be enforceable by both the Commission and the Water Boards. In furtherance of that objective, the Commission hereby delegates the enforcement of these requirements, and associated monitoring, inspection and annual fee collection authority, to the Water Boards. Accordingly, the Commission and the Water Board shall confer with each other and coordinate, as needed, in the enforcement of the requirements. The project owner shall pay the annual waste discharge permit fee associated with this facility to the Water Boards. In addition, the Water Boards may "prescribe" these requirements as waste discharge requirements pursuant to Water Code Section 13263 solely for the purposes of enforcement, monitoring, inspection, and the assessment of annual fees, consistent with Public Resources Code Section 25531, subdivision (c). The project owner shall develop, obtain both BLM's Authorized Officer and CPM approval of, and implement a construction Storm Water Pollution Prevention Plan (SWPPP) for the construction of the project and an Industrial SWPPP for operation of the project.

Verification: At least sixty (60) days prior to construction, the project owner shall submit to both BLM's Authorized Officer and the CPM a copy of the construction SWPPP for construction of the project for review and approval. At least sixty (60) days prior to commercial operation, the project owner shall submit to both BLM's Authorized Officer and the CPM a copy of the Industrial SWPPP for operation of the project for review and approval prior to commercial operation. The project owner shall retain a copy on site. The project owner shall submit copies to both BLM's Authorized Officer and the CPM of all correspondence between the project owner and the **Lahontan** RWQCB regarding the WDRs for discharge of storm water associated with construction and industrial activity within ten (10) days of its receipt or submittal.

73. Page Soil & Water Resources 27, Condition Soil&Water-7, inadvertently omitted from the PMPD, as follows:

WASTEWATER COLLECTION SYSTEM REQUIREMENTS

SOIL&WATER-7: The project owner shall recycle and reuse all process wastewater streams to the extent practicable. Prior to transport and disposal of any facility operation wastewaters that are not suitable for treatment and reuse onsite, the project owner shall test and classify the stored wastewater to determine proper management and disposal requirements. The project manager shall ensure that the wastewater is transported and disposed of in accordance with the wastewater's characteristics and classification and all applicable LORS (including any CCR Title 22 Hazardous Waste and Title 23 Waste Discharges to Land requirements).

Verification: Prior to transport and disposal of any facility operation wastewaters that are not suitable for treatment and reuse onsite, the project owner shall test

and classify the stored wastewater to determine proper management and disposal requirements. The project manager shall ensure that the wastewater is transported and disposed of in accordance with the wastewater's characteristics and classification and all applicable LORS (including any CCR Title 22 Hazardous Waste and Title 23 Waste Discharges to Land requirements).

74. Page Soil & Water Resources 29, Soil and Water Resources Appendix B, Condition Soil&Water-7, insert the following paragraph and footnote after heading number 1:

The Discharger submitted a Report of Waste Discharge/Joint Technical Document (hereafter collectively referred to as the RWD) with the California Energy Commission (Energy Commission) and Lahontan Regional Water Quality Control Board (Lahontan Water Board). The Energy Commission will coordinate reviews and approvals with the regulatory agencies to ensure that the proposed project meets the California Environmental Quality Act (CEQA) requirements and conforms with the Porter-Cologne Water Quality Control Act. The Energy Commission will certify this project and has included waste discharge requirements (WDRs) as conditions of certification in accordance with the Warren-Alquist Act[3]. The WDRs are not being proposed by staff of the Regional Board to its Board for consideration and adoption at this time. Once the Energy Commission certifies the proposed project, the Board of the Lahontan Water Board under Section 13263 of the Water Code may prescribe these requirements as WDRs solely for the purpose of enforcement, annual fee collection, inspection and monitoring, and related purposes, but any action of the Board of the Regional Board under Section 13263 of the Water Code must be consistent with the Warren-Alquist Act, including without limitation the non-reviewability provision of subdivision (c) of Section 25531 of the Public Resources Code.

[3] The Warren-Alquist State Energy Resources Conservation and Development Act is the enabling legislation for the California Energy Commission. The Act is codified as Public Resources Code (PRC), Section 25000 et seq. PRC Section 25500 establishes the Commission's authority to certify all sites and related facilities for thermal power plants with power ratings of 50 megawatts or more. The section further declares that "the issuance of a certificate by the commission shall be in lieu of any permit, certificate, or similar document required by any state, local or regional agency, or federal agency to the extent permitted by federal law, for such use of the site and related facilities, and shall supersede any applicable statute, ordinance, or regulation of any state, local, or regional agency, or federal agency to the extent permitted by federal law."

75. Page Soil & Water Resources 57, Soil and Water Resources Appendix D, Condition Soil&Water-7, insert the following Attachments A and B to Appendix D:

ATTACHMENT A

GENERAL PROVISIONS

FOR

MONITORING AND REPORTING

1. Sampling And Analysis

a. All analyses shall be performed in accordance with the current edition(s) of the following documents:

i. Standard Methods for the Examination of Water and Wastewater, American Public Health Association, et al.

ii. Methods for Chemical Analysis of Water and Wastes, USEPA

b. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Public Health or a laboratory approved by the BLM's Authorized Officer and CPM. Specific methods of analysis must be identified on each laboratory report.

c. Any modifications to the above methods to eliminate known interferences shall be reported with the sample results. The methods used shall also be reported. If methods other than the methods listed above are used, the exact methodology must be submitted for review and must be approved by the BLM's Authorized Officer and CPM prior to use.

d. The applicant shall establish chain-of-custody procedures to insure that specific individuals are responsible for sample integrity from commencement of sample collection through delivery to an approved laboratory. Sample collection, storage, and analysis shall be conducted in accordance with an approved SAP. The most recent version of the approved SAP shall be kept at the ISEGS project.

e. The applicant shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to ensure accuracy of measurements, or shall insure that both activities will be conducted.

f. A grab sample is defined as an individual sample collected in fewer than 15 minutes.

g. A composite sample is defined as a combination of no fewer than eight individual samples obtained over the specified sampling period at equal intervals. The volume of each individual sample shall be proportional to the

discharge flow rate at the time of sampling. The sampling period shall equal the discharge period, or 24 hours, whichever period is shorter.

