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Mr. John Kessler, Project Manager
California Energy Commission
Systems Assessment and Facilities Siting Division
1516 9th Street, MS 15
Sacramento, CA 95814-5504

RE: Preliminary Staff Assessment Comments, Set 1
Ivanpah Solar Electric Generating System (07-AFC-5)

Dear Mr. Kessler:

On behalf of Solar Partners I, LLC, Solar Partners II, LLC, Solar Partners IV, LLC, and Solar Partners VIII, LLC, please find attached one original and 12 hard copies of Set 1 of Applicant's initial comments on the Preliminary Staff Assessment (PSA).

Please call me if you have any questions.

Sincerely,

CH2M HILL

John L. Carrier, J.D.
Program Manager

Enclosure

c: POS List
Project File

**Ivanpah Solar Electric Generating System (Ivanpah SEGS)
(07-AFC-5)**

PSA Comments, Set 1

Listed below, for CEC staff's consideration, are Set 1 of comments from Solar Partners I, LLC, Solar Partners II, LLC, Solar Partners IV, LLC, and Solar Partners VIII, LLC (collectively, the Applicant) on the Preliminary Staff Assessment (PSA) for the Ivanpah Solar Electric Generating System (Ivanpah SEGS) project. For ease of reference the comments have been sequentially numbered.

GENERAL COMMENTS

1. Throughout the AFC reference is made to "waters of the state." The initial indication we received from US Army Corps of Engineers (USACE) was that they were not going to assert jurisdiction over the washes that flow through the plant sites. However, based on more recent conversations with them, the Applicant is now "presuming" USACE jurisdiction; hence, references to "waters of the state" when referring to surface waters in the washes should be changed to "waters of the U.S."
2. Applicant is seeking separate conditions for each unit since each unit has different ownership. Therefore, mitigation should be applied to the specific unit causing the impact.
3. Various sections of the PSA refer to the different project sites as "Phases" 1, 2 and 3. We prefer that each unit be referred to as Ivanpah 1, 2 or 3 because actual construction phasing may not follow the sequential numbering of the units.

EXECUTIVE SUMMARY

4. Page 1-2, Project Location and Description, 4th para: There seems to some confusion about the equipment that comprises a heliostat. A heliostat is the pole along with the mirrors that move to track the sun. Hence, Ivanpah 1 and 2 will each contain up to 55,000 heliostats and 110,000 mirrors. Ivanpah 3 will contain up to 104,000 heliostats and 208,000 mirrors. This confusion is reflected elsewhere in the PSA.
5. Page 1-3, Water Supply and Discharge: "The applicant proposes to draw groundwater from one of two wells which would be constructed at the northwest corner of Ivanpah 1." As shown in Figure DR4-8 of Data Response Set 1 D (see also PSA Project Description - Figure 3), the two wells will be located northwest of Ivanpah 1 in the "Construction Logistics Area."
6. Page 1-3, Waste Management, 2nd para., 2nd sent.: The sewage package treatment plant at the administration building/operations and maintenance area would be used to treat wastewater from domestic waste streams generated at the administration building/operations and maintenance area only. Process wastewater from all power generating equipment, including the boilers, will be treated at each power block and recycled to be used as heliostat wash water.
7. Page 1-7, 2nd full para. See our comment in the Socioeconomics section, below.

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8. Page 1-9, Air Quality, para. 3, sent. 1: This sentence states that the “project’s ozone precursors and PM10 emissions during operation are minimal, but would likely be significant.” Using the terms “minimal” and “significant” when describing the same effects is contradictory. We agree that the emissions are minimal, but do not concur that they are significant.
9. Page 1-10, top of the page: “Ten special-status plant species would be directly impacted by construction of ISEGS, and staff considers impacts to four of these (Rusby’s desert-mallow, cave evening-primrose, Mojave milkweed, and desert pincushion) to be significant because the project would eliminate a substantial portion of known occurrences in the state.” Biological Resources Table 3 enumerates the loss in comparison to the number of reported occurrences. We disagree with this approach and would appreciate the opportunity to discuss in greater detail rare plant findings and impact determinations. Many parts of the Mojave Desert have not been surveyed for rare plants. The CNDDDB is a positive reporting database, meaning that current and verified occurrence records are only included if they have been voluntarily submitted, and only for those areas that have actually been surveyed for rare plants. For these reasons, it is likely that rare plant occurrences are under-reported. No consideration was given towards important ecological variables such as habitat quality, size of the occurrence, and geographic placement relative to the core population of the species. We believe that the PSA overstates the severity of the rare plant impacts. Additionally, we request clarification on the significance threshold used to determine impacts to rare plant species. Please see specific comments to Biological Resources, below.
10. Page 1-11, Land Use: A solar plant is an allowable use within Multiple Use Class L (Limited Use) land, so a CDCA Plan Amendment is not needed to add this use or change the land designation as this paragraph implies. Rather, the CDCA plan amendment will simply identify the specific solar plant. We disagree with the cumulative impacts discussion. Please see the specific comments to Cumulative Scenario below.
11. Page 1-12, 2nd para.: It is estimated that potable water use would average about 1 to 2 gallons per day per construction worker, or about 500 to 1,000 gallons per day during peak summer construction periods. The water would be brought to the site by the construction contractor.
12. Page 1-12, 3rd para.: For our comments on this paragraph, please see our comments below on “Page 5.9-1, 4th and 6th bullet, Page 5.9-2 Item 4, and similar discussions throughout Section 5.9 of the PSA.”

INTRODUCTION

13. No comments.

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PROJECT DESCRIPTION

14. Page 3-1, Project Description. In the 100 MW plants a single power tower combines boiler and reheater sections. In the 200 MW plant, the outlying towers serve as solar boilers and the central power tower combines reheat and superheater functions.
15. Page 3-3, Natural Gas Pipeline, last sent.: The last sentence combines a few functions. There will be one tap metering station located at the Kern River Gas Transmission Line. That tap station will measure and record gas volumes. Facilities will be installed at the tap station to regulate the gas pressure and to remove any liquids or solid particles. It may also contain a pigging station. In addition to the tap station, separate metering sets will be installed for each of the power plant sites. The three metering sets will only measure and record gas volumes.
16. Page 3-4, Vehicle Trails: It should be noted that trail 699198 would be rerouted between Ivanpah 2 and 3.
17. Page 3-4, Transmission System Interconnection and Upgrades, 1st sent.: For clarity, we recommend that the first sentence be revised as follows:

"The ISEGS project would deliver power on three new 115-kilovolt (kV) transmission generation tie lines to a new Ivanpah substation, ~~and~~ Southern California Edison (SCE) is planning to upgrade approximately 36 miles of its ~~Southern California Edison's (SCE) existing El Dorado - Baker - Coolwater-Dunn Siding-Mountain Pass transmission line~~ northeast of the Ivanpah substation from a 115-kV ~~transmission~~ line to 220 kV."
18. Page 3-5, 1st partial para.: Because SCE is planning the 220 kV upgrade as a master plan to serve numerous projects along its route, the utility will go forward with the upgrade even if ISEGS were not approved. Therefore, it is misleading to consider the upgrade's impacts as downstream impacts of ISEGS. It would be better to refer to Appendix A as a Description of SCE's Transmission Upgrade or to leave it out entirely.
19. Page 3-5, Telecommunication Facilities, last sent.: If you want to include it, the name of the 12-kV distribution line is "Earth."

CUMULATIVE SCENARIO

20. Page 4-1, 1st para.: "Preparation of a cumulative impact analysis is required under both CEQA and NEPA. "Cumulative impact" is the impact on the environment that results from the incremental impact of the proposed project when considered with other past, present, and reasonably foreseeable *probable* future actions regardless of which agency (federal or nonfederal) or person undertakes such other actions."

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Comment: The word "probable" should be added between "foreseeable" and "future" to conform with CEQA Guidelines 15065(a)(3).

The CEQA Guidelines and related case law confirm that cumulative impacts under CEQA deal with the potential interrelationships effects of two or more projects. Specifically, under Section 15130 of the CEQA Guidelines, an EIR is required to discuss cumulative impacts when the project's incremental effect is "cumulatively considerable." Section 15065(a)(3) defines "cumulatively considerable" as meaning "that the incremental *effects* of an individual project are significant when viewed in connection with the *effects* of past projects, the *effects* of other current projects and the *effects* of probable future projects." (Emphasis added.) Thus, a cumulative impact is an impact caused not by the effects of a single project, but rather from the effects of a proposed project when *combined with* the effects of past projects, current projects or probable future projects.¹

As discussed in the individual subject matters believe, the Applicant respectfully submits that several of the technical Staff's legal conclusions on cumulative impacts fail to focus on the combined "effects" of (1) the Ivanpah SEGS project with (2) specifically identified past, present, and reasonably foreseeable probable future actions.

By way of example, to find a potentially significant cumulative Visual effect, the Ivanpah SEGS project and the other past, present, and reasonably foreseeable probable future project must be in the same viewing area. In simplest terms, the visual effects of the Ivanpah SEGS project cannot "combine" with the visual impacts of another project that cannot be seen.

Similarly, to have the potential for a significant cumulative effect to water resources between the Ivanpah SEGS project and another past, present, and reasonably foreseeable probable future project, both projects must be within the same water shed, otherwise their effects cannot "combine". Stated in the negative, the Ivanpah SEGS project cannot have a potentially cumulative water resources effect with another project outside the watershed.

The fundamental problem with the cumulative impacts analysis in the PSA is that the PSA finds potentially significant cumulative effects between the Ivanpah SEGS project and other projects dispersed throughout the West.

For example, the PSA states with regards to Land Use: "When combined with impacts of the future solar and wind development projects that are currently proposed on over one million acres of land within southeastern California, southern

¹ Remy et al., Guide to the California Environmental Quality Act (11th ed. 2007), p. 465 (stating that "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts"). (Emphasis added.)

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Nevada, and western Arizona, regional impacts of the ISEGS project to land use would be cumulatively considerable and unavoidable." (PSA, P. 1-11)

The fundamental flaw with such a statement is that it does not look at the potential effects of the Ivanpah SEGS project with the effect of any specifically identified project in "southern Nevada and western Arizona". As such, the conclusion drawn is simply not consistent with CEQA and NEPA requirements for analysis of potential combined effects.

See also similar comments in individual subject matters below.

21. Page 4-1 to 4-2, Definition of a Cumulative Project Scenario, 2nd para.: "This Preliminary Staff Assessment (PSA) uses the 'list approach' to provide a tangible understanding and context for analyzing the potential cumulative effects of the project."

"In order to provide a basis for cumulative analysis for each discipline (e.g., biological resources, air quality), this section provides information on other projects in both maps and tables."

Comment: Under CEQA guidelines, if a list is used, factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type.² Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic.³ There is no discussion or explanation of why specific projects on Table 1 are listed. The discussion with respect to the Projects on Table 2 is extremely cursory.

22. Page 4-2, 1st para., 2nd sent.: "Projects are defined within a geographic area that has been identified by the Energy Commission and the Bureau of Land Management (BLM) as covering an area large enough to provide a reasonable basis for evaluating cumulative impacts for all disciplines, as shown in three maps and accompanying tables." While the geographic area must be large enough for reasonable analysis, it must not be too large. According to USEPA Guidance, "Importantly, the geographical boundaries should not be extended to the point that the analysis becomes unwieldy and useless for decision-making. In many cases, the analysis should use an ecological region boundary that focuses on the natural units that constitute the resources of concern."⁴

² CEQA Guidelines 15130(b)(2).

³ Id.

⁴ Consideration of Cumulative Impacts in EPA Review of NEPA Documents, U.S. Environmental Protection Agency, Office of Federal Activities (2252A), EPA 315-R-99-002/May 1999, <http://www.epa.gov/compliance/resources/policies/nepa/cumulative.pdf>

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23. Page 4-2, 1st bullet: "The analysis of cumulative effects for some disciplines requires consideration of the numerous solar and wind development applications for use of BLM land, including approximately 1 million acres of the CDD [California Desert District] Area." CEQA and NEPA principles on cumulative impacts analysis discussed herein dictate that the analysis of cumulative effects of the Ivanpah SEGS project for any discipline does not require consideration of the impacts of other projects on BLM land that are outside the potential impact areas of the Ivanpah SEGS project.

"Additional BLM land in Nevada and Arizona also has applications for solar and wind projects."

Comment: This statement is not relevant to the cumulative impacts analysis unless these Nevada and Arizona project's potential effects could possibly *combine with* the effects of the Ivanpah SEGS project. If, for example, Arizona projects are in a different watershed than the Ivanpah SEGS project, there can be no combined cumulative effects of these projects and the Ivanpah SEGS project. As discussed above, EPA Guidance dictates that, "the geographical boundaries should not be extended to the point that the analysis becomes unwieldy and useless for decision-making." Inclusion of projects in Nevada and Arizona would make the geographic boundaries unwieldy and useless.

24. Page 4-2, Approach to Cumulative Impact Analysis, 1st para.: "This Preliminary Staff Assessment evaluates cumulative impacts within the analysis of each resource area, following these steps:

"1. Define the geographic scope of cumulative impact analysis for each discipline, based on the potential area within which impacts of the ISEGS project could combine with those of other projects."

Comment: This is a correct statement of the first step. Unfortunately, the PSA does not do this because it includes in Table 1 projects outside the potential area (watershed, airshed, viewshed) wherein which the impacts of the ISEGS could combine with other projects. Under both CEQA and NEPA, lead agencies are required to define the geographic scope of the area affected by the cumulative effect of the proposed project. For example, CEQA Guideline section 15130(c)(3) states: "(3) Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used."

Generally, according to USEPA guidance, the selection of geographic boundaries should be "whenever possible, based on the natural boundaries of resources of concern." ⁵ For example, for the cumulative impacts analysis of air resources, the environmental document will generally consider the airshed or air basin in which

5 Id.

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the project is located.⁶ For water resources, the environmental document will consider the watershed in which the project is located. For visual resources, the typical geographical boundary for cumulative impact analysis is the project's viewshed.

There are several important reasons why the geographic scope of the cumulative analysis is limited to the natural boundaries of the affected resource. First, if the geographic boundaries are too large, the analysis becomes unwieldy and useless. USEPA Guidance expressly advises:

"EPA reviewers should recommend that the proper spatial scope of the analysis include geographic areas that sustain the resources of concern. Importantly, the geographical boundaries should not be extended to the point that the analysis becomes unwieldy and useless for decision-making. In many cases, the analysis should use an ecological region boundary that focuses on the natural units that constitute the resources of concern."⁷

Second, a project will make no contribution whatsoever to the environmental impacts outside of the project's natural geographical resource boundary. "The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable." CEQA Guidelines 15064(b)(4). In addition, "An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR." CEQA Guidelines 15130(a)(1). Unless it can be shown that impacts outside the natural boundaries of the affected resource are caused at least in part by the ISEGS, these extra-territorial impacts should not be discussed in the PSA.