2. Operational Requirements

a. *Sample Results*

The applicant shall maintain all sampling and analytical results including: strip charts; date, exact place, and time of sampling; date analyses were performed; sample collector's name; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the BLM's Authorized Officer and CPM.

b. *Operational Log*

An operation and maintenance log shall be maintained at the ISEGS project. All monitoring and reporting data shall be recorded in a permanent log book.

3. Reporting

a. For every item where the requirements are not met, the applicant shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time, and shall submit a timetable for correction.

b. All sampling and analytical results shall be made available to the BLM's Authorized Officer and CPM upon request. Results shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the BLM's Authorized Officer and CPM.

c. The applicant shall provide a brief summary of any operational problems and maintenance activities to the BLM's Authorized Officer and CPM with each monitoring report. Any modifications or additions to, or any major maintenance conducted on, or any major problems occurring to the wastewater conveyance system, treatment facilities, or disposal facilities shall be included in this summary.

d. Monitoring reports shall be signed by:

iii. In the case of a corporation, by a principal executive officer at least of the level of vice-president or his duly authorized representative, if such representative is responsible for the overall operation of the ISEGS project from which the discharge originates;

iv. In the case of a partnership, by a general partner;

iii. In the case of a sole proprietorship, by the proprietor; or

iv. In the case of a municipal, state or other public project, by either a principal executive officer, ranking elected official, or other duly authorized employee.

e. Monitoring reports are to include the name and telephone number of an individual who can answer questions about the report.

ATTACHMENT B
GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES

1. Good housekeeping measures for construction materials include:
   a. Maintaining an inventory of the products used and/or expected to be used and the end products that are produced and/or expected to be produced.
   b. Covering and berming loose stockpiled construction materials (e.g. soil, spoils, aggregate, fly-ash, stucco, hydrated lime, etc.).
   c. Storing chemicals in watertight containers or in a bermed storage shed (completely enclosed) with appropriate secondary containment.
   d. Minimizing contact of construction materials with precipitation.
   e. Implementing BMPs to reduce or prevent the offsite tracking of loose construction and landscape materials.
2. Good housekeeping measures for waste management include:
   a. Preventing disposal of any rinse/wash waters or materials into the storm drain system.
   b. Berming sanitation facilities (e.g. Porta Potties) and preventing them from being kept within the curb and gutter or on sidewalks or adjacent to a storm drain.
   c. Cleaning or replacing sanitation facilities and inspecting them regularly for leaks and spills.
   d. Covering waste disposal containers when they are not in use and preventing them from overflowing.
   e. Berming and securely protecting stockpiled waste material from wind and rain at all times unless actively being used where a spill or spills would enter surface drainage systems.

f. Implementing procedures to deal with hazardous and non-hazardous spills.

g. Preparing and implementing a spill response and implementation plan prior to commencement of construction activities, including:

i. Locations of onsite equipment and materials for cleanup of spills and leaks.

ii. Procedures to follow in the event of spill or leak that includes immediate cleanup.

iii. Locations and procedures of disposing of waste materials.

iv. Identification of and training for spill response personnel.

h. Lining and berming of concrete washout areas so there is no leakage or overflow into the underlying soil or the surrounding areas. Washout areas must be positioned away from drain inlets and waterways and be clearly labeled.

3. Good housekeeping measures for vehicle storage and maintenance include:

a. Not allowing oil, grease, or fuel to leak in to the soil.

b. Placing all equipment or vehicles to be fueled, maintained and/or stored in a designated area fitted with appropriate BMPs.

c. Cleaning leaks immediately and disposing of leaked materials and sorbents properly.

d. Fixing leaks immediately or removing equipment for service.

4. To assess the potential pollutant sources and identify all areas of the site where good housekeeping or additional BMPs are necessary to reduce or prevent pollutants in storm water discharges and non-storm water discharges, the applicant must assess and report on the following:

a. The quantity, physical characteristic (liquid, powder, solid, etc.), and locations of each potential pollutant source handled, produced, stored, recycled, or disposed of at the site.

b. The degree to which pollutants associated with those materials may be exposed to and mobilized by contact with storm water.

c. The direct and indirect pathways that pollutants may be exposed to storm water discharges and non-storm water discharges. This must include an assessment of past spills or leaks, non-storm water discharges, and discharges from adjoining areas.

d. Sampling, visual observation, and inspection records.

e. Effectiveness of existing BMPs to reduce or prevent pollutants in storm water discharges and non-storm water discharges.

GEOLOGY, PALEONTOLOGY AND MINERALS

76. Page Geology and Paleontology 4, last paragraph, revise as follows:

Local subsidence in the form of sinkholes was observed ~~at the site and~~ along the northern edge of Ivanpah Dry Lake. While sinkholes can sometimes be attributed to groundwater withdrawal as well as other causes, the cause in this case is believed to be from dehydration of clays ~~between~~ **beneath** the **playa** ~~soil~~ surface ~~and the water table~~ resulting in a major loss of volume and the collapse of overlying soils. ~~The potential for such shrinkage to affect structural components must be mitigated through facility design protocols consistent with the CBC. Condition **GEO-1** as well as the conditions listed in the **Facility Design** section of this Decision will ensure compliance with CBC requirements. (Ex. 1, Appendix 5.4A; Ex. 300, pp. 6.15-10, 6.15-16.)~~

77. Page Geology and Paleontology 6, first paragraph, revise as follows:

Quaternary alluvial deposits underlying the project site typically ~~contain a wide variety of vertebrate~~ **lack scientifically significant** fossils. Applicant's ~~records search~~ **field survey** revealed that significant paleontological resources ~~have been documented~~**occur** in nearby Paleozoic carbonate bedrock**,** ~~and could be~~ **but are highly unlikely to be** encountered during construction of the Ivanpah 3 plant and linear facilities. ~~However,~~ **Therefore,** the young to intermediate age alluvium that underlies the majority of the site, as well as Pre-Cambrian metamorphic rocks located just northeast of Ivanpah 2, are considered to be of low to negligible sensitivity for paleontological resources. (Ex. 1, § 5.8.4, Appendix 5.8; Ex. 300, p. 6.15-22.)

LAND USE

78. Page Land Use 9, last paragraph, revise as follows:

~~No significant new environmental issues were raised in the comments.~~ **Intervenor County of San Bernardino requested and Staff recommended that proposed condition REC-1, requiring the construction of an interpretive center from which the public can learn more about the constructed solar energy project be included in our decision. The PMPD inadvertently omitted the condition. As CEC decisions do not have a separate recreation analysis, the provisions of REC-1 are added as Condition Land-3, below. While this will not reduce the project's cumulative contribution to a loss of desert lands for recreational and other uses to insignificant levels, it will serve to educate the public about the technology and about the**

value of renewable energy generation. In its comments, the applicant agrees to the imposition of this requirement.

79. Page Land Use 12, following last paragraph, add:

LAND-3: Prior to the start of commercial operations of the first ISEGS power plant to be constructed, the project owner shall prepare plans for a Solar / Ecological Interpretive Center to be developed to in the vicinity of the ISEGS project. The project owner in consultation with the County shall propose a location on-site or off-site that provides a vantage point to observe as many features as is possible of the ISEGS project without compromising safety or security. The project owner's plans for the Solar / Ecological Interpretive Center may be coordinated with San Bernardino County.

The Solar / Ecological Interpretive Center shall include or make accessible to the public the following features:

1. surfaced public parking

2. information kiosks describing ISEGS solar energy technology;

3. picnic area with tables,

4. garbage cans;

5. interpretive signs identifying local landmarks and ecological features;

6. a contained restroom facility (or reasonable access to a facility with flush toilets and sinks should the Solar / Ecological Interpretive Center be constructed adjacent to another facility having a restroom).

Verification: At least 30 days prior to commercial operation of the first power plant of the ISEGS development, the project owner shall submit plans to BLM's Authorized Officer and the CPM for review and approval for a Solar / Ecological Interpretive Center to be developed in the ISEGS vicinity in coordination with San Bernardino County.

Within 6 months of approval of the proposed Solar /Ecological Interpretive Center plans (1) by the Commission and the BLM, for an on-site Center, or (2) by the County of San Bernardino, for an off-site Center, being final and no longer subject to administrative or judicial review, the project owner shall commence construction of the Center and shall to the extent feasible

complete construction within one year following the start of construction if the Center is located off of the ISEGS site. If located on-site, then construction of the Center shall follow the completion of all ISEGS construction. Upon completion the project owner shall submit notice to BLM and the Energy Commission that it has completed construction of the Solar / Ecological Interpretive Center.

In each Annual Compliance Report, the project owner shall provide a summary of estimated public use of the Solar / Ecological Interpretive Center and summarize any issues associated with operating and maintenance activities.

TRAFFIC AND TRANSPORTATION

80. Page Traffic and Transportation 18, insert inadvertently omitted Condition Trans-5 as follows:

Power Tower Lighting

TRANS-5 The project owner shall ensure that each power tower is marked and lighted according to the recommendations included in the FAA aeronautical study performed for each tower. Additionally, the project owner shall submit FAA Form 7460-2 Part II, Notice of Actual Construction or Alteration, to the FAA within 5 days of completion of construction of the tower to its greatest height.

The project owner shall provide evidence of compliance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting by submitting a copy of Form 7460-2 to BLM's Authorized Officer and the CPM for review and approval upon completion of construction or each power tower.

Verification: Within 5 days of completion of construction of each of the three power towers, the project owner shall submit the above referenced evidence to BLM's Authorized Officer and the CPM for review and approval.

SOCIOECONOMICS

81. Page Socioeconomics 2, revise fourth paragraph as follows:

Subsequent to submission of both Applicant's and Staff's analysis of the workforce, the Applicant executed a Project Labor Agreement with 50 Southern California labor unions to provide the majority of project construction workers from the Inland Empire areas of San Bernardino and Riverside Counties. The previous analysis assumed that most of the workers would commute from the Las Vegas area. (**Ex. 1, § 5.10.4.3.1;** 12/14/09 RT 114:15-25, 115:1-18.)

82. Page Socioeconomics 5, revise first paragraph and following Table 7 as follows:

Staff's **Socioeconomics and Environmental Justice Table 7**, replicated below, summarizes the project's anticipated economic benefits. As a result of the **revised** ~~updated~~, smaller footprint for ISEGS Phase III, the number of employees and the potential economic benefits would be reduced proportionately; however, since there are no project-related population growth socioeconomic impacts, the smaller footprint would not change that finding. (Ex. **88, p. 3-9**~~——~~.)

Socioeconomics and Environmental Justice Table 7
Noteworthy Public Benefits
Related to Ivanpah Solar Electric Generating System

Fiscal Benefits	
Estimated annual property taxes	$2.2 million per year
State and local sales taxes: Construction	$6.0 million
State and local sales taxes: Operation	$2,090 per year
School Impact Fee	$3,195
Non-Fiscal Benefits	
Total capital costs	$1,100 million
Construction payroll	$197 million
Operations payroll	$5.4 million
Construction materials and supplies	$77 million
Operations and maintenance supplies	$4.0 million per year
Direct, Indirect, and Induced Benefits	
Estimated Direct Employment	
Construction	An average of 474 jobs per month
Operation	90 full-time jobs
Estimated Secondary Employment	
Construction	~~528~~ **1,151** jobs
Operation	~~12~~ **30** jobs
Estimated Secondary Income	
Construction	$~~20.5~~ **44.8**million
Operation	$~~470,150~~ **1.1 million**

Source: Ex. 300, p. 6.8-20.