For example, CalTrans Guidance for Preparers of Cumulative Impact Assessments explains that "To determine the appropriate geographic boundary for cumulative effects on a particular resource, think about how far an effect can travel. For example, watercourse sedimentation from construction activities can travel long distances downstream, while the impact of construction-period vibration is typically restricted to nearby development."⁸ For this reason the cumulative analysis in virtually all EIRs and EISs for specific development projects (as opposed to programmatic EIRs) is limited to the airshed, watershed or viewshed of the specific project.

The PSA proposes geographic boundaries (the entire California Desert Conservation Area or CDCA) that far exceed the permissible scope of a cumulative analysis under

6 Kings County Farm Bureau v. City of Hanford 221 Cal.App.3d 692

7 Consideration of Cumulative Impacts in EPA Review of NEPA Documents, U.S. Environmental Protection Agency, Office of Federal Activities (2252A); EPA 315-R-99-002/May 1999. Found online at: <http://www.epa.gov/compliance/resources/policies/nepa/cumulative.pdf>

8 http://www.dot.ca.gov/ser/cumulative_guidance/defining_resource.htm

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CEQA and NEPA. The CDCA is a vast geologically diverse area of more than 25 million acres, almost 1/4 of the state of California. (This area, if it was a state would be the 38th largest state.) These boundaries are a clear violation of the EPA's admonition not to draw boundaries that are so large as to be unwieldy and useless.

These boundaries similarly violate the CalTrans principle that the boundaries for each resource should be greater than the extent to which a project's effect can travel. The violation of CEQA principles is further compounded by Cumulative Figures 1 and 2 that appear to also include portions of Arizona and Nevada. For example, the geographical boundary of the project for the purpose of cumulative visual resources should extend to the viewshed of the project. Because the visual impacts of the ISEGS cannot travel throughout the CDCA, such a broad boundary is impermissible under CEQA.

25. Page 4-3, Geographic Scope of Cumulative Analysis, 1st para.: "The area of cumulative effect varies by resource. For example, air quality impacts tend to disperse over a large area, while traffic impacts are typically more localized. For this reason, the geographic scope for the analysis of cumulative impacts must be identified for each resource area." This is a correct statement of the analysis to be performed. Unfortunately, the PSA does not do this. As we explain in comments on the individual disciplines, the geographic scope of the cumulative impacts analysis of different resources is often poorly defined or contradictory.

26. Page 4-3, Geographic Scope of Cumulative Analysis, 3rd para. 3rd sent.: "However, to be conservative, the cumulative analysis assumes that all projects in the cumulative scenario are built and operating during the operating lifetime of the ISEGS project."

Comment: This is a correct approach *only* if all projects listed in the cumulative scenario have been properly screened for each resource to determine if they are reasonably foreseeable probable future projects. Otherwise, this purportedly "conservative" approach is in reality a complete dismissal of the legal principles that frame cumulative impacts analysis under CEQA and NEPA.

The PSA concedes that not all projects listed in Table 1 will be constructed. Yet, the PSA has not evaluated whether any of the projects listed in Tables 1 and 3 will in fact occur. Are these projects all in fact "reasonably foreseeable probable future projects?" The PSA cannot simply assume they are; an analysis is required, yet none is provided. Therefore, it is a very serious error to assume for the purpose of the cumulative analysis that all of these projects will be built and operating.

27. Page 4-3, Project Effects in Combination with Foreseeable Future Projects, 2nd and 3rd paras.: "Reasonably foreseeable projects that could contribute to the cumulative effects scenario depend on the extent of resource effects, but could include projects in the immediate Ivanpah area as well as other large renewable projects in the California, Nevada, and Arizona desert regions." "Ivanpah area projects are illustrated in Cumulative Impacts Figure 3, Ivanpah Valley Existing and Future

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Foreseeable Projects. As shown in the map and table, there are a large number of projects in the immediate area around Ivanpah whose impacts could combine with those of the proposed ISEGS project.”

Comment: There are 17 potential projects listed of varying size and duration in an area of approximately 199,000 acres (311 square miles). It is not correct to characterize the list of projects as a "large number" without reference to an objective measure. While it is fine to present a generic list in the Cumulative Scenario chapter, it is important to recognize that only some of the impacts of these projects will combine with the impacts from the proposed project. For example, projects that cannot be seen will not interact with the visual impacts of the ISEGS. Projects that do not have air emissions will not interact with the air impacts of the ISEGS. Unfortunately, under the separate disciplines the PSA generally fails to identify the projects that will actually impact the resource under discussion.

28. Page 4-3, Project Effects in Combination with Foreseeable Future Projects, 3rd para. 3rd sent.: “As shown on Cumulative Impacts Figure 1 and in Table 1, solar and wind development applications for use of BLM land have been submitted for approximately one million acres of the California Desert Conservation Area. Additional BLM land in Nevada also has applications for solar and wind projects, as shown in Figure 1.” The simple fact that a Plan of Development letter has been submitted does not mean that a project is a reasonably foreseeable probable project. In addition, most of these projects are located far outside the geographic boundaries of the area that might be impacted by the ISEGS. As noted above, the reference to Nevada is not explained.

29. Page 4-4, 1st paragraph and bullet points, statring with “While Cumulative Impacts Figures 1 and 2 and Table 1...”:

Comment: To say that not all of these projects will be constructed is a considerable understatement. The solar projects listed in Table 1 represent more than 55,000 MW.

Solar Area	Megawatts
Barstow	15,458
El Centro	5,890
Needles	19,650
Palm Springs	11,400
Ridgecrest	2,935
Total	55,333

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However, according to the Energy Commission's Energy Action Plan, only 12,000 MW of renewable energy is needed to meet the State's 33 percent renewable portfolio standard (RPS) goal.

The Commission's 2008 IEPR states that California will need 20,000 MW of renewable capacity additions (relative to a 2006 base) to meet a statewide goal of 33 percent renewables by 2020. (20087 IEPR, p. 16.) Accordingly, it is unreasonable to assume that 55,000 MW of new renewable projects will be built.

The Commission has stated that the 33 percent renewable goal will be met by a variety of resources from all over the Western United States. Only a small percentage of the solar projects listed on the BLM website are reasonably likely to be constructed and meet the States' RPS goals. Therefore, the assumption in the PSA's cumulative analysis that all of these projects will be built is a very serious error.

As another measure of scale, between 1998 and 2007, California hit an all-time high peak load of 50,270 MW on July 14, 2006.⁹ The PSA assumes all 55,333 MW identified would be built. A cumulative impacts analysis that satisfies NEPA and CEQA cannot reasonably (nor "conservatively") assume impacts from unspecified new generation that would exceed California's all time electrical peak by 5,000 MWs. The statement that not all of these projects will be constructed is no substitute for serious analysis. Rather than providing a long laundry list of possible projects and admitting that not all are foreseeable, CEQA and NEPA required that the lead agency must make a careful, case-by-case judgment as to whether particular possible future projects are truly "reasonably foreseeable" and thus deserve inclusion in a cumulative impacts analysis.¹⁰

30. Page 4-12, Table 3, Row J and Biological Resources Table 6 (p. 5.2-51): PPM Energy is in the CAISO queue for a 63 MW project, not 75 MW.

ENVIRONMENTAL ASSESSMENT

AIR QUALITY

31. Page 5.1-2, "The Mojave Desert Air Quality Management District issued the Final Determination of Compliance ("FDOC") for the project on December 3, 2008, finding that the project will comply with all applicable State, federal, and MDAQMD air quality Rules and Regulations.

⁹ <http://www.caiso.com/1fb4/1fb4af6c73260.pdf>

¹⁰ Guide to CEQA, Remy, p. 472

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32. Page 5.1-4, Existing Ambient Air Quality, 4th para.: Air quality monitoring data are taken from the Barstow, Trona, and Big Bear stations, not Victorville. Victorville is located 125 miles WSW of the project site, not 9 miles south.
33. Page 5.1-6 & 7, Air Quality Figure 1: Air Quality Figure 1 indicates that the state 24-hour ambient air quality standard for PM10 was exceeded every year from 2000 through 2006 except for 2004.
34. Page 5.1-9, Air Quality Table 4: As discussed below in the comments on Appendix Air-2, some corrections need to be made to the staff's calculation of total daily operating emissions and total annual operating emissions. The corrected Air Quality Table 4 is presented below, and the supporting calculations are presented in the comments on Appendix Air-2.

**Air Quality Table 4 (Revised)
Facility's Maximum Daily and Annual Emissions**

Operation and Construction	NOx	VOC	SOx	CO	PM10	PM2.5
Ph1 <u>Ivanpah 1</u> Construction (lb/day)	363	23	1	117	190 ^a	45
Ph1 <u>Ivanpah 1</u> Operation/ Ph-2 <u>Ivanpah 2</u> Construction (lb/day)	373	23	4	134	216 ^b	52 ^c
Ph1/Ph2 <u>Ivanpah 1/2</u> Operation/ Ph3 <u>Ivanpah 3</u> Construction (lb/day)	383	24	7	151	244 ^d	59 ^d
Operation						
Average Daily Operating Emissions (lbs/day)	<u>58</u> 60	15.5	<u>4</u> 40.3	<u>167</u> 209	<u>88</u> 409	<u>21</u> 52.5
Total Annual Operating Emissions (tons/year)	<u>10.5</u> 42	<u>2.6</u> 2.86	<u>0.7</u> 1.85	<u>30.4</u> 37.8	<u>16.1</u> 49.6	<u>3.9</u> 9.5

Notes:

- Emissions include fugitive dust from land clearing and vehicle movements.
 - Emissions include ~~Phase~~ Ivanpah 1's 21 lbs/day of fugitive dust and combustion PM10 from facility maintenance activities.
 - Emissions include combustion PM2.5 from facility maintenance activities.
 - Emissions include ~~Phase~~ Ivanpah I and II's 41 lbs/day of fugitive dust and combustion PM10 from facility maintenance activities.
 - Including emissions from all three ~~phases~~ units and boilers. The boilers operate no more than four hours per day and no more than 5 percent of solar input, or about one hour per day per year.
- Sources: AFC (BSE2007a), and January 14, 2008 Data Response.

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35. Page 5.1-15, Air Quality Table 7: The net reduction resulting from staff proposals are shown in the following table:

MITIGATION REDUCTIONS, TPY

	NOx	VOC	SOx	CO	PM10	PM2.5
Proposed emissions	10.5	2.6	0.7	30.4	16.1	3.9
Staff proposed emissions	6.7	0.3	0.7	5.6	6.2	2.2
Reduction	3.8	2.3	0.0	24.8	9.9	1.6

As indicated above, implementation of the staff recommendations would reduce facility emissions of ozone precursors from the proposed 10.5 TPY to 6.7 TPY (36%) and would reduce facility PM10 emissions from 16.1 TPY to 6.2 TPY (61%). Similar reductions would be achieved for the other pollutants. Virtually all of these reductions are achieved by using a gasoline-powered pickup truck instead of a diesel-fired tractor to pull the mirror-washing trailer.

The use of golf carts instead of pickup trucks results in a trivial emission reduction of approximately 0.2 TPY of CO.

36. Page 5.1-15, Applicant Proposed Operational Mitigation is Without Merit: The staff's dismissal of the discussion of operational mitigation as "without merit" is inappropriate, especially considering that staff's analysis of the project's greenhouse gas impacts is essentially the same discussion. It is true that the uncertainties associated with predicting which existing and future power sources will be displaced by power from Ivanpah SEGS make quantification or enforcement of regional benefits impossible. The purpose of the analysis, however, was to demonstrate that the magnitude of the emissions from fossil-fuel-derived power is much greater than the magnitude of emissions from this solar plant. It is so much greater that, even if one assumes that only a small fraction of the generation is displaced from the Mojave Desert air basin and the upwind areas that impact it, a net benefit to the basin is assured.

Staff has stated that it cannot agree with that conclusion, principally because the benefits cannot be quantified. We respectfully disagree, and contend that a qualitative analysis is sufficient to demonstrate, with a high degree of certainty, that the net effect of this project on regional air quality is positive.

When Ivanpah SEGS begins producing power, it will displace the power production that would have otherwise been dispatched. Because Ivanpah SEGS, as a clean source, will be dispatched in preference to almost any conventional source, as a matter of public policy, the amount of emissions of all pollutants to the environment will be reduced. It is true that some of the sources that will be displaced may be in other regions or even other states. The principal point of the comparison with the

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cleanest-burning conventional sources, however, is that Ivanpah SEGS is so much cleaner than a clean new conventional plant that only a fraction of the displaced energy production must be local in order to completely mitigate local impacts, which are described by staff in the PSA as “minimal.” The intended implication was that the environmental benefit of displaced production from the still dirtier “peakers,” that tend to operate on the hottest, and therefore highest ozone, days, is greater still.

It is also true that a new conventional power plant would, under CEC and District regulation, be required to provide full offsets. The production displaced by Ivanpah SEGS, however, will most likely be from existing, relatively inefficient, power plants, rather than new well-controlled ones. The existence of Ivanpah SEGS will reduce utilization, or delay increased utilization, of these existing units.

CEC staff have access to the historical dispatch patterns in the region served by Ivanpah SEGS. Rather than dismissing the qualitative discussion in the AFC out-of-hand as “without merit,” it would be more productive to conduct an order-of-magnitude analysis to determine the validity of the argument. It is not necessary to precisely quantify the amount of local environmental benefit resulting from displacement to reach the conclusion that the facility will provide a local benefit; a quick review of summertime dispatch records should clearly demonstrate that enough local conventional generation would have been avoided if Ivanpah SEGS had been operating to more than mitigate Ivanpah SEGS’ minimal emissions.

Such an analysis would also provide valuable insight on CO₂ reduction and the benefits of co-controls resulting from the State’s efforts to encourage renewable energy.

37. Page 5.1-21 & 22, AQ-SC6: Staff recommended the use of light trucks (Ford F-150 or equivalent) in lieu of a diesel tractor to tow the trailer carrying the water and other equipment needed to wash the mirrors. The Applicant has considered this suggestion and cannot accept the staff’s mitigation proposal.