83. Page Socioeconomics 6, revise first paragraph as follows:

~~According to Applicant, since the mitigated project will not result in high and adverse impacts to any population, the project will not result in any disproportionate impacts to environmental justice populations.[4] Staff's analysis reflects the same conclusion.~~

[4] ~~The evidentiary record indicates that the fully mitigated project will not result in any significant adverse environmental or public health impacts to any population, regarding the following technical topics:~~ **~~Air Quality, Hazardous Materials Management, Land Use, Noise, Public Health, Socioeconomics, Soils and Water Resources, Traffic and Transportation, Transmission Line Safety and Nuisance, Visual Resources, and Waste Management~~**~~. The analyses for each topic were based on well-established scientific protocols and regulatory standards, which account for sensitive receptors that are presumed to be most susceptible to adverse environmental~~

Although the project will result in significant unmitigated impacts to Biological Resources, Land Use, Traffic and Transportation, Transmission Systems Engineering, and Visual Resources, those impacts will not fall disproportionately on an environmental justice population. (Exs. 1, App. 5.10B; 300, pp. 6.8-6 – 6.8-7.)

84. Page Socioeconomics 9, delete Finding of Fact 15 and renumber the Findings.

NOISE AND VIBRATION

85. Page Noise and Vibration 1, second paragraph, revise as follows:

The project will be constructed on ~~4,073~~ **3,582** acres of federally owned land, administered by the BLM, located in San Bernardino County. The nearest residences are in the town of Primm, Nevada, approximately 4.5 miles away. The Primm Valley Golf Club is about 0.5 miles northeast of the eastern boundary of the Ivanpah 1 phase of the project. (Ex. 300, p. 6.6-5.) The nearest boundary of the Mojave National Preserve is located approximately 2.2 miles from the proposed location of the nearest project power block (Ivanpah 3). (FEIS, p. 4.7-7)

86. Page Noise and Vibration 2, third and fourth full paragraphs, revise as follows:

Construction noise is a temporary event, in this instance expected to last about ~~48~~ **42** months. High-pressure steam blows are typically the loudest noise encountered during construction. If not silenced, these could create noise levels of roughly 95 dBA at the golf course and 76 dBA at Primm. With a temporary silencer installed, or the use of other measures as provided in Condition **NOISE- 7**, the noise levels will be attenuated to no more than 60 dBA and 55 dBA at these locations, respectively. (Ex. 300, pp. 6.6-7 to 6.6-8.) **The temporary silencer will also maintain noise during steam blows to no greater than 55 dBA measured at the nearest boundary of the Mojave National Preserve (FEIS, p. 4.7-7).** Similarly, pile driving, if used, could create noise levels of nearly 50 dBA at Primm and 58 dBA at the golf course. The evidence shows that these increases will be temporary. (*Id.*)

Construction of the linear facilities progresses rapidly, thus not subjecting any one receptor to noise impacts for more than a few days. Moreover, with the exception of ~~0.5~~ **1.5** mile of gas pipeline ~~and 570 feet of water line~~ **and the paving of 1.6 miles of Colosseum Road**, all linear facilities will be within the project site and construction noise impacts will be similar to those for the power plant.

~~or public health impacts.~~

87. Page Noise and Vibration 3, first paragraph, revise as follows:

To ensure construction noise levels will not be disruptive at the nearest receptors, we have adopted Conditions of Certification **NOISE-1, NOISE-2,** and **NOISE-6**. The first two Conditions establish a notification and complaint process to resolve issues arising from any excessive construction noise; Condition **NOISE-6** limits **noisy** construction to the hours between 7:00 a.m. and 7:00 p.m. (Ex. 300, pp. 6.6-6 to 6.6-8.) Overall, the evidence establishes that construction noise levels at Primm and at the golf course will not be annoying. (Ex. 300, p. 6.6-6.)

88. Page Noise and Vibration 4, Finding of Fact 3, revise as follows:

3. Construction noise levels are temporary and transitory in nature and will be mitigated to the extent feasible by sound reduction devices, limiting **noisy** construction **activities** to day-time hours, and providing a notice and complaint process to the public.

89. Page Noise and Vibration 6, Condition Noise-2, revise as follows:

Noise Complaint Process

NOISE-2 Throughout the construction **(including the steam blow activities)** and operation of the ISEGS, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The project owner or authorized agent shall:

- Use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to BLM's Authorized Officer, 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 related to the complaint;
- Take all feasible measures to reduce the noise at its source if the noise is project related; and
- Submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts, and if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant's satisfaction.

Verification: Within 5 days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form with BLM's Authorized Officer, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 3-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

90. Page Noise and Vibration 7, Condition Noise-4, revise as follows:

Noise Restrictions

NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause noise complaints from residents of Primm, Nevada, from the operator of the Primm Valley Golf Course**, or from the visitors of the Mojave National Preserve**. If legitimate project-related noise complaints are received from residents of Primm, the project owner shall perform a noise survey to demonstrate that noise levels due to plant operation do not exceed an average of 45 dBA L_{eq} measured at the nearest residence of the community of Primm, Nevada. If legitimate project-related noise complaints are received from the operator of the Primm Valley Golf Course **or the visitors of the Mojave National Preserve,** the project owner shall perform a noise survey to demonstrate that noise levels due to plant operation do not exceed an average of 55 dBA L_{eq} measured at the nearest boundary of the golf course, **or the nearest boundary of the Mojave National Preserve, respectively**. No new project components creating pure-tone noises will be added to ~~by~~ the project unless they are balanced by other plant features. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

A. The measurement of power plant noise for the purposes of demonstrating compliance with this mitigation measure may alternatively be made at a location, acceptable to BLM's Authorized Officer, 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 location. The character of the plant noise shall be evaluated at the affected residential locations to determine the presence of pure tones or other dominant sources of plant noise.

Verification: The survey shall take place within 30 days of the receipt of the noise complaint, unless the complaint has been resolved to the complaining party's satisfaction. Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to BLM's Authorized Officer. Included in the survey report will be a description of additional mitigation measures (if any) necessary to achieve compliance with the above-listed noise limit and a schedule, subject to BLM's Authorized Officer 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 BLM's Authorized Officer a summary report of the new noise survey, performed as described above and showing compliance with this measure.

91. Page Noise and Vibration 8, Condition Noise-6, revise as follows:

Construction Time Restrictions

NOISE-6 ~~Heavy equipment operation and n~~**N**oisy construction work **or heavy equipment operation** that causes off-site annoyance as evidenced by the filing

of a legitimate noise complaint shall be restricted to the 7:00 a.m. to 7:00 p.m. time period.

Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

Verification: Prior to ground disturbance, the project owner shall transmit to BLM's Authorized Officer and the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

92. Page Noise and Vibration 8, Condition Noise-7, revise as follows:

Steam Blow Restrictions

NOISE-7 If a high-pressure steam blow is employed, the project owner shall equip steam blow piping with a temporary silencer or take other effective measures that quiet the noise of steam blows to no greater than 60 dBA measured at the Primm Valley Golf Club, **to** ~~and~~ no greater than 55 dBA measured at any affected residential locations in Primm, NV, and **to no greater than 55 dBA measured at the nearest boundary of the Mojave National Preserve.** The project owner shall conduct high-pressure steam blows only during the hours of 7:00 a.m. to 7:00 p.m.

If a low-pressure continuous steam blow is employed, the project owner shall limit the noise of steam blows to no greater than 45 dBA measured at any affected residential location in Primm, NV. In lieu of specifying the level of silencing above, the project owner may alternatively submit an analysis to the BLM's Authorized Officer that documents that during either high or low pressure steam blows, steam blow noise levels would not exceed 60 dBA at the Primm Valley Golf Club (daytime), or 55 dBA (daytime)/45 dBA (nighttime) at the nearest residential location in Primm.

Verification: At least fifteen (15) days prior to the first high pressure steam blow, the project owner shall submit to BLM's Authorized Officer drawings or other information describing the temporary steam blow silencer or other noise attenuating measures to be taken, the noise levels expected and a description of the steam blow schedule.

VISUAL RESOURCES

93. Page Visual Resources 27, add the following paragraph immediately before the "Findings of Fact as follows:

Staff, in its PMPD Comments, recommends a finding of significant visual impact from the aviation safety lighting of the project power towers on the nighttime sky. That recommendation is based upon a comment on the FSA/DEIS made by Commission Staff, speculating that such an impact might exist. The FSA/DEIS, in response to a similar, earlier comment by the National Parks Conservation Association, concluded that such an impact would not be significant and we adopted that conclusion in the PMPD. Neither the earlier comment nor Staff's recommendation is

accompanied by any new information to suggest a different conclusion is warranted; we do not alter our conclusion that the potential impact is not significant. Condition of Certification **VIS-4** requires that project lighting be designed, located and operated to minimize the light escaping the project site, excepting, of course, the safety lighting for the towers, which must be visible from off site.

94. Page Visual Resources 28, Finding of Fact 9, revise as follows to conform with the discussion in the text:

9. The visual effects of the ISEGS in combination with past, present, and reasonably foreseeable projects in the ~~area~~ Ivanpah Valley ~~are not in the same viewshed as the ISEGS so they~~ will ~~not~~ be cumulatively considerable. The ISEGS project will ~~not~~ therefore result in significant cumulative impacts.

95. Page Visual Resources 28, Conclusion of Law 2, revise as follows:

2. Significant, unmitigated direct and cumulative visual impacts will remain after implementation of the Conditions of Certification.

96. Page Visual Resources 28, Condition VIS-1, revise as follows:

Surface Treatment Of Project Structures And Buildings

VIS-1 The project owner shall treat the surfaces of all project structures and buildings visible to the public, **other than surfaces that are included to direct or reflect sunlight,** such that a) their colors minimize visual intrusion and contrast by blending with the existing tan and brown color of the surrounding landscape; **and** b) their colors and finishes do not create excessive glare~~; and c) their colors and finishes are consistent with local policies and ordinances~~. The transmission line conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive.

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;~~

~~B. A list of each major project structure, building, tank, pipe, and wall; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number; or according to a universal designation system;~~

~~C. One set of color brochures or color chips showing each proposed color and finish;~~

~~D. A specific schedule for completion of the treatment; and~~

~~E. A procedure to ensure proper treatment maintenance for the life of theproject.~~

~~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 BLM's Authorized Officer and the CPM. Subsequent modifications to the treatment plan are prohibited without BLM's Authorized Officer and CPM approval.~~

Verification: At least 90 days prior to specifying to the vendor the colors and finishes **for each set** of ~~the first~~ structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to BLM's Authorized Officer and the CPM for review and approval and simultaneously to San Bernardino County for review and comment. If BLM's Authorized Officer and the CPM determine that the plan requires revision, the project owner shall provide to BLM's Authorized Officer and the CPM a plan with the specified revision(s) for review and approval by BLM's Authorized Officer and the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to BLM's Authorized Officer and the CPM for review and approval. **BLM's Authorized Officer and the CPM shall review and approve the Surface Treatment Plan or identify any material deficiencies within thirty (30) days of receipt.**

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;**

B. **A list of each major project structure, building, tank, pipe, and wall; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number; or according to a universal designation system;**

C. **One set of color brochures or color chips showing each proposed color and finish;**

D. **A specific schedule for completion of the treatment; and**

E. **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 BLM's Authorized Officer and the

CPM. Subsequent modifications to the treatment plan are prohibited without BLM's Authorized Officer and CPM approval.

Prior to the start of commercial operation, the project owner shall notify BLM's Authorized Officer and the CPM that surface treatment of all listed structures and buildings has been completed and they are ready for inspection and shall submit to each one set of electronic color photographs from the same key observation points identified in (d) 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.

97. Page Visual Resources 30, Condition VIS-2, revise as follows:

Landscape Screening Of Golf Course

VIS-2 At the request of, and in consultation with BLM's Authorized Officer, the CPM and the golf course owner, the project owner shall prepare a perimeter landscape screening plan to reduce the visibility of the proposed ISEGS project as seen from the golf course. The **purpose** ~~intent~~ of the plan shall be to provide screening of the power project, particularly the mirror fields, while retaining as much of the scenic portion of the overall views of Ivanpah Valley and Clark Mountains as feasible. The design approach shall be developed with prior consultation with the golf course owner, and implemented only at the golf course owner's request. The project owner shall submit to BLM's Authorized Officer and the CPM for review and approval and simultaneously to the golf course owner for review and comment a preliminary conceptual landscaping plan whose objective is to provide an attractive visual screen to views of the ISEGS project mirror fields. Upon approval by BLM's Authorized Officer and the CPM and golf course owner, the project owner shall submit to BLM's Authorized Officer and the CPM for review and approval and simultaneously to the golf course owner for review and comment a landscaping plan whose proper implementation will satisfy these requirements. ~~The plan shall include:~~

~~A. A detailed landscape, grading, and irrigation plan, at a reasonable scale. The plan shall demonstrate how the 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.~~

~~B. A list (prepared by a qualified professional arborist 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;~~

~~C. Maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal for the life of the project;~~

~~D. A procedure for monitoring for and replacement of unsuccessful plantings for the life of the project; and~~

~~E. One set each for BLM's Authorized Officer and the CPM of 11"x17" color photo-simulations of the proposed landscaping at five years and twenty years after planting, as viewed from adjoining segments of I-15 .~~

The plan shall not be implemented until the project owner receives final approval from BLM's Authorized Officer and the CPM.

Verification: The landscaping plan shall be submitted to BLM's Authorized Officer and the CPM for review and approval and simultaneously to the golf course owner for review and comment at least 90 days prior to installation of the landscaping. If BLM's Authorized Officer and the CPM determine that the plan requires revision, the project owner shall provide to BLM's Authorized Officer and the CPM and simultaneously to the golf course owner a revised plan for review and approval by BLM's Authorized Officer and the CPM. **The plan shall include:**

A. A detailed landscape, grading, and irrigation plan, at a reasonable scale. The plan shall demonstrate how the 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.

B. A list (prepared by a qualified professional arborist 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;

C. Maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal for the life of the project;

D. A procedure for monitoring for and replacement of unsuccessful plantings for the life of the project; and

E. One set each for BLM's Authorized Officer and the CPM of 11"x17" color photo-simulations of the proposed landscaping at five years and twenty years after planting, as viewed from adjoining segments of I-15.

The plan shall not be implemented until the project owner receives final approval from BLM's Authorized Officer and the CPM.

The planting must occur during the first optimal planting season following site mobilization. The project owner shall simultaneously notify BLM's Authorized Officer and the CPM and the golf course owner within seven days after completing installation of the landscaping, that the landscaping is ready for 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.

98. Page Visual Resources 31, delete Condition VIS-3:

~~**REVEGETATION OF DISTURBED SOIL AREAS**~~

~~**VIS-3** The project owner shall revegetate disturbed soil areas to the greatest practical extent, as described in Condition of Certification **BIO-14**. In order to address specifically visual concerns, the required Closure, Revegetation and Rehabilitation Plan shall include reclamation of the area of disturbed soils used for laydown, project construction, and siting of the substation and other ancillary operation and support structures.~~

~~**Verification:** Refer to Condition of Certification **BIO-14**.~~

99. Page Visual Resources 31, Condition VIS-4, revise as follows:

TEMPORARY AND PERMANENT EXTERIOR LIGHTING

VIS-4 To the extent feasible, consistent with safety and security considerations, the project owner shall design and install all permanent exterior lighting and all temporary construction 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. The project owner shall submit to BLM's Authorized Officer and the CPM for review and approval and simultaneously to the County of San Bernardino for review and comment a lighting mitigation plan. ~~that includes the following:~~

~~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; and~~

~~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.~~

Verification: At least 90 days prior to ordering any permanent exterior lighting or temporary construction lighting, the project owner shall contact BLM's Authorized Officer and 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 BLM's Authorized Officer and the CPM for review and approval and simultaneously to the County of San Bernardino for review and comment a lighting mitigation plan. If BLM's Authorized Officer and the CPM determine that the plan requires revision, the project owner shall provide to BLM's Authorized Officer and the CPM a revised plan for review and approval by BLM's Authorized Officer and the CPM. **BLM's Authorized Officer and the CPM shall approve or identify any material deficiencies in the Lighting Plan within 30 days following receipt of the Plan. The Lighting Plan shall include the following:**

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; and

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.

The project owner shall not order any exterior lighting until receiving BLM Authorized Officer and CPM approval of the lighting mitigation plan.

Prior to commercial operation, the project owner shall notify BLM's Authorized Officer and the CPM that the lighting has been completed and is ready for inspection. If after inspection, BLM's Authorized Officer and the CPM notify 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 BLM's Authorized Officer and 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 BLM's Authorized Officer and 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 BLM's Authorized Officer and the CPM within 48 hours after completing implementation of the proposal. A copy of the complaint resolution form report shall be submitted to BLM's Authorized Officer and the CPM within 30 days.

OVERRIDE FINDINGS

100. Page Override Findings 1 – 5, revise the Override Findings section in its entirety, as follows:

VIII. OVERRIDE FINDINGS

Our analysis of the Ivanpah Solar Electric Generating System (ISEGS) project finds that it will have several significant unmitigated environmental impacts. Before approving the project, the California Environmental Quality Act (CEQA) requires that we make certain findings. We address that requirement as follows:

The applicable CEQA requirement is contained in Public Resources Code Section 21081:

> "21081. Pursuant to the policy stated in Sections 21002 and 21002.1, no public agency shall approve or carry out a project for which an environmental impact report has been certified which identifies one or more significant effects on the environment that would occur if the project is approved or carried out unless both of the following occur:
>
> (a) The public agency makes one or more of the following findings with respect to each significant effect:
>
> (1) Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.

(2) Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.

(3) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report.

(b) With respect to significant effects which were subject to a finding under paragraph (3) of subdivision (a), the public agency finds that specific overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment."