Ford trucks have the following towing capacities:

Ford Model, 2008	Towing Capacity¹ (in pounds)
F-150	6,500
F-250 (Diesel)	8,700
F-350 (Diesel)	10,700
F-450 (Diesel)	16,000

¹ <http://auto.howstuffworks.com/auto-parts/towing/towing-capacity/vehicle%20/towing-capacity-chart9.htm>

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The mirror-cleaning trailer will contain 2,000 gallons of water, in addition to the weight of the trailer itself. Considering 2,000 gallons of water weighs 16,660 pounds; taking into account the weight of the water tank, trailer, pump, and boom, the water washing trailer will weigh over 17,000 lbs. None of the pickups on the list have sufficient towing capacity to reliably tow the water trailer.

The use of small electric vehicles instead of light gasoline-fueled trucks to support the other maintenance activities is practical, except for the occasional need of a heavier vehicle (e.g., to carry the parts needed to replace a faulty heliostat). Because the benefit resulting from use of golf carts instead of pick-up trucks is trivial, the golf carts should not be included as a certification requirement.

38. Page 5.1-23, AQB-5: The District has revised the initial testing requirement in the FDOC. This condition should be revised to match the District's condition.
39. Page 5.1-24, AQB-9: The District has revised the initial testing requirement in the FDOC. This condition should be revised to match the District condition.
40. Page 5.1-42, Comments on Appendix Air-2, Facility daily emissions: The following are corrections to this subsection.
- The NO_x emissions from one hour of boiler operation are 10 lb/day, not 40.
 - VOC emissions from one hour of boiler operation are 0.5 lb/day, not 2.2.
 - SO_x emissions from one hour of boiler operation are 2.6 lb/day, not 10.3.
 - CO emissions from one hour of boiler operation are 17 lb/day, not 67.7.
 - PM₁₀ emissions from one hour of boiler operation are 7.4 lb/day, not 27.4.
 - VOC emissions from one hour of boiler operation are 7.4 lb/day, not 27.4.

In past permitting actions, the CEC has assumed that the portion of PM_{2.5} in fugitive PM₁₀ emissions is approximately 15 percent, not 30 percent (see, for example, the staff analysis and Commission decision for the Tesla Power Plant, Docket 01-AFC-21).

The corrected calculations for expected daily emissions (which are not the same as the average daily emissions), following the staff's analysis, are presented below.

$$\text{NO}_x = 10 \text{ lbs/day} + [2(1778 \text{ lb/yr}) + 3557 \text{ lb/yr} + 3(14 \text{ lbs/yr})] / 360 = 30 \text{ lb/day}$$

$$\text{VOC} = 0.5 + [2(1198) + 2395 + 3(14)] / 360 = 13.9 \text{ lb/day}$$

$$\text{SO}_x = 2.6 + \text{neg.} = 2.6 \text{ lb/day}$$

$$\text{CO} = 17 + [2(12,730) + 25,460 + 3(145)] / 360 = 160 \text{ lb/day}$$

$$\text{PM}_{10} = 7.4 + [2(69) + 137 + 3(1)] / 360 + [2(6,810) + 13,260 + 3(620)] / 360 = 89 \text{ lb/day}$$

$$\text{PM}_{2.5} = 7.4 + [2(69) + 137 + 3(1)] / 360 + 0.15 [2(6,810) + 13,260 + 3(620)] / 360 = 20.3 \text{ lb/day}$$

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41. Page 5.1-42 & 43, Facility annual emissions:

The boilers are limited to 4 hours (maximum) operation per day. Although the expected usage is about one hour per day, the maximum annual emissions should be based on the restriction on annual usage (i.e., 5 percent of the annual solar input). This corresponds to 120,000 MMBTU each for the smaller Ivanpah 1 and 2 boilers, or 520 hours per year.

Annual emissions are therefore equal to the following:

- 520 hours/year times the maximum hourly boiler emissions
- 50 hours/year times the hourly emergency engine emissions
- 30,000 miles/year times truck emissions per mile
- 120,000 miles/year times tractor emissions per mile

These calculations are presented in the following table:

PROJECT EMISSIONS (PROPOSED)		Emission factors					
		NOx	VOC	SOx	CO	PM10	PM2.5
Boilers	520 hrs/year	10	0.5	2.6	16.9	5.8	5.8
Emergency	200 hrs/year	41.75	0.83	0.04	3.39	0.3	0.3
Fire pump	150 hrs/year	2.33	0.26	0.002	0.32	0.05	0.05
Tractors	120,000 miles/yr	0.05928	0.03992	0.00032	0.424336	0.227	0.036338
Trucks	30,000 miles/yr	0.00136	0.0014	0.00001	0.01447	0.062	0.00938
		Emissions (TPY)					
Boilers		2.6	0.1	0.7	4.4	1.5	1.5
Emergency		4.2	0.1	0.0	0.3	0.0	0.0
Fire pump		0.2	0.0	0.0	0.0	0.0	0.0
Tractors		3.6	2.4	0.0	25.5	13.6	2.2
Trucks		0.0	0.0	0.0	0.2	0.9	0.1
Total		10.5	2.6	0.7	30.4	16.1	3.9

42. Page 5.1-43, Facility mitigated emissions: The following are comments on the Staff mitigation suggestions:

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- Gasoline powered, or natural gas powered, trucks (equivalent to a Ford F150), pulling mirror washing trailers (emission factors assumed to be the same as for the crew trucks)
- Electrical powered vehicles (golf carts) for maintenance crew instead of crew trucks (dust emission factors assumed to be the same as for crew trucks)
- Tier III engines for fire pump engines (proposed engines exceed the Tier III standards – already part of the proposal, no additional mitigation)
- Tier II standards for emergency engines (reducing NOx emission factor from 5.05 gm/hp-hr to 4.7 gm/hp-hr)

PROJECT EMISSIONS (STAFF MITIGATION)

		Mitigated emission factors					
		NOx	VOC	SOx	CO	PM10	PM2.5
Boilers	520 hrs/year	10	0.5	2.6	16.9	5.8	5.8
Emergency	200 hrs/year	38.8	0.83	0.04	3.39	0.3	0.3
Fire pump	150 hrs/year	2.33	0.26	0.002	0.32	0.05	0.05
Trucks	120,000 miles/yr	0.00136	0.0014	0.00001	0.01447	0.062	0.00938
Golf carts	30,000 miles/yr	0	0	0	0	0.062	0.0093
		Emissions (TPY)					
Boilers		2.6	0.1	0.7	4.4	1.5	1.5
Emergency		3.9	0.1	0.0	0.3	0.0	0.0
Fire pump		0.2	0.0	0.0	0.0	0.0	0.0
Trucks		0.1	0.1	0.0	0.9	3.7	0.6
Golf carts		0.0	0.0	0.0	0.0	0.9	0.1
Total		6.7	0.3	0.7	5.6	6.2	2.2

BIOLOGICAL RESOURCES

General Comments:

43. The only federally or state listed “endangered” or “threatened” species affected by the ISEGS project is the Desert Tortoise, which is federally threatened and state threatened. There are no other state or federally “threatened or endangered” species at issue.

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44. From a federal perspective, Desert Tortoise mitigation is determined through a calculation. Specifically, for Desert Tortoise mitigation for projects on Federal Land managed by the BLM Needles Field Office, BLM requires a compensation fee of approximately \$500/acre. In this case, 4,065 acres would be affected, so federal mitigation for the Desert Tortoise would be \$500/ acre multiplied by 4,065 acres for a total Desert Tortoise mitigation obligation of \$2,032,500.

It is important to note that BLM considers this compensation fee to be mitigation in full for potential Desert Tortoise impacts per the federal ESA. This would be the sum total mitigation for: (1) projects on federal lands and, significantly, (2) renewable projects located in Nevada, Arizona, and other non-California states.

Thus, all mitigation costs related to Desert Tortoise above this BLM-accepted mitigation fee procedure will be a "California-only" mitigation burden that puts renewable energy projects at an economic disadvantage relative to others, and could potentially threaten their economic viability. This additional burden in turn could potentially affect California's ability to meet its RPS and greenhouse gas (GHG) goals.

45. State law, the California Endangered Species Act (CESA), requires "full mitigation" for state endangered and threatened species. Applicant remains concerned that the BLM's view of Desert Tortoise mitigation as described above, and the State's "full mitigation" obligations under CESA do not align. The additional CESA, California-only burdens could be significant.
46. In discussing "compensatory mitigation", the PSA focuses on potential impacts to four California "rare" plants. CESA requires "full mitigation" for California "endangered and threatened" species. CESA does not require "full mitigation" for California "rare" species or California "species of special concern."

Threatened species under CESA include any animal determined by the commission to be "rare" on or before January 1, 1985. (4 C.C.R. § 783.1(b).) Besides these formerly rare animal species, CESA does not regulate rare species. Thus, no incidental take permit and no mitigation measures are required under CESA for impacts to rare plant or animal species. *Therefore, CESA's "fully mitigate" standard does not apply to mitigate impacts to rare species.*

"No state or federally listed plant species occur within the ISEGS project area...." (PSA, p. 5.2-18.) The Applicant remains concerned that the PSA has inadvertently - and incorrectly -- applied CESA's "fully mitigate" obligation to both: (1) the California threatened Desert Tortoise, which is proper and (2) California "rare" species or species of special concern, which is improper. This important distinction must be considered in the California-only "compensatory mitigation" package to be developed.

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47. Unlike CESA, the California Environmental Quality Act (CEQA) addresses impacts to species it defines as “rare.” Also unlike CESA, however, CEQA does not require “full mitigation.” Instead, it requires feasible alternatives or mitigation measures to “minimize the significant impacts” or, where no feasible alternatives or mitigation measures exist, a statement of overriding consideration.

The Applicant remains concerned that the PSA failed to apply the “minimize where feasible” standard under CEQA to significant impacts to rare species and species of special concern. By inadvertently and incorrectly applying CESA’s “full mitigation” standard for impacts to rare species, the California-only “compensatory mitigation” package may be unnecessarily burdensome.

48. Section 5.2-2, Summary of Conclusions. As have been done in other sections of the PSA, it would be helpful to add more detail on how the project will be analyzed under NEPA and the ESA, and the general steps and requirements of the NEPA environmental review process. Also, it would be helpful to describe the impact significance standards used by CEC, and if the standards or the conclusions are expected to differ as a result of independent BLM analyses. Similarly, please advise whether BLM will accept the CEC-standard mitigation measures from the PSA, or if the BLM will require different or additional measures.
49. The PSA assumes a worst-case impact scenario to rare plants. In some cases, impacts to rare plants and corresponding mitigation requirements may be reduced. For example, a wider area was surveyed within the utility corridor than would be required for construction, and it may be possible to avoid some of the rare plant resources such as Rusby’s desert mallow, located within this corridor by making small changes to the pipeline alignment. Specific rare plant avoidance will be determined once final engineering plans are available. Please see specific comments to Biological Resources, below.

Many parts of the Mojave Desert are unexplored and botanical resources may be poorly documented. The PSA relies on two readily available sources of rare plant information, the CNDDDB and the Consortium of California Herbaria. The CNDDDB is a positive reporting database, and only formally documented localities that are voluntarily submitted are included in the CNDDDB. Information on rare plant occurrences from other sources would help to provide a more complete accounting of known localities. Please see specific comments to Biological Resources, below.

A point of clarification: in the AFC and subsequent documents staff referred to the mapped lines representing the ephemeral washes collectively as ephemeral washes. It was not our intent to indicate that each individual line represents a separate wash but rather a particular segment of a channel that was classified based on channel width. Given the highly braided and intermixed nature of these channels it is hard to quantify the actual number of ephemeral washes because they are so intermixed and entwined. Additionally, a single channel can be highly variable in width resulting in multiple lines for a single feature. As such a definitive quantification of the number

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of actual ephemeral drainages is difficult, and the total acreage or linear distances are likely to provide a more accurate quantification of these features.

Specific Comments:

50. Page 5.2-1, Summary of Conclusions, last para., 2nd sent.: The Biological Assessment prepared by CH2M HILL should be referred to as a "Draft Biological Assessment."
51. Page 5.2-5, Regional Setting, 8th line: The distance from the project site to Primm, should be 4.5 miles (not 5 miles). It is correctly referenced as 4.5 miles in line 11 of that paragraph.
52. Page 5.2-6, Project Area and Description, 2nd para., sentences 5 & 6: The detention ponds would require approximately 70 acres (not 66 acres); the additional area needed for construction activities would be about 307 acres (not 234 acres).
53. Page 5.2-6, Solar Power Plant Process and Equipment, 1st para.: Please clarify text about heliostats and mirrors in this paragraph to be consistent with prior comments about page 1-2 of the Executive Summary.
54. Page 5.2-6, Solar Power Plant Process and Equipment, para. 2, sent. 2: A clearer way to reword this sentence would be: "The solar power tower would receive solar radiation from the heliostats (mirrors) then convert the heat it into steam by heating water in the solar boilers."
55. Pages 5.2-10 and 11, Vegetation and Wildlife, Plant Communities: The sensitive creosote bush - white bursage - barrel cactus plant community type does not occur onsite. Surveys conducted in 2007 in support of the AFC previously identified that this sensitive natural community type was found in the project area. However, subsequent to the preparation of the AFC, discussions were held with CDFG plant ecologist Todd Keeler-Wolf regarding the number of barrel cactus per hectare needed to qualify as this sensitive plant community type, as none had previously been specified in the readily available scientific literature. Based on information provided by Todd Keeler-Wolf, the density of barrel cactus in the project area does not meet the definition of the creosote bush-white bursage - barrel cactus sensitive plant community type (see Data Response, Set 1C). Therefore, this sensitive plant community is not present onsite.
56. Page 5.2-14, Ephemeral Drainages and Waters of the State, 1st para., 3rd sent.: To provide additional clarification, it would be helpful to state that although numerous ephemeral washes occur within the project site, the site does not support features commonly called "streams" and there is no perennial water present on this arid site.
57. Page 5.2-14, Ephemeral Drainages and Waters of the State: Regarding text that reads "A total of 1,973 washes were mapped in the project area." To clarify, 1,973 washes are not present onsite. A total of 1,973 *wash segments* are present in the project area. The wetland delineation followed a transect-based approach (Revised Wetland

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Delineation Report, Attachment DR19-1B, filed September 2008). Data points were collected that documented where transects intersected ephemeral washes perpendicular to transects, and width data was obtained at each intersected location. Each data point represents a segment of a wash that corresponds to an assigned width category. Drainages were mapped using a combination of field data and aerial photography and the total length of the drainage was calculated. Several wash segments, of varying widths occur along each wash, and collectively all of the wash segments total 198.72 acres (see Table 3.1-2 and Figures 3-1 through 3-3 in Attachment DR19-1B. These include washes with and without ordinary high water marks (OHWM).