1. Significant Project Impacts

As identified and discussed in the specific topic sections of this Decision, we find that ISEGS will have the following significant environmental impacts:

- **Biological Resources**. The creation of protected areas for the ten special-status plant species that could otherwise be directly impacted by construction of ISEGS, reduces most of the impacts to those plants to insignificant levels. Two plants (Mojave milkweed and desert pincushion), however, are distributed throughout the project site and cannot be protected by those means. Though Commission staff testified to a willingness to "accept a limited amount of uncertainty" regarding whether impacts to those two species would be mitigated, we, in an abundance of caution, find the potential impacts to be significant.
- **Land Use**. The contribution of ISEGS, in combination with the many other renewable energy projects proposed for the Ivanpah Valley and Mojave Desert, to the loss of desert lands, is cumulatively significant. Lands formerly available for multiple uses—habitat, grazing, recreation, and open space—would no longer be available for those uses once a power plant is constructed.
- **Traffic and Transportation**. Neither construction nor operation of the ISEGS project would have a significant impact on the local or regional road network, except for northbound Interstate 15 (I-15) on Friday afternoons and evenings. Project related vehicle trips occurring during that time window contribute to a significant cumulative impact by adding traffic to an already overloaded and congested I-15 that is already operating at Level of Service F and result in an unmitigable impact.
- **Transmission Systems Engineering**. For the power grid to accommodate the generation from ISEGS, the System Impact Study indicates that it is necessary to replace an approximately 36-mile portion of the Eldorado – Ivanpah leg of the existing Eldorado-Baker-Cool Water–Dunn Siding-Mountain Pass 115 kV transmission line and with a new 36-mile long, 220 kV double circuit transmission line. In doing so, special-status plant species habitat may be lost due to construction activities. That loss would be a significant impact. At this point, lacking precise information on the location of transmission line towers and the

methods of construction, it cannot be determined whether it is possible to avoid or mitigate the potential impacts. Without that information, we assume that the impact is significant.

- **Visual Resources**. The ISEGS project would result in the installation of a large, industrial facility in a highly visible and scenic area of the Mojave Desert. We find significant visual impacts from several Key Observation Points in the Ivanpah Valley, Clark Mountains, and along I-15.

2. Project Benefits

The ISEGS project, if constructed and operated as proposed, will provide the following benefits to California and its residents:

- ISEGS will provide 370 MW (assuming the construction of all three phases) of renewable energy power, which will assist in meeting California's Renewable Portfolio Standard, which specifies that retail sellers of electricity serve 20 percent of their load with renewable energy by 2010. (Pub. Util. Code, § 399.11 et seq.) Gubernatorial Executive Orders increase the requirement to 33 percent by 2020. (Governor's Executive Order S-14-08.)

- **Producing electricity from renewable resources provides a number of significant benefits to California's environment and economy, including improving local air quality and public health, reducing global warming emissions, developing local energy sources and diversifying our energy supply, improving energy security, enhancing economic development and creating jobs. (2009 CEC Integrated Energy Policy Report, page 231.)**

- **ISEGS will avoid more than 13 million tons of CO_2 emissions over the lifecycle of the Project, as well as 85 percent of the air emissions from an equally-sized natural gas plant.**

- **Scientific studies quantify the negative impacts of global climate change to California's and the world's population, food supplies, public health and environment, including flora and fauna of coastal and desert regions. In order to reduce the impact, the State has adopted goals to reduce greenhouse gas (GHG) emissions through, among other things, renewable energy development.**

- ISEGS will assist the state in meeting its ambitious Greenhouse Gas reduction targets by generating 370 MW of electricity with vastly lower greenhouse gas emissions than existing fossil fuel burning generating facilities.

- **In its June 2010, Staff Report on California's Renewable Electricity Standard, Initial Statement of Reasons, the California Air Resources Board (CARB) estimates that the environmental benefits resulting from a 33 percent renewable energy regulation in 2020 are as follows:**

a. **GHG reductions from California's electricity sector by at least 12 million metric tons of carbon dioxide equivalent (MMTCO$_2$E) in 2020, making renewable energy development one of California's largest GHG emission reduction strategies.**

b. **The overall GHG emission benefit from adding wind and solar generation is 830 lbs CO$_2$e per MWh (GHG emissions from displaced or avoided fossil fuel generation) minus emissions from combustion turbines used to backup wind and solar generation.**

c. **Reductions in statewide criteria pollutant emissions by five to 10 percent. These criteria pollutants under the Clean Air Act include reactive organic gas (ROG), NO_X, SO_X, CO, and $PM_{2.5}$. Most of the pollutant reductions result from decreased generation by existing natural gas plants. These reductions, in turn, should lead to reductions in the incidence of a variety of adverse health impacts.**

d. **Decreased statewide emission of toxic air contaminants (TACs) as fossil-fuel power generation—including coal, once-through cooled, and natural gas generation—is displaced by renewable generation.**

- By generating electricity with the use of a small amount of fossil fuels, ISEGS will reduce California's dependence on fossil fuels, a diminishing energy source.
- Electricity produced by ISEGS will displace fossil-fuel derived power and reduce the need to operate less efficient peaking power plants.
- ISEGS will provide construction jobs for an average and peak workforce of 474 and 959, respectively, and approximately 90 jobs during operations. Most of those jobs will require highly trained workers.
- With total capital costs for Ivanpah 1, 2, and 3 estimated to be $1.**8**~~1~~ billion, construction of ISEGS will provide a boost to the economy from the purchase of major equipment, payroll, and supplies. Approximately $5.7 million will be spent annually during project operations. Additional indirect benefits will result from these expenditures as well.

3. Comparison of Project Alternatives

As is discussed in the Alternatives section, none of the project alternatives will significantly reduce the project impacts. The no project alternative, which would eliminate the project's impacts, would also eliminate its benefits. The distributed solar energy (photovoltaic or thermal) generation and other renewable technologies are required *in addition to* large scale projects such as this in order to meet the Renewable Portfolio Standard; the two complement, rather than compete with, each other.

4. Official Notice

In arriving at the following findings, we have taken official notice of the following documents:

- **The California Renewables Portfolio Standard (RPS) enacted in 2002 under Senate Bill 1078 and further accelerated in 2006 under Senate Bill 107. The RPS program requires electric corporations to increase procurement from eligible renewable energy resources by at least 1 percent of their retail sales annually, until they reach 20 percent by 2010.**

- **EXECUTIVE ORDER S-21-09 signed by Governor Arnold Schwarzenegger establishing the 33 percent Renewable Electricity Standard.**

- **Climate Action Team Report to Governor Schwarzenegger and the Legislature. CalEPA, March 2006.**

- **AB 32 Scoping Plan. CARB, December 2008.**

- **Integration of Renewable Resources. CAISO, Nov. 2007.**

- **2007 Integrated Energy Policy Report. CEC, Nov. 2007.**

- **2009 Integrated Energy Policy Report. CEC. Nov. 2009.**

- **California Air Resources Board Staff Report on California's Renewable Electricity Standard, Initial Statement of Reasons, June 2010.**

- **Draft Final Opinion on Greenhouse Gas Regulatory Strategies:**

    - **Joint Agency Proposed Final Opinion. CPUC/CEC 2008.**

- **Framework for Evaluating Greenhouse Gas Implications of Natural Gas-Fired Power Plants in California. CEC (MRW and Associates). May 2009.**

5. Conclusion

The ISEGS project helps address a global climate change problem of paramount importance and responds to state laws requiring a shift to renewable electricity sources. To meet these goals, numerous renewable energy projects are needed. As shown in the record, much of the debate over the ISEGS project was over the significant adverse impacts to biological resources of the Ivanpah Valley, specifically the federally-listed threatened species, desert tortoise and special-status plants found on the project site. There was general agreement by wildlife, botanical, and ecology experts that testified at the evidentiary hearings that there is a combination of both natural and manmade processes that are affecting the global climate; and that these special-status species are not immune to the

effects of climate change, but it is possible that they could adapt and survive if given enough time. There was also general agreement that the exact impacts of climate change to the biological resources in the Ivanpah Valley are unknown – various models predict varying temperature changes and precipitation amounts for California's desert region – resulting in potential detriment or benefit to biological resources, depending on the habitat needs of the species. (1/12/2010 RT 34-73.) The Energy Commission's approval of the project balances the impact on important biological resources with the benefit of cleaner energy sources. While acknowledging that uncertainty exists as to best biological resource management practices, the Energy Commission believes it has taken significant steps to minimize and offset those impacts.

FINDINGS OF FACT

Based on the evidence and the conclusions drawn in this Decision, we make the following findings and conclusions:

1. Climate change poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.

2. The proposed project will have the following significant impacts which cannot be mitigated to insignificant levels:

    a. The potential loss of habitat for the Mojave milkweed and desert pin cushion due to construction and operation of the project.

    b. The cumulative loss of multiple use lands in the Ivanpah Valley and Mojave Desert due to the approval of this project.

    c. A cumulative contribution to traffic levels on northbound I-15 on Friday afternoons and evenings, a time when I-15 is already overcrowded and congested.

    d. The potential loss of special status plant species habitat during the removal and construction of a replacement transmission line on a 36 mile portion of the Eldorado – Ivanpah leg of the existing Eldorado-Baker-Cool Water–Dunn Siding-Mountain Pass 115 kV transmission line.

    e. Degredation of scenic vistas for motorists, recreationists, hikers, and others from various points in the Ivanpah Valley, Clark Mountains, Mojave Preserve, and Stateline Wilderness Area.

3. This Decision **will result in mitigation of all direct project impacts for ISEGS, except as described immediately above, and** imposes all feasible mitigation measures to reduce the significant impacts of the project to the lowest possible, though still significant, levels.

4. The project will provide the following benefits:

a. 370 MW of renewable energy power will contribute in meeting California's Renewable Portfolio Standard.

b. Results in a significant reduction in greenhouse gas emissions over existing fossil fuel-burning generating facilities.

c. Reduces California's dependence on fossil fuels.

d. Creation of construction jobs for an average and peak workforce of 474 and 959, respectively, and approximately 90 jobs during operations, most requiring highly trained workers.

e. Expenditures of approximately $1.**8**~~1~~ billion of capital and annual expenditures of approximately $5.7 million

5. Of the identified Alternatives, only the no project alternative would reduce the impacts of the proposed project but it would also eliminate its benefits.

CONCLUSIONS **OF LAW**

1. The above described project benefits outweigh the significant impacts identified above.

2. It is appropriate to approve the ISEGS project despite its remaining significant environmental impacts.

~~3. As shown in the record, much of the debate over the ISEGS project was over the significant adverse impacts to biological resources of the Ivanpah Valley, specifically the federally-listed threatened species, desert tortoise and eight special-status plants found on the project site. There was general agreement by wildlife, botanical, and ecology experts that testified at the evidentiary hearings that there is a combination of both natural and manmade processes that are affecting the global climate; and that these special-status species are not immune to the effects of climate change, but it is possible that they could adapt and survive if given enough time. There was also general agreement that the exact impacts of climate change to the biological resources in the Ivanpah Valley are unknown – various models predict varying temperature changes and precipitation amounts for California's desert region – resulting in potential detriment or benefit to biological resources, depending on the habitat needs of the species. (1/12/2010 RT 34-73.) It is the intent of this Commission to take all reasonable measures to preserve the continued existence of the desert special-status species. This Commission believes that this project, and other renewable energy projects, will result in the reduction of greenhouse gases which will help curb or reduce the impact of climate change to California, thereby allowing for the continued existence of the desert special-status species.~~

3 4. Therefore, this decision overrides the remaining significant unavoidable impacts that may result from this project, even with the implementation of the required mitigation measures described in this decision.

Dated: September 20, 2010, at Sacramento, California.

JEFFREY D. BYRON
Commissioner and Presiding Member
Ivanpah AFC Committee

JAMES D. BOYD
Vice Chair and Associate Member
Ivanpah AFC Committee

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APPLICATION FOR CERTIFICATION
FOR THE *IVANPAH SOLAR ELECTRIC GENERATING SYSTEM*

DOCKET NO. 07-AFC-5
PROOF OF SERVICE
(Revised 3/11/10)

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DECLARATION OF SERVICE

I, Katherine Nicholls declare that on September 20, 2010, I served and filed copies of the attached, ERRATA TO THE PRESIDING MEMBER'S PROPOSED DECISION FOR THE IVANPAH SEGS Project. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[www.energy.ca.gov/sitingcases/ivanpah].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

FOR SERVICE TO ALL OTHER PARTIES:

__X__ sent electronically to all email addresses on the Proof of Service list;

_____ by personal delivery;

___ by delivering on this date, for mailing with the United States 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 "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

__X__ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

OR

_____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-5
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
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I declare under penalty of perjury 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.

Original Signed By:

KATHERINE NICHOLLS
Hearing Adviser's Office

*indicates change