58. Page 5.2-14, Ephemeral Drainages and Waters of the State, 2nd para., 4th sent. from the end: Regarding text that reads, “. . . becoming broad surface flow only.” To clarify, the drainages only contain water during storm events. Additionally, water in the drainages would be expected to rapidly percolate into the coarse alluvium of the bajada surface rather than broadening into surface sheet flows.
59. Page 5.2-14, Ephemeral Drainages and Waters of the State, 2nd para., last sent.. Since this text was written, the Applicant has decided to presume that all washes are “waters of the U.S.”
60. Page 5.2-15, Special-Status Species, last sent. on page and 1st sentence on page 5.2-16: This text is a little confusing. It reads “. . .many are unlikely to occur. . .”, and then “quite a few” were detected or “otherwise known to occur.” It would be helpful to clarify what the basis is for assuming they are unlikely to occur and what “otherwise known to occur” means.
61. Page 5.2-16, Biological Resources Table 2: It would be helpful to clarify if this table is intended to show results of the site rare plant surveys or to show other rare plant species documented or suspected of occurring offsite. For example, *Agave utahensis*, bolded in Biological Resources Table 2, was only found in the one-mile buffer, where impacts will not occur.
62. Page 5.2-17, Biological Resources Table 2, Wildlife Status: Several species are listed as Federal Species of Concern (FSC- not identified in the notes). This is not a legal definition and it is our understanding that the FWS no longer maintains such lists (at least in the Sacramento Field Office).
63. Page 5.2-18, Special Status Plant Species: The text reads “ten plant species listed by the California Native Plant Society (CNPS) as CNPS List 1B or CNPS List 2 occur on the site.” Table 5-2 of Attachment BR3-1A, Rare Plant Report, filed in September 2008, and the CNDDDB (2008) special plants list, ranks three species found onsite as CNPS List 4 species not CNPS List 1B or 2 species: Utah vine milkweed (*Cynanchum utahense*), Utah mortonia (*Mortonia utahensis*), and desert portulaca (*Portulaca halimoides*). It is possible that the rank of these three species is being re-evaluated by CDFG and CNPS, and it would be helpful to clarify if this is the case.

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64. Page 5.2-19, Biological Resources Table 3. Please add the CNPS List Ranks to this table since the previous text refers to these ranks and we assume that impact significance determinations take rank into account.

Page 5.2-19, Biological Resources Table 3: Biological Resources Table 3 enumerates the impact to rare plants found onsite in comparison to the number of reported occurrences. The CNDDDB is a voluntary reporting database and documentation of other rare plant occurrences was limited to consultation of the California herbaria. We respectfully disagree with this approach for several reasons. We believe that it is likely that the number of rare plant occurrences, as presented in Table 3, is under-reported. Also, we believe that the severity of rare plant impacts have been overstated in many cases.

For example, *Mortonia utahensis* is common on limestone substrates of the northern and eastern Mojave Desert. In the case of *Mortonia utahensis*, a single plant was identified near the northwestern edge of the utility corridor. The removal of a single *Mortonia utahensis* is unlikely to correspond to a loss of 2 percent of the known California occurrences. Similarly, a total of 15 Rusby's desert mallow plants potentially could be lost as a result of the project. We disagree with the finding that the loss of 15 plants corresponds to 11 percent of the known occurrences.

Although the number of individual plants in a population will vary considerably in different years and direct comparisons from one population to another are not valid, it is possible to qualitatively categorize populations in terms of size (even in such simple terms as very large, large, medium, and small). We recommend considering variables such as population size, habitat quality, location within the geographic range of the species, and how valuable the locality is to the long-term sustainability of the species. For example, in the case of Rusby's desert mallow, a total of 15 plants were identified in the project site that potentially could be lost. We respectfully disagree that impacts to 15 plants correspond to an 11 percent loss of all known Rusby's desert mallow in the world. We think these impacts are overstated. Additionally, we request clarification on the significance threshold used to determine impacts to rare plant species. We would appreciate the opportunity to discuss rare plant findings and impact determinations.

65. Page 5.2-19, Biological Resources Table 3: Two plant species, Clark Mountain Agave and Viviparous foxtail cactus are included in Table 2, but were not included in Table 3. It might also be worth noting that Clark Mountain Agave was not found on the site. It was only within the one-mile buffer survey area.
66. Page 5.2-19, Biological Resources Table 3, and Page 5.2-33, Biological Resources Table 4: The geographic boundary of the Ivanpah Valley extends beyond California into Nevada. We request that Nevada occurrences of rare plant species be considered in the impact analysis presented in Tables 3 and 4.

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67. Page 5.2-31, Methods and Thresholds, 1st para.: The PSA states that the “best scientific and factual data” the staff could review were used as the basis for determination of impacts. As noted previously the Consortium of California Herbaria and the CNDDDB are important and useful tools that should be used as part of the analysis, but these data sources contain limited, often only historic records, that provide only incomplete information on population size and exact locations (if any). Many of these occurrences were mapped in the CNDDDB based on a “best guess.” It is unclear how other sources of information such as experts, agency staff and non-profits was used in the assessment of impacts to special status plant species. Additional sources of rare plant information from agencies such as the National Park Service, BLM, non-profit organizations, and local botanical experts would be helpful to obtain a more complete evaluation.
68. Page 5.2-19, Biological Resources Table 3, and page 5.2-20: The PSA text states that one plant species, cave dwelling evening primrose, was observed within the project site during the field surveys. To clarify this finding, cave evening primrose was not identified within the site, but it was observed offsite during reference site visits about 200 feet north of the existing transmission line corridor.
69. Pages 5.2-33 -34, Biological Resources Table 4: It would be helpful to include the CNPS ranks. Additionally, the Impact/Mitigation Summary column shows that mitigation is required for impacts to plants that are not considered significant. Per CEQA, mitigation for impacts that are less than significant is not required. Therefore, please clearly state which species do not require mitigation.
70. Page 5.2-37, Impacts to Special-Status Plants, 1st para.: The PSA states impacts to 10 CNPS list 1B and list 2 species – this is incorrect. According to Table 2, only one CNPS 1B plant was found, six CNPS 2 species were found, and four CNPS list 4 species were found.
71. Page 5.2-37, Impacts to Special-Status Plants, 2nd para.: Wind-blown dust is not expected to be a substantial concern because aeolian processes are dominant in this arid region and plant species are consequently well-adapted to their effects. For example, in the Ivanpah Valley, the more than 5-square-mile Ivanpah Dry Lake provides an ample source of wind-blown sand and dust (fine particles).
72. Page 5.2-38, Impacts/Mitigation to Wildlife – Overview, 1st para., 2nd sent.: There is a word missing.
73. Page 5.2-45, Spread of Noxious Weeds, para. 1: It should be clarified that although the noxious weed salt cedar is of high biological concern in the vicinity of the project, it does not occur onsite. It was found across I-15, within the one mile buffer. Salt cedar is a phreatophytic species; no areas with suitable habitat for salt cedar exist onsite. Because it was not observed onsite, and no suitable habitat for it exists, the Weed Management Plan did not consider salt cedar a substantial concern.

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74. Page 5.2-49, Biological Resources Table 5 and Table 6, page 5.2-50: The geographic scope of all cumulative impact analysis scenarios in the PSA extend beyond California into Nevada (PSA Page 1-11, Land Use; Page 4-1, Cumulative Scenario). Applicant is unaware of any legal authority for limiting the CEQA analysis to plants within the California state borders only, as suggested by Staff at the January 9, 2009 workshop. Consistent with the cumulative impact methodology in other PSA sections, the distribution and number of occurrences of rare plants that occur within Nevada should also be considered in the cumulative impact analysis. We also request that Nevada occurrences of rare plant species be included in the impact analysis in Biological Resources Table 3, page 5.2-19, and Biological Resources Table 4, page 5.2-33.
75. Page 5.2-49, Biological Resources Table 5 and Table 6: As discussed in our comments on the Cumulative Scenario, any determinations regarding potentially significant cumulative impacts should focus on the project's effects combined with other reasonably foreseeable probable projects the effects of which could possibly "combine" with those of the Ivanpah SEGS projects. (See comments under the "Cumulative Scenario" above).
76. Page 5.2-54, Conclusions, 1st para.: To clarify, cave dwelling evening primrose was not found onsite, but it does occur about 200 feet north of the existing transmission line, offsite.
77. Page 5.2-57, BIO-2, Item e: This type of activity would likely be performed by the biological monitor rather than the designated biologist.
78. Page 5.2-58, BIO-4, 2nd para.: The first sentence does not make sense. It is unclear what is trying to be conveyed here.
79. Page 5.2-59 & 60, BIO-6: Please add that the WEAP training may be combined with other training programs prepared for cultural and paleontological resources.
80. Page 5.2-68, BIO-11, Item 6: The heliostats are relatively short and are not towers. If this condition was intended to refer to the power tower lighting, it should be clarified that the structures will be marked and/or lighted in accordance with FAA Advisory circular 70/7460-1 K Change 2, Obstruction Marking and Lighting, a medial system - Chapters 4,8 (M-Dual), & 12.
81. Page 5.2-68, BIO -11, Item 8: The Gila monster is a CDFG fully protected species and the venom is potentially dangerous to humans. It is unwise to require anyone without specific expertise to attempt to capture this animal. In addition, the capture and relocation of this species would be a violation of the Fish and Game Code. Any capture and relocation of this species should only be done with prior authorization from CDFG.
82. Page 5.2-69, BIO-11, Item 10: This would likely be the biological monitor rather than the designated biologist.

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83. Page 5.2-70, Weed Management Plan: A Weed Control Plan was submitted to the CEC and BLM in August 2008 by CH2M HILL. Please clarify if CEC requires another weed control plan, as text in this section implies that another submittal is required. Text provided on Page 5.2-45, Spread of Noxious Weeds, para. 2, states that a detailed Weed Management Plan has been submitted, that CEC staff concur with recommendations presented in the plan, and have incorporated weed control measures into Mitigation Measure Bio-13.
84. Page 5.2-71, BIO-13, Verification: What translocation would be included in the weed management plan?
85. Page 5.2-71, BIO-14: The last sentence states the plan must address the following, but there is no following information provided.
86. Page 5.2-73, BIO-16, Verification: USFWS has no jurisdiction over burrowing owls, this is a state species of concern only.
87. Page 5.2-74, BIO-17: The RWQCB and USACE should also be included in the discussion of compensatory mitigation.
88. Page 5.2-74, BIO-18: In addition to conditions included in the 1602 permit, conditions from the federal 404 and state 401 permits should also be included.

CULTURAL RESOURCES

89. Page 5.3-33, Cultural Resources Inventory Fieldwork: As noted at the PSA workshop, since this text was written the helicopter survey report has been submitted.
90. Page 5.3-51 to 5.3-54, Cumulative Impact: Neither NEPA nor CEQA allow for two cumulative impacts analyses: (1) a "Local Projects" cumulative analysis; and (2) a "Regional Projects" cumulative analysis. As discussed in the comments under "Cumulative Scenarios" above, the PSA should focus on the "combined" effects of the Ivanpah SEGS projects with other reasonably foreseeable probable projects. This is precisely what the "Regional Projects" scenario does, finding no significant cumulative impacts. The second analysis on "Regional Projects" should be deleted. This Regional Projects analysis fails to consider potential "combined" effects and as such is not consistent with the legal dictates of CEQA and NEPA. This discussion and the conclusions should be deleted.
91. Page 5.3-61, CUL-6: Please add that the WEAP training may be combined with other training programs prepared for biological and paleontological resources.
92. Page 5.3-64, CUL-8 and page 5.3-65, CUL-9: The Applicant has no authority over SCE or its project. We suggest that BLM should address this issue with SCE's ROW grant.

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HAZARDOUS MATERIALS

93. Page 5.4-13, HAZ-2: The condition needs a time period when the Applicant can proceed if no comments are received from the county.

LAND USE

94. Page 5.5-4, Land Use Table 2 and throughout the section: BLM told us that a portion of the site was Multiple Use Class M (moderate use) as well as Class L.
95. Page 5.5-5, Federal/NEPA and 5.5-6, U.S. Bureau of Land Management: A new solar power plant is authorizable within Multiple Use Class L limited areas, but the Plan Amendment will be carried out in order to specifically identify this solar plant.
96. Page 5.5-10, BLM Clark Mountain Allotment Grazing Lease: In a written communication to the BLM, the current Lessee has waived notice.
97. Page 5.5-14 to 5.5-16, Cumulative Impact. Neither NEPA nor CEQA allow for two cumulative impacts analyses: (1) a "Local Projects" cumulative analysis and (2) a "Regional Projects" cumulative analysis. As discussed in the comments under "Cumulative Scenarios" above, the PSA should focus on the "combined" effects of the Ivanpah SEGS projects with other reasonably foreseeable probable projects. The PSA's first analysis on "Local Projects" first finds that the project would "not divide an existing community," among other affirmative findings. (page 5.5-14). The PSA then further finds no threat of significant cumulative impacts: "However, BLM is responsible for ensuring that a newly proposed facility does not adversely affect the integrity or ability to operate existing facilities and other authorized lands uses on public lands. As such, potential cumulative impacts would be lessened using standard construction methods that BLM will include as part of its right-of-way grant." (page 5.5-15.) Then, without explanation, the PSA finds potentially significant impacts with existing and *future*, unspecified land uses: "Development of the ISEGS project would preclude and in some cases, unduly restrict existing and future uses such as livestock grazing, open space, mineral exploration, motorized vehicle access, and active and passive recreation on 4,065 acres of public land designated MUC L. Land use impacts of the ISEGS project, when combined with impacts of the OptiSolar photovoltaic project, the Southern Nevada Supplemental Airport and two proposed wind energy developments would result in significant unavoidable land use impacts within the Ivanpah Valley." To begin, the PSA does not explain how the Ivanpah SEGS project would impacts unspecified "future" users. Unless those "future" users are reasonably foreseeable probable projects identified with specified and unless the combined effects these future projects and the Ivanpah SEGS project are specifically identified, the conclusion of a significant cumulative effect cannot stand. Further, while the PSA identifies certain future projects, it fails to describe how the land use effects of those future projects would "combine" with the land use effects of the Ivanpah SEGS project. The legal conclusion is not supported by the analysis and as such should be deleted. Similarly,

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the second analysis on “Regional Projects” should be deleted. This Regional Projects analysis fails to consider potential “combined” effects and as such is not consistent with the legal dictates of CEQA and NEPA. This discussion and the conclusions should be deleted. (See also, our comments under the “Cumulative Scenario” above.) Finally, Applicant recognizes that Staff takes the position that they cannot yet determine whether there are any direct or indirect impacts associated with the project related to the CDCA and the NEMO. Applicant appreciates that Staff will draw such conclusions at a later date. Applicant respectfully submits that the Staff will find consistency and no direct or indirect effects.

NOISE AND VIBRATION

98. Page 5.6-13, NOISE-4: We would like to recommend that the pure tone component be reserved for residential uses and not applied at the golf course.
99. Page 5.6-14, NOISE-6: The Staff notes on page 5.6-6, “Compliance with Laws, Ordinances, Regulations, and Standards,” that the San Bernardino County Development Code does not apply to construction of this project, but that applicant agreed to comply with this restriction, which is the basis for NOISE-6. The applicant stated in AFC Section 5.7.7.3, that it would comply with San Bernardino County hourly restrictions for “noisy construction work (*that causes offsite annoyance as evidenced by the filing of a legitimate noise complaint*).” [Emphasis added.] Much of the construction work will be at locations that are sufficient distant from the Golf Club and the Primm community, that only the noisiest activities *may* need to be restricted. As Staff notes on page 5.6.-6 “CEQA Impacts – Power Plant Site,” the anticipated construction noise levels in Primm or at the golf club are quite low and complaints are unlikely even if heavy equipment were to operate during the nighttime hours. Hence, NOISE-6 needs to be revised to conform to what was proposed in the AFC.
100. Page 5.6-15, NOISE-7: Staff correctly notes that high pressure steam blows can be a significant source of noise, particularly in a more urban environment. In addition to silencing, reductions can be achieved by orienting the steam blow exhaust away from noise sensitive areas such as Primm and the golf club. This, in addition to atmospheric absorption which will be significant over these vast distances, will reduce the level of silencing necessary to achieve reasonable steam blow noise levels. Given the considerable distances involved in this project, we would like to recommend that NOISE-7 be amended to provide the project owner the option of taking these factors into account. This can be achieved by adding the following text to the end of NOISE-7: “In lieu of specifying the level of silencing above, the project owner may alternatively submit an analysis to the CPM that documents that during either high or low pressure steam blows, steam blow noise levels would not exceed 60 dBA at the golf course or 55 dBA (daytime) or 45 dBA (nighttime) in Primm.

PUBLIC HEALTH

101. No comments.

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SOCIOECONOMIC RESOURCES

General Comment:

102. The socioeconomic section makes no mention that the project is to be constructed over three phases. However, for the most part, it reports numbers for the total of all three units accurately.

Specific Comments:

103. Page 5.8-5, Below-Poverty-Level Population: It states that “The below-poverty-level population within a six-mile radius of the proposed ISEGS Project consists of no people or 0.0 percent of the total population in the area.”

Income data is not reported for Census Blocks in the US Census. Instead, Census data on income are reported for Census Block Groups (which are combinations of several Census Blocks). In the AFC, we report that the total population for whom poverty status is determined in the Census Block Groups within a 6-mile radius of the project site was 6,270. Of this number, approximately 10 percent are low income. (See Table 5.10B-2 of the AFC). How were staff’s numbers calculated?

104. Page 5.8-6 and 7, Socioeconomic Table 5: We recommend that this table be split into two separate tables since the reason why a lot of the entries for the City of Las Vegas do not correspond correctly to those for San Bernardino County is that the City uses a different set of categories for its expenditures and revenues.

105. Page 5.8-7 and -8, Socioeconomics Table 6: The numbers shown for Kindergarten and Elementary School (1st through 5th Grade) for Clark County School District are incorrect. The correct numbers should be 23,391 (not 23,931 as shown in the PSA) and 121,816 (not 145,207 as shown in PSA). The High School (9th through 12th Grade) enrollment numbers for Baker Valley Unified School District should be 56 (not the 26 shown in the PSA).

106. Page 5.8-11, Sales Tax: PSA states that “The proposed ISEGS’s annual operations and maintenance (O&M) budget is expected to be approximately \$350,500 (in 2007 dollars), . . .” The PSA has the wrong total for O&M over the three units of the ISEGS project. The actual total should be \$340,500 and not \$350,500 as reported. Please see AFC pages 5.10-34 through -35 of the AFC whereby the following annual O&M budgets are reported for each of the 3 units:

Ivanpah 1 = \$210,000
Ivanpah 2 = \$120,000
Ivanpah 3 = \$10,500
Total = \$340,500

The PSA reports the correct amount (\$27,000) for the portion of the annual O&M spent locally within San Bernardino County. However, the amount of annual O&M

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budget estimated to be spent in Clark County, Nevada is \$313,500 and not the \$323,500 reported in the PSA.

SOIL AND WATER RESOURCES

107. Page 5.9-1, 3rd bullet; Page 5.9-1 Item 2: It is estimated that potable water use would average about 1 to 2 gallons per day per construction worker, or about 500 to 1,000 gallons per day during peak summer construction periods. The water would be brought to the site by the construction contractor.
108. Page 5.9-1, 4th and 6th bullet, Page 5.9-2 Item 4, and similar discussions throughout Section 5.9 of the PSA. "Evaluation of the potential water quality impacts due to project pumping;"

Comment: Groundwater quality within the ISEGS region has a very definite three-dimensional character. Along a westerly section through Ivanpah Valley, groundwater salinity at a particular depth tends to be higher near the valley axis and lower near the mountains. Correspondingly, a groundwater body of better quality water, which overlies poorer quality water, occurs with a wedge-shaped vertical profile across valley. The thickness of the groundwater body is zero at the valley axis, but it increases in thickness westward toward the mountains. This description is consistent with the groundwater-monitoring data for the wells associated with the Primm Valley Golf Club. Furthermore, the three-dimensional distribution of groundwater salinity within Ivanpah Valley follows the typical condition within California and Nevada desert valleys, and it results from the pattern of groundwater recharge along the valley margins and the movement of the recharged water toward the valley center.

The Primm Valley Golf Club has wells located both at the golf course and westward along Colosseum Road. The wells at the golf course have a background salinity of about 1,000 mg/L, based on conversations with the long-term water-resources consultant to the golf club. During pumping from those wells, salinity increases to a plateau of about 1,100 mg/L, but it then recovers to the background level after pumping ceases. The wells along Colosseum Road have a much lower background salinity; the salinity increases during pumping; but the increase is much smaller than for the wells at the golf club. The wells at the golf club and along Colosseum Road have somewhat similar depths below the groundwater table, and poorer quality water occurs at the golf club because the body of better quality groundwater is thinner at the golf club. Both at the golf club and along Colosseum Road, pumping induces a temporary increase in salinity because of the poorer quality water that underlies the better quality water. However, the increase is smaller at the wells along Colosseum Road because the depth to the poorer quality water is greater.

Groundwater pumping for either the golf club or the Ivanpah SEGS can induce changes in the rate and direction of groundwater flow. In response to a previous CEC Data Request, the changes in horizontal groundwater flow due to the proposed

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Ivanpah SEGS pumping were described, along with the conclusion that the proposed pumping would have essentially no impact on horizontal groundwater flow at existing wells or at the Molycorp hazardous-waste sites on the Ivanpah Lake playa. However, the impacts of the proposed Ivanpah SEGS pumping on vertical groundwater flow have not been quantified, and the cumulative impacts of the Ivanpah SEGS and golf club pumping on the Molycorp sites have not been quantified. Based on a January 21, 2009 conference call among the Applicant, CEC, and BLM staff, agreement was reached the WTAQ model – which is described in AFC Appendix 5.15C, Section 5 – will be used to quantify the vertical and horizontal changes in groundwater flow resulting from the Ivanpah SEGS and golf club pumping. The model will be use to identify the impacts of the Ivanpah SEGS pumping at the golf club wells. Additionally, it will be used to identify the cumulative impacts of both the Ivanpah SEGS and golf club pumping at the Molycorp sites.

109. Page 5.9-1, 5th bullet and similar discussions throughout Section 5.9 of the PSA: “Evaluation of the increased water use related to the increase in the mirror surface area and need for additional mirror washing;” The applicant has provided this information in Data Response 137, Table DR137-2, Data Response Set 2B. All three phases of development will use less that 100 acre-feet of water per year. This includes the water required to wash the additional heliostats as shown in Table DR137-2.
110. Page 5.9-3, SOIL & WATER Table 1, Clean Water Act: This characterization of the requirements of the Clean Water Act (specifically section 401) are not entirely accurate. 33 USC §1341 (Clean Water Act section 401) does not require that the impacts be quantified or mitigated but instead requires that any applicant for a federal license or permit, which may result in a discharge into navigable waters, shall provide a certification from the state that the discharge will comply with the applicable provisions of the Clean Water Act including the state’s water quality objectives.
111. Page 5.9-3, Soil & Water Table 1, County of San Bernardino General Plan and Development Code, Last sentence of LORS description: This sentence appears to contradict the second sentence which states "Because the proposed site is on federal land, county regulations are not directly applicable to the project." We agree that County of Bernardino may review the grading permits submitted to BLM, but the project should not be subject to a County permit unless that is a condition of the MOU between the BLM and San Bernardino County to address water resource preservation per SBCO Ordinance 3872. Please clarify.
112. Page 5.9-9, Project Water Supply, 1st sent.: the two groundwater wells will be located east of Ivanpah 2. As shown in Figure DR4-8 of Data Response Set 1 D, the two wells will be located northwest of Ivanpah 1 in the “Construction Logistics Area.”

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113. Page 5.9-12, Soil & Water Table 5: These figures account for the larger mirror surface. The 100 AFY water use estimated contains some conservative. The correct source for this table is Data Response, Set 2B (not 1B).
114. Page 5.9-16, Soil Erosion Potential by Water and Wind, 2nd para., last sent.: Delete "or sewer systems." There are no known sewer systems in the project area.
115. Page 5.9-18, Soil & Water Resources Table 7: Footnote 1 is not correct. Acreages and soil loss estimates as stated in the Table were calculated by Applicant as documented in Data Response, Set 1D, filed on May 9, 2008. The only difference noted was that the No Project estimates in CEC Table 7 have been multiplied by the project duration to yield a soil loss estimate in tons. No duration was applied in the Applicant's original estimates so those results were given in tons/year.
116. Page 5.9-19, 2nd para., 1st sent.: There is no expectation of hazardous soil based on conclusion of Phase I ESA as stated on page 5.9-9, Contaminated Soil and Groundwater, paragraph 1 of the PSA. We suggest that the sentence be revised as follows: "Potentially significant water quality impacts could occur during construction, excavation, and grading activities if contaminated or hazardous soil or other materials used during construction were to contact storm water runoff and original estimates so those results were given in tons/year."
117. Page 5.9-21, Regional Groundwater Supply, last sent.: This statement is derived from Soil & Water Table 8 in the PSA. However, both the statement and table contain a conceptual error. The conceptual error is that Table 8 does not contain sufficient information to make a statement about the net balance on the Nevada subarea. In order to make such a statement, Table 8 would need to be modified to include the underflow across the state line. Based on the current drawdowns resulting from the pumping to supply the Primm casinos and golf courses, the direction of the state line underflow most likely is from Nevada into California. For that case, Table 8 would need to be modified to add an outflow for Nevada subarea equal to the state line underflow and to add an inflow for California subarea equal to the state line underflow. However, the underflow rate is unknown. Correspondingly, the separate storage changes cannot be determined for the Nevada and California parts of the basin. The available information allows only the storage change for the overall basin to be determined. Therefore, the respective storage quantities for the Nevada and California subareas should be deleted from Table 8.

The inclusion of the word "deficit" in the referenced statement could be misinterpreted to imply that the basin is in overdraft, and that potential is reinforced by the bolding of storage changes in Table 8. The basin is not in overdraft because the natural recharge from precipitation plus the water-use returns exceed the pumping by 3,300 acre-ft/yr. Nevertheless, when the natural groundwater outflow to Las Vegas Valley is considered, the current rate of storage change is -2,900 acre-ft/yr. However, that storage change represents extractions from the transitional storage reserve for the Ivanpah Valley basin, and it does not represent an overdraft.

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The “transitional storage reserve” is a term used by the U. S. Geological Survey and Nevada State Engineer to describe the groundwater-storage changes associated with the transition of a groundwater basin from a pre-development state to sustainably-developed state. Under the pre-development state, the natural recharge and discharge are in balance, which means for Ivanpah Valley that the precipitation recharge of 6,200 acre-ft/yr is balanced with an underflow to Las Vegas Valley of 6,200 acre-ft/yr. This is an equilibrium state, which is characterized by time-invariant average groundwater levels. With development, pumping causes groundwater levels to decline, such that the declines result in the capture of the natural discharge. If the net pumping is less than the precipitation recharge, which is the case for Ivanpah Valley, the natural discharge decreases until the net pumping plus the remaining natural discharge equals the precipitation recharge. This will be a future equilibrium state, which again will be characterized by time-invariant average groundwater levels. The current net pumping in Ivanpah Valley is 2,800 acre-ft/yr (current pumping less returns), which corresponds to an eventual underflow to Las Vegas Valley of 3,400 acre-ft/yr.

Groundwater levels under the future equilibrium state will be lower than under the pre-development equilibrium state. The transition from one equilibrium state to another corresponds to a change in groundwater storage. That change is a normal and expected occurrence of groundwater development, and it is described by the U. S. Geological Survey and the Nevada State Engineer as the transitional storage reserve. The phenomenon is a necessary aspect of sustainable groundwater development, and it is not an indication of overdraft.

118. Page 5.9-24, Water Quality: See discussion above for “Page 5.9-1, 4th and 6th bullet, Page 5.9-2 Item 4.”
119. Pages 5.9-25-28: Cumulative impacts should be measured against other reasonably foreseeable probable projects having some hydrologic connection to the water supply for the same project (e.g., located within the same water shed or groundwater basin). They should not be consider focusing on “projects are located within the California Desert Conservation Area, as well as on BLM land in Nevada and Arizona” as this is inappropriate for a cumulative impacts analysis. See discussion under “Cumulative Scenario” above. Using the proper scope for cumulative analysis, the PSA should clearly find no significant cumulative impacts associated with the project.
120. Page 5.9-30, San Bernardino County Ordinance 3872, 1st sent. We suggest that the sentence be reworded as follows to be more consistent with the purpose and spirit of the ordinance “To help ~~preserve~~ protect groundwater resources in unregulated portions of the desert while not precluding its use, San Bernardino County, the County enacted Ordinance 3872.”
121. Page 5.9-33, SOIL&WATER-2 requires the DESCOP to meet “County of San Bernardino requirements” and provide the County and RWQCB with the

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opportunity to “review and comment.”. In order to ensure that the Applicant will not be delayed if the County or if the RWQCB declines comments or does not comment in a timely manner, the Verification language should be modified as follows: “Verification: No later than 90 days prior to start of site mobilization, the project owner shall submit a copy of the final DESC to the County of San Bernardino and the Lahontan Regional Water Quality Control Board (RWQCB) for review and comment. No later than 60 days prior to start of site mobilization, the project owner shall submit the DESC with the county’s and RWQCB’s comments (if any comments are received) to the CPM for review and approval. The CPM shall consider timely comments by the county and RWQCB ~~before~~ in the CPM’s approval of the DESC. * * *”

122. Page 5.9-35, SOIL&WATER-4, Pre-Well Installation, 3rd sentence to the end of the paragraph: The Applicant finds it acceptable to submit a well construction packet to the County of San Bernardino, in accordance with the County of San Bernardino Code Title 2, Division 3, Chapter 6, containing all documentation, plans, and fees normally required for the county’s well permit. The Applicant is happy to work with the County to meet the County Code requirements. However, the Applicant suggests adding a provision to the Proposed Conditions of Certification to address the possible, although unlikely condition, that the County fails to provide the required written evaluation. The Applicant suggests the following changes to the Condition and verification:

SOIL&WATER-4: Pre-Well Installation. The project owner may construct and operate up to two onsite groundwater wells that produce water from the Ivanpah Valley Groundwater Basin (IVGB). The project owner shall ensure that such groundwater wells are completed in accordance with all applicable state and local water well construction permits and requirements. Prior to initiation of well construction activities, the project owner shall submit a well construction packet to the County of San Bernardino, in accordance with the County of San Bernardino Code Title 2, Division 3, Chapter 6, containing all documentation, plans, and fees normally required for the county’s well permit, with copies to the CPM. The project shall not construct a well or extract and use groundwater until ~~the County of San Bernardino issues its written evaluation as to whether the proposed well construction and operation activities comply with all applicable county well requirements, and~~ the CPM provides approval to construct the well.

* * *

Verification: The project owner shall do all of the following:

1. No later than thirty (30) days prior to the construction of the onsite groundwater supply wells, the project owner shall submit two (2) copies to the CPM of the water well construction packet submitted to the County of San Bernardino.

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2. No later than fifteen (15) days prior to the construction of the onsite water supply wells, the project owner shall submit two (2) copies of ~~the written concurrence document~~ correspondence, if any, received from the County of San Bernardino indicating that the proposed related to the proposed well construction activities comply with all county well requirements and meet the requirements established by the county's water well permit program.

3. No later than 60 days after installation of each well at the project site, the project owner shall ensure that the well driller submits a Well Completion Report to the DWR with a copy provided to the CPM. The project owner shall submit to the CPM together with the Well Completion Report a copy of well drilling logs, water quality analyses, and any inspection reports.

4. During well construction and for the operational life of the well, the project owner shall:

- Submit copies to the CPM of any proposed well construction or operation changes.
- ~~• Submit copies of any water well monitoring reports required by the County of San Bernardino to the CPM.~~
- No later than fifteen (15) days after completion of the onsite water supply wells, the project owner shall submit documentation to the CPM and the RWQCB that well drilling activities were conducted in compliance with Title 23, California Code of Regulations, Chapter 15, Discharges of Hazardous Wastes to Land, (23 CCR, sections 2510 et seq.) requirements and that any onsite drilling sumps used for project drilling activities were removed in compliance with 23 CCR section 2511(c).

Page 5.9-36, SOIL&WATER-5. 1st sent.: The Applicant anticipates that groundwater use for all construction and operations activities will not exceed approximately 100 acre-feet per year. Although not currently anticipated and due to unforeseen circumstances or emergency situations, in some years, groundwater use may exceed 100 acre-feet per year. To address these potential unforeseen circumstances or emergency situations while not impacting the long-term operations of the ISEGS, the Applicant requests that the above sentence be changed to read as follows:
"SOIL&WATER-5: The ISEGS use of groundwater for all construction and operations activities shall not exceed 100 acre-feet per year on an annual average basis. Annual average water use shall be calculated using a 5-year rolling average of actual water use starting with the first year of operation. * * *"

TRAFFIC AND TRANSPORTATION

123. **General Comment 1:** the even-numbered pages in this section are mis-numbered as "7.10-". That numbering configuration will be used for our comments on this section.

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124. **General Comment 2:** The PSA variously describes the peak period as (1) Friday evenings,¹¹ (2) Friday afternoon,¹² (3) Friday afternoon into the late evening,¹³ or (4) Fridays from approximately 12 p.m. to 10 p.m.¹⁴ However, other published reports indicate that “Traffic entering Las Vegas on I-15 peaks at midnight on Friday and again noon on Saturday.”¹⁵ If this is true, then a dayshift leaving the Project site around 5:00 p.m. on Friday would not contribute adversely to the most congested peak period. It is also important to consider that the peak condition is seasonal, with greatest impact in August and much less in January. In summary, when the LOS condition is accurately described, the LOS condition eastbound on I-15 at 5:00 p.m. on Friday may not be “F” for most, if not all of the year.
125. Page 5.10-16: The PSA correctly suggests that with the implementation of a traffic control plan that the traffic impacts from construction would be less than significant. (See TRANS-1.) For operations, the PSA notes: The operational phase of the proposed project would require 90 employee commutes, or 180 daily trips. Thirty employees are required for the daytime shift. The remaining 60 employees work on the night time shift and would not travel during the peak hours.” (p. 5.10-11.) The PSA then inexplicably finds that those 30 operational employees traveling on Fridays create a significant cumulative impact. The Applicant respectfully suggests that this conclusion is legally incorrect. Under CEQA, there are certainly circumstances where a project’s impact may not be individually significant, but when these impacts are considered in the context of the existing and future cumulative effect, the impact may be cumulatively considerable.¹⁶ As the 3rd District Court of Appeals has instructed, the relevant question when conducting a cumulative impacts analysis is whether any additional amount of effect should be considered significant in the context of the existing cumulative effect.¹⁷ As a general rule, the greater the existing environmental problems are, the lower the threshold should be for treating a project’s impacts to be cumulatively significant.¹⁸ Yet, while a threshold for finding a significant cumulative effect may be low in circumstances of greater existing environmental problems, “This does not mean for example, that any additional effect in a nonattainment area for that effect necessarily creates a significant cumulative effect; the “one [additional] molecule rule” is not the law.”¹⁹

The PSA’s conclusion that any additional vehicle trips during Friday afternoon is necessarily cumulative considerable, is clearly incorrect. If the one additional

11 PSA, 5.10-10

12 PSA, 5.10-11

13 PSA, 5.10-11

14 PSA, 5.10-1

15 http://www.nevadadot.com/news/press_release/releases/release.asp?id=26&user=1&year=1999. This report is dated

16 CEQA Guidelines, Section 15355

17 *Communities for a Better Environment v. California Resources Agency*, 103 Cal.App.4th (3d Dist 2002) 98, 119

18 *Id.*

19 *Id.*

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molecule rule is not the law, then the PSA's corollary "one additional car" rule is also not the appropriate threshold. There is not a presumption of cumulative significant impact merely because the existing traffic conditions are congested at a particular period of time. Instead, the question is whether the addition of up to 30 vehicle trips during Friday afternoon will actually be significant in the context of the 1500 to 2000 vehicles per lane per hour that are traveling I-15 during that period. (Note that the actual number of project related vehicle trips may be less than 30, as a result of the mitigation measures to be implemented in TRANS-1.)

The bottom line is that the PSA cannot merely conclude that any additional vehicles during Friday afternoon is necessarily a cumulatively considerable impact. If the existing congestion is so severe as to be deemed a significant adverse effect, then the Commission may set a low threshold for additional impacts, but that threshold must be reasonable and it cannot be one additional car. After the Commission sets a threshold for the cumulative impact of the project, if plant operations exceed that threshold, the Applicant will then be able to modify the traffic control plan so as to mitigate the potential cumulative impact of the project to a level of insignificance. If, for example, the threshold at which the project impacts become cumulatively conservable is "x" vehicles per hour,²⁰ the traffic control plan can implement measures that would mitigate the impact to a level of insignificance on Friday afternoons.

126. Page 7.10-20, TRANS-1: The first paragraph and first bullet of Condition TRANS-1 should be revised to read:

"TRANS-1 Prior to start of construction of the ISEGS, the project owner shall prepare and implement a traffic control plan for ISEGS construction and operation traffic, containing:- a Traffic Management Plan addressing the movement of vehicles and materials, including arrival and departure schedules, and designated workforce and delivery routes. The plan may include, where necessary to ensure traffic safety or to mitigate traffic impacts during peak traffic conditions, additional measures such as:

- redirection of . . . [continue on as set forth in the PSA]

TRANSMISSION LINE SAFETY AND NUISANCE

127. No comments.

²⁰ The daytime workforce is estimated to be about 30 employees. It is assumed that this daytime workforce would travel from the plant to Las Vegas after work on Friday afternoon, but even in the absence of a traffic plan, it is not likely that all of these workers would travel to work in single-passenger vehicles.

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VISUAL RESOURCES

128. **General Comment:** The Applicant agrees with and accepts all of the proposed conditions of certification set forth in the Visual Resources chapter of the PSA. However, the Applicant does not agree with the PSA's conclusion that the Project with these proposed conditions would cause significant adverse visual impacts or that the visual impacts would be cumulatively considerable.
129. Page 5.12-10, Ivanpah Valley (KOPs 1 through 8), para. 1: The Applicant believes that the Ivanpah Valley floor should be classified as VRM Class IV, for the reasons set forth in the AFC.
130. Page 5.12-10, I-15 Motorists: KOPs 3-5, para. 1: The Applicant agrees that the peak period on this highway is Friday evening. The PSA should note that the project site will not be visible after sunset during this peak period.
131. Page 5.12-11, Clark Mountains: KOPs 9 - 10, 1st para.: The PSA should be revised to clarify that "The objective of Class I areas is to preserve the existing character of the landscape within the Class I area, and the permissible level of visual change within the Class I area is very low and must not attract attention." The project site is in a Class III (or IV) area.
132. Page 5.12-11, KOP 9: Umberci Mine, both paragraphs: From the text it is not clear whether the KOP is a location at the mine, or whether it is at a location near the mine but closer to the project site. It is also not clear to the reader whether this KOP is a point that is actually used by viewers, or whether it is a point at some distance from the trails or roads. It is not clear whether this KOP is an actual overlook or viewpoint and what is meant by "moderate to high use?" How many, if any, users are estimated to have stood at this KOP location during the past year? While the Applicant has provided the CEC Staff with very general estimates of potential users of the Clark Mountains, we do not agree, in the absence of actual user data, that this KOP or the area it represents is an area of "moderate to high use".
133. Page 5.12-11 - 12, KOP 10: Benson Mine, both paragraphs: As with KOP 9, it is not clear to the reader what the relation of KOP 10 is to the mine. Is it closer or farther than the mine to the project site? How far is this KOP from the mine? Is the KOP an actual viewpoint or on a trail or road to the mine? Have any users actually stood at this KOP to view the Ivanpah Valley? What is meant by "heavily used" rock climbing destination? Please discuss the Preserve's plans to restrict or close the rock climbing and how this will affect the number of viewers in the vicinity of this KOP. In the absence of actual data, the Applicant does not agree that this is an area of "high use."
134. Page 5.12-13, Solar Collectors and Mirror Arrays, 3rd para.: The Applicant agrees that the steam turbine generators, water storage tanks, a substation, retention ponds, drainage structures, and administrative/ maintenance facilities may be visible

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outside the fence line of the project, but it is incorrect to characterize these features as "visually prominent" from any KOP.

135. Pages 5.12-14 and 15, Staff Discussion of AFC Analysis, paragraphs 1 and 2: For the reasons set forth in the AFC, the Applicant believes that the Project site should be classified as VRM Class IV.

136. Pages 5.12-15, a. Would the project have a substantial adverse effect on a scenic vista?, 1st and 2nd paragraphs: The Applicant strongly disagrees with the conclusions drawn in the paragraphs cited above. First, we object to the characterization of the appearance of the facility as "industrial," or elsewhere in the PSA, as "highly industrial" or "highly man altered." It is correct to say that the facilities are man-made. However, the term "industrial" ranges from smoke-stack or heavy industrial to light industry. To state that the facility is highly industrial or highly man-altered is to evoke images that may not be appropriate here.

We also question the subjective characterization of views of the Ivanpah lakebed. The PSA describes these views of a barren terrain transected by a highway, transmission lines and the town of Primm. A view of Yosemite Falls is striking. A view of the Ivanpah Valley by a motorist on I-15 is less so.

137. Pages 5.12-17 (para.1) and 19 (para. 1), Staff Comments on Simulations: The Applicant disagrees with the assertion that the simulations do not clearly or accurately depict the mirror arrays. There are several reasons why individual mirrors are not visible in the simulations:

- (1) Ivanpah 1 and 2 each have up to 55,000 mirrors, and Ivanpah 3 has a maximum of 104,000 mirrors. A model that would include that total number of mirrors with all of the size, shape, color, texture, and reflective details that CEC staff would like to see would require a computer program and processing capabilities that is beyond current industry standards. The simulations provide a sense of realism to the extent possible using available computer technology. It is understood and acknowledged that the proposed mirrors would have a different texture than the existing vegetated ground surface.
- (2) The intent of the model and the simulations is to show conceptual level simulations with project features that are accurate in size, shape, and color; placement in the landscape; and scale relative to existing natural and manmade features in the project area. The visual simulations accomplish that intent.
- (3) All of the KOPs are at least 0.75 mile from the project boundary, several are 3+ miles from the project boundary, and the distances to the nearest mirrors and towers from the KOPs are even farther. For example, KOP 1 is located 0.95 mile from the nearest mirror and 1.7 miles to the tower; KOP 2 is located

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1.8 miles to the nearest mirror and 2.5 miles to the tower; and KOPs 3 and 4 are 2.5 and 1.3 miles, respectively, from the nearest mirror. From these distances, a viewer is not expected to be able to see the details of 12-foot-high mirrors. In addition to the distance, atmospheric conditions (i.e., the weather and lighting, and whether it is a dusty, clear, or hazy day) may also affect the amount of detail that would be visible at the arrays of mirrors.

The photos included in the PSA Figure 7 are able to show more detailed mirrors because those photos are taken from a much closer distance than the KOP distances to the project mirrors, and the Figure 7 photos are showing only hundreds (not tens of thousands) of mirrors.

138. Pages 5.12-17 (para.2), Staff Comments on Simulations: The heights of the towers and air-cooled condenser units in the simulations were checked. The towers are 459 feet tall, and the air-cooled condenser units are 85 feet tall in the simulations.

139. Page 5.12-18, 4th para., CEC's KOPs 1 and 2 (Applicant's KOPs 1 and 2): The PSA indicates that "KOPs 1 and 2 are actually, in effect, a single KOP." Although it is true that both photographs were taken within the golf course, these two photos were taken from very different locations within the golf course (holes 1 and 8), as opposed to KOPs 3 and 4, which were taken from the same I-15 off-ramp. We agree with the PSA conclusion that impacts from KOPs 1 and 2 are less than significant with the implementation of the required mitigation.

140. Pages 5.12-18 and 19, CEC's KOP 3 (Applicant's KOP 3), Contrast Rating: As indicated in previous submittals, this view is from approximately 2.5 miles away from the closest project feature. Due to this distance, as shown in the CEC's Figure 9 of the PSA (which is the same as the Applicant's Data Response, Set 1D Figure DR97-1bR), project features make up a very small portion of the photo frame.

We disagree that the project would be highly prominent from this view. As shown in the figure, the view of the mountains is preserved, and the project features, although visible from this view, do not dominate²¹ the view, nor are they prominent²² in this photo.

We disagree that the form, line, color, and texture contrast between the project features and the existing landscape would be strong. Most of the project towers and features (except the closest) fade into the background, i.e., a weak to moderate contrast (and no contrast in vegetation) would result between the form, line, color, and texture of the project when compared to the existing landscape.

The closest tower (left side of photo) is more visible, and a strong contrast would result between the form, line, color, and texture of the project when compared to the

21 American Heritage Dictionary defines "dominate" as "to exert a supreme guiding influence on or over".

22 Dictionary.com defines "prominent" as "standing out so as to be seen easily; conspicuous; particularly noticeable".

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landscape. However, the eye is still drawn to the rock outcrop in the right third of the photo, as well as the vegetation in the immediate foreground.

It is true that the project features (towers and mirror arrays) would alter the character of the desert floor, but I would not characterize that alteration “an industrial visual texture,” which implies factories, plants and warehouses, smoke and stacks, and semi-trucks and trailers entering and exiting the area. The project would change the landscape from one of a largely natural appearing one to a developed nature, but from this view, the degree of contrast is not great.

The view from KOP 3 is not considered a sensitive receptor location, and it has a low sensitivity level, as was indicated in Data Response Set 1D. The I-15/Yates Well Road off-ramp (east side of I-15), where this photo was taken, is not a recreational, tourist, or commercial destination. This off-ramp provides a means to access the desert on the west side of I-15 for recreational purposes (the golf course or the mountains to the west and north of the project site) or for maintenance for the existing transmission lines, or it provides an opportunity for travelers to turn around and change direction on the freeway. It may also provide access for travelers to the Ivanpah Dry Lakebed (located to the east) if the gate is unchained and access is allowed. No rest stop, commercial venues, trails, or other recreation or commercial offerings exist at this exit. One trailer is located at this exit; however, this exit is not considered a prime residential location. On the first site visit to this location, except for the trailer, apparently abandoned buildings, and communication tower, the off-ramp area was undeveloped. On the second visit to this location, an industrial-type facility that appeared to be a concrete batch plant had been constructed. This KOP 3 location was selected for analysis not because it was considered a sensitive viewpoint, but because it is the closest view to the project from I-15. The Applicant was attempting to show a representative view of the project from a traveller’s viewpoint traveling north on I-15, and no other locations along I-15 near the project were safe for exiting the vehicle (the road has narrow shoulders with no pullouts in the area).

Even assuming the BLM’s designation of lands that include the project site as Interim VRM Class III, we continue to believe that the conclusions presented in the BLM Form 8400-4 that was prepared for this KOP are valid, i.e., that nearly all of the degree of contrast criteria are “moderate,” “weak,” or “none.” Only one criterion and only one portion of the project (color – for the closest tower to the KOP viewpoint) would exhibit a “strong” contrast, as indicated in the photo. This one “strong contrast” conclusion is from a low-sensitivity viewpoint that has minimal stationary viewers.

It is understood that BLM has determined that the project area is Interim VRM Class III land. In accordance with the BLM’s Class III objective, this KOP photo demonstrates that, with the project in place, the existing character of the landscape is partially retained. It is acknowledged that the project may attract attention; however,

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in no way does the project dominate the view of the casual observer from KOP 3. To the extent that project features can harmonize with the existing landscape, they are doing so, through the selection of paints for project features and the controlled orientation of the mirrors to avoid projecting glare toward I-15. Therefore, with this moderate level of visual change, as the KOP 3 photo demonstrates, the level of significance of visual impact from the project should be less than significant at this KOP. This conclusion is strengthened by the following facts:

- This viewpoint (1) has minimal viewers there that are stationary (i.e., that have views toward the project that are of lasting duration), and (2) could represent a view similar to what viewers would see while traveling northbound on I-15 (which when traveling at 65 to 70 miles per hour, they would pass by this location in seconds).

We agree with the mitigation that is presented in the PSA for impacts to visual resources, and intend to fully implement them to minimize visual impacts to the landscape. With the implementation of such mitigation to impacts that are less than significant from this KOP, the impacts would remain less than significant. Therefore, we disagree with the CEC's conclusion that the impact on visual resources from KOP 3 would be significant and unavoidable.

141. Page 5.12-19 (Describing KOP 4), 3rd para.: "*Contrast Rating – As depicted in Figures 9b and 10b, the project would be highly prominent from this near-middle-ground viewpoint. Form, line, color and texture contrast of the project structures would all be strong. The tall solar collector towers would introduce highly dominant vertical features into the setting. This form contrast would be strongly amplified by the bright illumination of the heated solar collector at the top of each tower, as well as by light rays of reflected sunlight when ambient dust particles are present in the surrounding air. The mirror arrays would alter the character of the desert floor to an industrial visual texture. Visible areas of disturbed soil would contrast sharply in color and brightness with the surrounding soil surface. The project would demand attention, could not be overlooked, and would be strongly dominant in the landscape. Impact Significance - This very strong level of contrast would not meet the applicable Class III visual objectives for the Ivanpah Valley (moderate visual change) and would thus represent a potentially significant visual impact.*"

Comment: The Applicant disagrees with the PSA statement that the project would not meet the VRM Class III visual objectives. We have italicized the terms used in the above discussion that we believe are incorrect.

142. Page 5.12-20, 1st three paragraphs: The Applicant agrees that the project meets the objectives of VRM Class III at KOP 5. The Applicant does not agree that as motorists proceed northward that visual exposure is high or that contrast is strong. It is inappropriate for the PSA to attribute to KOP 5 views that are experienced as motorists proceed northward. This discussion should be included, if at all, in the discussion of the KOPs along I-15 that are closer to the project.

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143. Page 5.12-20, Staff Comments on Simulation, 1st para.: For the reasons stated above, the Applicant believes that the simulations are accurate.
144. Page 5.12-22, Clark Mountains: "KOP 9 is located on the trail to Umberci Mine, a popular hiking destination from Primm and the northern part of the Ivanpah Valley, located within the BLM Stateline Wilderness Area." Comment: Without further explanation, there is substantial doubt as to whether KOP 9 is a representative KOP of actual recreational users. How many users per year use this trail?
145. Page 5.12-23, 1st para: The simulations are accurate for the reasons stated above.
146. Page 5.12-23, CEC's KOP 9, Contract Rating and Impact Significance: Although the KOP may be in a Class I area, the project is in a Class III area; therefore, it is not appropriate to apply Class I criteria to the project. Because the project is in a Class III area, it is not restricted to "limited levels of visual change" as the above text implies. Instead, under Class III criteria, the project can attract attention, without dominating the view. At this KOP, the transmission towers, not the project, are the prominent and dominating features. Therefore, this project is consistent with the VRM criteria.

The PSA appears to conclude that if a project outside the VRM Class I area is visible from a viewpoint within the Class I area, then the permissible level of visual change outside the Class I area is "low." This is not a correct approach. In the case of *National Parks and Conservation Association v. County of Riverside*²³, the California Court of Appeal, 4th Appellate District, examined the adequacy of an EIR for a proposed landfill to be located within 1.5 miles of the southeastern boundary of Joshua Tree National Park. The National Parks and Conservation Association argued the EIR should have applied a "zero impact standard" to both wilderness and non-wilderness areas of the park. Moreover, the Association argued that because the landfill was in close proximity to the Park, the EIR should also apply a zero impact standard to the development outside the Park boundaries. The Court of Appeals rejected this argument. As the Court explained,

"When the Park boundaries were expanded by the Desert Protection Act in 1994, the chief sponsor of the bill, Senator Feinstein, wrote the Secretary of the DOI that the act was never intended to create a private de facto buffer zone around the Park for purposes of land use. The federal law creating the Park and the NPS management guidelines distinguish between wilderness and non-wilderness Park areas. The DOI maps reflect these distinctions. We conclude that for purposes of analyzing the various "wilderness experience" components, there is substantial evidence in the record to support the approach taken by the EIR and the County, to distinguish the significance of impacts according to the scientific and

²³ Nat'l Parks & Conservation Ass'n v. County of Riverside, 71 Cal. App. 4th 1341 (Cal. App. 4th Dist. 1999) [84 Cal.Rptr.2d 563]

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factual data gathered about the nature of the land affected: wilderness or non-wilderness. (Guidelines, § 15064, subd. (b).) Moreover, the record does not support any claim that no impacts from the project, whether significant or not, whether in a wilderness area or not, should be allowable, merely because of the proximity of the project to the Park.”²⁴

The Court specifically upheld the EIR application of noise standards to the proposed development:

“Based on the use of the residential standard, the EIR concluded noise impacts as to parklands would be insignificant. This included project construction, vehicular traffic and train traffic. The opponents claim the mitigation measures imposed pursuant to this finding were inadequate, based on a stringent view of wilderness protection, and also because they failed to address such issues as wildlife effects and areas away from the townsite. The trial court's ruling as to noise impacts found there was no support in the record that non-wilderness areas within the Park should be treated any differently from other areas within the Park.

“We respectfully disagree. We have discussed above the basis in the record for distinguishing between the Park wilderness and non-wilderness areas, such as NPS management guidelines and DOI maps that make distinctions between wilderness and non-wilderness Park areas. Within the Park areas nearest to the landfill site are found electrical transmission lines, an aqueduct and roads. The EIR commented that this evidence of human development was visible from within the nearby Eagle Mountain range. There is no authority to create a private de facto buffer zone around the Park for purposes of land use...There is no requirement that all noise from the project be mitigated to a level of inaudibility, particularly as to non-wilderness parklands because, as we have discussed above, the standards for assessing impacts of a project require careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data; these standards allow for a finding of an insignificant degree of impact, not necessarily a zero impact requirement. (Guidelines, § 15064, subd. (b).)²⁵

When we apply the holding of *NPCA v Riverside* to the PSA for the Ivanpah SEGS Project, several conclusions become apparent. First, the conclusion of the PSA that holds the proposed project to a zero standard of visual impact is clearly wrong. The PSA states, for example, that because the project is visible from a viewpoint in the

²⁴ Id.

²⁵ Nat'l Parks & Conservation Ass'n v. County of Riverside, 71 Cal. App. 4th 1341 (Cal. App. 4th Dist. 1999) [84 Cal.Rptr.2d 563]

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national preserve, the project must be held to a "very low [level of change] and must not attract attention."²⁶ However, as in the NPCA case cited above, there is no authority for creating a private de facto buffer zone around the Preserve for purposes of land use. Just as there was no requirement that development adjacent to the National Park be mitigated to a level of inaudibility, there is no requirement that development near the Preserve be mitigated to a level of invisibility.

It is also very clear from the NPCA case that it is important to fully consider the character of the parklands in the vicinity of the proposed development. In the NPCA case, the court found no basis for prohibiting human development outside the boundaries of the park, when within "the Park areas nearest to the landfill site are found electrical transmission lines, an aqueduct and roads. The EIR commented that this evidence of human development was visible from within the nearby Eagle Mountain range."²⁷ Similarly, the PSA is incorrect in its attempt to apply strict limitations of the proposed solar project outside the boundaries of the preserve, when in the areas within or nearer the preserve are found electrical transmission lines, roads and abandoned mines. This existing evidence of human development is as prominent from KOPs 9 and 10 as the project itself.

147. Page 5.12-23, 3rd para. from bottom of page: How far is this KOP from the mine and the rock climbing sites? How many visitors constitute "heavy use?"
148. Page 5.12-23, KOP 10, Staff Comments on Simulation, 1st para.: Retention Ponds F and H west of Ivanpah 2 are not depicted in the Figure 16 (KOP 10) of the PSA was reviewed. Detention ponds F and H were inadvertently omitted from being shown along Ivanpah 2's western boundary. A detention pond is shown along the western boundary of Ivanpah 3 near its southwestern corner. It appears in the photo as a horizontal tan swath that is adjacent to the Ivanpah 3 western project boundary. In addition, a detention pond is shown along the western boundary of Ivanpah 1, appearing as a horizontal narrow tan line near the right edge of the photo. At Ivanpah 2, there is a diversion channel shown in the simulation that appears as a small gray angled line leading from the Ivanpah 2 western boundary toward the tower in the center of Ivanpah 2. That diversion channel would connect to detention ponds F and H, which would be aligned along Ivanpah 2's entire western boundary. The missing detention ponds would appear similar to that shown for Ivanpah 3, but would follow the entire western boundary of Ivanpah 2 (rather than just a portion as the Ivanpah 3 pond does), and the missing ponds would appear narrower than what is shown for Ivanpah 3.
149. Page 5.12-23, CEC's KOP 10, Contrast Rating: Due to the high elevation of this KOP, the mirror fields would be visible, but the Applicant disagrees with the

²⁶ PSA, 5.12-11

²⁷ Nat'l Parks & Conservation Ass'n v. County of Riverside, 71 Cal. App. 4th 1341 (Cal. App. 4th Dist. 1999)

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assertion that the project would be "highly dominant," that there would be a "very strong level" of contrast, or that they would be the "dominant feature." The comment about "strong glare" in late afternoon is mere speculation. If there were any glare it would be not stronger than glare off a lake or other water body. Moreover, there are likely to be few if any visitors at this KOP in late afternoon. Given the rugged terrain and absence of camping facilities, we would not expect many visitors to be at these higher elevations in late afternoon.

150. Page 5.12-26, 2nd para.: The PSA refers to VIS-5; however, it appears that it is actually referring to VIS-4.
151. Page 5.12-28, 2nd para.: These are extraordinary statements. First, because the PSA has not determined whether the I-15 widening or Desert Xpress projects are reasonably foreseeable and probable. Second, because the PSA does not explain how a train track or a wider freeway would convert the area into a "highly urbanized and industrialized landscape" especially since train tracks by themselves would be nearly invisible at ground level. Third, because the PSA uses undefined terminology such as "highly urbanized and industrialized." These are terms that evoke images of downtown Las Vegas or Central Los Angeles, rather than what will actually result in the Ivanpah Valley even if all of these projects are constructed.
152. Page 5.12-29, Cumulative Impact Conclusion: This conclusion is fatally flawed for three primary reasons.

First, the PSA finds that the impacts of the project are cumulatively considerable based on the assumption that all of the projects listed in Cumulative Tables I and III will be constructed.²⁸ However, this assumption is clearly wrong. The PSA itself acknowledges that not all of the projects listed in these tables will be constructed or operated.²⁹ As we explain in our comments on the Cumulative Scenario chapter of the PSA, it is likely that only a very small percentage of the listed projects will be constructed or operated.

Rather than presenting a laundry list of all the projects that might possibly be constructed, CEQA and NEPA require that the lead agency prepare a list of those projects that are reasonably foreseeable probable future projects. This requires that the lead agency must make a careful, case-by-case judgment as to whether particular possible future projects are truly "reasonably foreseeable" and thus deserve inclusion in a cumulative impacts analysis.³⁰

28 The PSA also appears to assume that all of these projects will be constructed in "scenically intact, undisturbed desert landscapes." Such a statement is sheer speculation. The ISEGS is not located in such a landscape. There is no credible basis for assuming that any of the other listed projects would be constructed in such locations.

29 PSA,

30 Guide to CEQA, Remy, p. 472

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Second, the PSA improperly considers the impacts of projects outside the viewshed of the ISEGS. The PSA claims that the ISEGS project is "potentially associated" with two types of cumulative impact: "1) cumulative impacts within the immediate project viewshed, essentially comprising foreseeable future projects in the Ivanpah Valley; and 2) cumulative impacts of foreseeable future solar and other renewable energy projects within the California Desert District (CDD), California Desert Conservation Area (CDCA), Mojave Desert, or other broad basin of the project's affected landscape type. The widest applicable basin of cumulative effect would include all of the Mojave Desert landscape type, including southeastern California, southern Nevada, and western Arizona."

The first geographical boundary described by the PSA – the area within the immediate project viewshed – is the geographical boundary required by CEQA and NEPA for cumulative visual analysis. There are literally thousands of examples of environmental documents that define the geographical boundary for the cumulative visual analysis to be the project viewshed. The EIR for the Sunrise Powerlink, for example, states: "Cumulative visual impacts would occur where the new project facilities would be viewed in combination with other projects in the area."³¹ Similarly, the FEIR for the SONGS Replacement Project stated:

"Cumulative impacts to visual resources would occur where project facilities or actions would be viewed in combination with other past, present, or foreseeable future developments. The significance of cumulative visual impacts would depend on: the degree to which the viewshed is altered; the degree to which visibility of scenic resources is impaired due to either view obstruction or direct impacts to scenic resource features; and the degree to which visual contrast or dominance is increased, due to visibility of the project in combination with other foreseeable projects."³²

The second geographical boundary described by the PSA is not consistent with CEQA or NEPA. Despite the clear guidance of the CEQA guidelines that the PSA provide a reasonable explanation of the geographic limitations used, the PSA simply asserts that the project is "potentially associated" with these areas, without any explanation of why they were selected. It appears that the Mojave Desert and CDCA were selected merely because other projects are proposed in these broad regions and the potential for cumulative impact in these regions seemed clear to the author. The question, however, is not whether there is a potential for cumulative impacts from similar projects in the continent, the southwest United States or even within the state. The question, for the purposes of the PSA, is whether the actual impacts of the

31 Sunrise PowerLink Project, Final EIR, 11-6

32 SONGS Steam Generator Replacement Project, F-10

http://www.cpuc.ca.gov/Environment/info/asp/sanonofre/feir/v1/f_otherceqa.pdf

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project together within other closely related projects is cumulatively considerable within the natural boundaries of the affected resource.

Instead of defining precise geographic boundaries that conform to the viewshed, the PSA describes five alternative geographic areas, each of increasingly greater scope. For some of the areas listed in the PSA (such as the CC or the CDCA), the boundaries – albeit vast – are defined. The other areas, such all of the Mojave Desert in three states, are not defined at all. However, even if these areas could be defined, they are far too large for the purposes of cumulative impact analysis. These vast geographical regions might be appropriate for a programmatic EIS evaluating the management of the entire Southwest United States, but they are unprecedented for the evaluation of a single development project.

Third, the PSA appears to assume that most, if not all, of the projects listed in Table III will interact with the visual resources of the ISEGS. This is also clearly incorrect.

The PSA identifies seventeen "Future Foreseeable Projects in the Ivanpah Valley Area." (Cumulative Impacts, Table 3, PSA, p. 4-12, 13.) The list is over-inclusive. Some of the projects listed are not within the viewshed of the proposed project (e.g., G, J and K). Other projects would be so far from the project as to have little or no visual interaction. (e.g., B) Some projects are so small or temporary as to not be visible from any of the key KOPs (e.g., E, H, and P). Other projects have no visual impacts at all or impacts that are temporary (e.g., D, F and O).

Therefore, the list of future projects with the potential to visually interact with the proposed project is very short. And of these few projects that may actually interact with the visual impacts of the ISEGS, the important question is which, if any, are reasonably foreseeable probable future projects? Projects A and Q are also proposed solar energy projects in the viewshed, but there is no substantial evidence that either project is reasonably foreseeable. An NOD letter alone is not proof of reasonable probability. It is not sufficient for the PSA to simply compile a list of possible "future projects." As we explain above, the PSA must make a careful, case-by-case judgment as to whether particular possible future projects are truly "reasonably foreseeable" and thus deserve inclusion in a cumulative impacts analysis.

WASTE MANAGEMENT

153. No comments.

WORKER SAFETY/FIRE PROTECTION

154. No comments.

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ENGINEERING ASSESSMENT

FACILITY DESIGN

155. No comments.

GEOLOGY AND PALEONTOLOGY

156. Page 6.2-3, Setting, 1st para., last sent.: the last part of the sentence stating that the gas-fired boiler will “provide an alternative fuel source during periods of nominal sunlight” is not quite correct. The gas-fired boiler will be used during start-up and then during periods of temporary cloud cover. The text implies that the gas-fired boiler could be used on cloudy days or nighttime when the plant would otherwise not be operating. This is not the case because boiler use would not exceed 4 hours on any given day and average boiler use will be less than one hour per operating day.

157. Page 6.2-3, Setting, 1st para., 6th line: the natural gas pipeline is now about 6 miles long, not 5.3 miles.

158. Page 6.2-16, Geologic, Mineralogic, and Paleontologic Resources, 2nd para.: The text notes the following:

“Regarding paleontological resources, Energy Commission staff has reviewed the paleontological resources assessment in Section 5.8 of the AFC (CH2M Hill, 2007) and the paleontologic records search attached in Appendix 5.8A (Scott, 2007). Staff has also reviewed the paleontological literature and records search conducted by the Natural History Museum of Los Angeles County (McCleod, 2007), as well as the online records database maintained by the University of California, Museum of Paleontology (UCMP, 2007). Based on a review of this information, no paleontological resources have been documented on the ISEGS plant site or at the proposed lay down area.”

Therefore the following edits are suggested to COCs PAL-3 and PAL-4 to bring them into consistency with the finding of low to no paleontological sensitivity of the sediments that will be affected by the project. Proposed additions are shown in underline; proposed deletions in ~~strike-out~~.

PAL-3 If after review of the plans provided pursuant to PAL-2, the PRS determines that sediments with moderate, high, or unknown paleontological sensitivity will be impacted, ~~The~~ the project owner shall ensure that the PRS prepares, and the project owner submits to the CPM for review and approval, a paleontological resources monitoring and mitigation plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as

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the formal guide for monitoring, collecting, and sampling activities, and may be modified with CPM approval. This document shall be used as the basis of discussion when onsite decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM.

PAL-4 If after review of the plans provided pursuant to PAL-2, the PRS determines that sediments with moderate, high, or unknown paleontological sensitivity will be impacted then, ~~Prior prior~~ to ground disturbance and for the duration of construction activities involving ground disturbance, the project owner and the PRS shall prepare and conduct weekly CPM-approved training for the following workers: project managers, construction supervisors, foremen and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Worker training shall consist of an initial in-person PRS training during the project kick-off, for those mentioned above. Following initial training, a CPM approved video or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern.

If after review of the plans provided pursuant to PAL-2, the PRS determines that sediments with moderate, high, or unknown paleontological sensitivity will be impacted then ~~No~~ ground disturbance shall occur prior to CPM approval of the Worker Environmental Awareness Program (WEAP), unless specifically approved by the CPM.

POWER PLANT EFFICIENCY

159. Page 6.3-2 and 6.3-99, Solar Land Use Efficiency: The discussion of "Solar Land Use Efficiency" measure is not based on any applicable LORS. Instead, the discussion is based on a "Record of Conversation" with one of the section's authors: "CEC2008n - CEC / S. Baker (tn: 47155). Record of Conversation Re: Efficiency Measurement of Solar Power Plants. Dated on 2/22/2008. Submitted to CEC / Docket Unit on 7/21/2008." A record of conversation does not qualify as a LORS requirement. Moreover, a proposed criteria applicable to renewable projects is unprecedented and potentially discriminatory. Specifically, a measure based solely on capacity is misleading as it completely ignores energy production and site-specific conditions that affect the capacity factor of a project and thus the potential energy production potential. The entire discussion of "Solar Land Use Efficiency" should be deleted. If the Commission wants to develop a new, renewable energy-only formula for power plant efficiency, it would have to do so on a new Rulemaking. (We do not recommend opening a rulemaking on this issue.)

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POWER PLANT RELIABILITY

160. No comments.

TRANSMISSION SYSTEM ENGINEERING

161. Page 6.5-3: Project Description. The original planned operational dates were 2010, 2011 and 2012.

162. Page 6.5-4: Switchyard and Interconnection Facilities, 1st para. 2nd line: Change “through 25 kV” to “through 15 kV.”

163. Page 6.5-4: Switchyard and Interconnection Facilities. 2nd para., 2nd line: change “477 kcmil ACSR” to “900 kcmil ACSR.”

164. Page 6.5-4, Switchyard and Interconnection Facilities. 3rd para., 2nd line: Change “3 bays and 5 positions” to “2 bays and 5 positions.”

165. Page 6.5-9: TSE-5, Item 1. Last sentence: Change “3-bays and 5 positions” to “2 bays and 5 positions.”

ALTERNATIVES

166. Page 7-5, Summary Description of Proposed Project, 1st para., 7th line: The project will take about 4,065 acres of land. That figure includes the acreage for all permanent facilities including the administration/warehouse/maintenance facility and the temporary construction logistics area. Once construction is completed, about 263 acres of the construction logistics area will no longer be needed and will be revegetated.

167. Page 7-5, Summary Description of Proposed Project, 1st para., last sent.: The three solar plants will share two groundwater wells. One well is sufficient to meet the plants water needs with the second well providing 100 percent backup capacity.

168. Page 7-6, 1st para., last sent.: Each heliostat would contain two mirrors. Each mirror would be 10.5 feet tall and 7.2 feet wide.

169. Page 7-6, 1st para., 2nd sent.: This should refer to the Primm Valley Golf Club, which contains two courses: the Lakes Course and the Desert Course.

170. Page 7-6 to 7-7, Project Objectives. The PSA lists the Applicant’s eight basic project objectives on pages 7-6 to 7-7. The PSA then list three basic project objectives. It is unclear whether the three are intended to be a summary and synthesis of the Applicant’s basic project objectives or the Staff’s new list of basic project objectives.

Under CEQA, the Applicant’s basic projects objectives frame the Alternatives analysis.

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14 CCR 15126.6 Consideration and Discussion of Alternatives to the Proposed Project.

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

* * *

(c) Selection of a range of reasonable alternatives. The range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. * * *

(f) Rule of reason. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. *Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project.* * * * (Emphasis added.)

In each instance, the focus is on the Applicant's basic objectives for the project. Thus, to the extent that the Staff has attempted to summarize and synthesize the Applicant's basic project objectives, we have concerns because they are being mis-stated especially with regard to schedule. If Staff intends to ignore the Applicant's basic project objectives in favor of a Staff-crafted list of objectives, such an approach is inconsistent with CEQA and should be deleted.

171. Page 7-58, Reconfiguration Alternative, bullet at bottom of page: The average acreage for Ivanpah 1 and 2 is about 917 acres each. Ivanpah 3 was increased to about 1,843 acres.

172. Page 7-59, next to last bullet: The additional temporary construction area is about 260 acres.

GENERAL CONDITIONS

173. No comments.

APPENDIX A

174. In the Introduction and Purpose section and again in the conclusion (page 9-38), the PSA states that the approval of the Ivanpah SEGS project causes the SCE upgrade

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project and its environmental effects. This is not accurate. In all three SIS studies for Ivanpah 1, 2 and 3 and in its recent filing to the CAISO for the Mountain Pass to Eldorado 230 kV upgrade, SCE states that the 230 kV upgrade is being developed to serve many projects (over 1400 MW) seeking interconnection in the region. Ivanpah SEGS may be the first project in the CAISO interconnection queue, but it does not cause the upgrade. If the Ivanpah SEGS project were not approved, the upgrade project would still be developed. Therefore, the 230 kV upgrade is not a reasonably foreseeable subsequent project that results from approval of Ivanpah SEGS. The BLM and CPUC are properly evaluating the impacts of the proposed upgrade in a separate process. The appendix material should not be characterized as a “downstream impacts analysis.” It would be more properly characterized as information on a separate project in the vicinity.

