

**DOCKET****07-AFC-5**DATE MAR 16 2010RECD. MAR 17 2010

March 16, 2010

California Energy Commission
Attn: Paul Kramer, Hearing Officer
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

Re: **Ivanpah Solar Electric Generating System, Docket No. 07-AFC- 5**

Dear Mr. Kramer,

Please find enclosed for filing the original and three copies of Sierra Club's Supplemental Testimony. If you have any questions or need additional information, please contact me at (415) 977-5766 or violet.lehrer@sierraclub.org. Thank you for your attention to this matter.

Sincerely,

Violet Lehrer
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Sierra Club Environmental Law Program
85 Second Street, 2nd Floor
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STATE OF CALIFORNIA

**Energy Resources Conservation and
Development Commission**

In the Matter of:)
)
The Application for Certification for the)
IVANPAH SOLAR ELECTRIC)
GENERATING SYSTEM)
_____)

Docket No. 07-AFC-5

INTERVENOR SIERRA CLUB' S SUPPLEMENTAL TESTIMONY

March 16, 2010

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INTERVENOR SIERRA CLUB'S SUPPLEMENTAL TESTIMONY

Intervenor Sierra Club provides the following supplemental testimony and updated list of exhibits pursuant to the *Notice of Additional Evidentiary Hearing* issued March 11, 2010.

The attached testimony was prepared by Scott Cashen (Cashen Declaration attached). As the parties are aware, Mr. Cashen will not be available to testify on March 22, 2010.

UPDATED LIST OF EXHIBITS

Exhibit Number	Author and Title
612	Supplemental Testimony of Scott Cashen

ATTACHMENTS: Supplemental Testimony of Scott Cashen
Declaration of Scott Cashen
Proof of Service

Dated: March 16, 2010

Respectfully submitted,

Original signed by:

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STATE OF CALIFORNIA

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In the Matter of:)
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SUPPLEMENTAL TESTIMONY OF SCOTT CASHEN

I. Introduction

This testimony is offered as a supplement to my December 16, 2009 direct testimony. Specifically, this supplemental testimony evaluated the Applicant’s “Mitigated Ivanpah 3” for the Ivanpah Solar Electric Facility Generating System (ISEGS) Project. In my professional opinion, the Mitigated Ivanpah 3 alternative will not reduce the Project’s environmental impact on desert tortoise, primarily because the alternative would further contribute to the desert tortoise’s precipitous decline in the Ivanpah Valley. In addition, compared to the Applicant’s original proposal, the Mitigated Ivanpah 3 alternative would reduce impacts to only one of the six special-status plant species targeted for conservation. Mitigated Ivanpah 3 would impact an equal number or more localities of the remaining five special-status plant species.

The supplemental testimony is based on my knowledge and experience, my review of environmental documents pertaining to the Project, a site-specific field study, and the testimony presented at the Project evidentiary hearings. The information gathered from these sources has led me to the following conclusions on the Applicant’s Mitigated Ivanpah 3 proposal:

A. Mitigated Ivanpah 3 Would Not Avoid the Project’s Impacts on Desert Tortoise

For its Mitigated Ivanpah 3 alternative, the Applicant made numerous references to the benefits of maintaining large blocks of habitat for rare plants. For example, page 3-4 of the proposal states:

“[i]n general, large blocks of habitat, such as the Northern Rare Plant Mitigation Area, are more ecologically valuable because natural ecosystem processes (such as seed dispersal) will remain intact. The Northern Rare Plant Mitigation Area is contiguous to large expanses of

undisturbed habitat located to the north of Ivanpah 3 and it is also expected that large-scale ecological dynamics such as natural surface hydrology will be unaltered.”

The proposal reiterated these benefits for rare plants on pages 3-5 and 3-6. However, the Applicant omitted a discussion of ecosystem processes and habitat patch-size dynamics from the desert tortoise section of the proposal. These factors were not discussed because Mitigated Ivanpah 3 would do almost nothing to mitigate the significant impact the Project would have on the species. Instead, the only benefits the Applicant could provide for Mitigated Ivanpah 3 were the claims that three fewer tortoises would need to be relocated, and that additional tortoise relocation could occur “within their home range.”¹ These claims lack the scientific foundation to make them credible mitigation.

First, the Applicant’s proposal acknowledged that it does not know how many tortoises would be avoided by the Mitigated Ivanpah 3 alternative;² tortoises move, and their populations are dynamic. The Mitigated Ivanpah 3 avoidance area may now have 50 tortoises, it may now have zero; we do not know. At best, the Applicant’s data presents information on tortoise occupancy at a moment in time in 2007 or 2008. This limitation is discussed throughout wildlife literature and is common knowledge to any research biologist; it cannot be ignored to support the Applicant’s proposal.

Second, the Applicant did not substantiate that an additional translocation area would provide biological benefits to tortoises subject to translocation. The Applicant already concluded that moving tortoises to the previously proposed translocation sites would not overburden the existing population. Therefore, an additional translocation area is not needed to prevent overpopulation.³ The Applicant’s claim that an additional translocation area would enable tortoises to be moved within their home range lacks any scientific foundation. The Applicant never mapped the home ranges of the tortoises that would require translocation. Therefore, the Applicant can guess, but has no real knowledge of whether it is moving a tortoise within its home range or not. Furthermore, the Applicant reported that tortoises in the Ivanpah Valley have home range from 5 to 220 acres.⁴ This data indicates many of the tortoises occurring within the interior portion of the Project area would be moved out of their home range(s) regardless of how many translocation sites are available.

As a result of these issues, the Applicant has provided no scientific evidence demonstrating that Mitigated Ivanpah 3 would avoid, minimize or mitigate the Project’s significant impacts on desert tortoise. Instead the Applicant has been forced to bolster relatively insignificant benefits while ignoring the most significant impacts. The ecosystem processes that the Applicant uses to promote the rare plant mitigation are the same processes that affect desert tortoise populations. In this regard, the Mitigated Ivanpah 3 alternative would do very little to alleviate the ecosystem degradation that will

¹ Mitigated Ivanpah 3 Proposal, p. 3-2.

² Mitigated Ivanpah 3 Proposal, p. 3-2.

³ AFC, Supplemental Data Response Set 2J.

⁴ AFC, Supplemental Data Response Set 2J.

occur as a result of the Project. Specifically, the Mitigated Ivanpah 3 alternative would perforate a relatively undisturbed, intact ecosystem, resulting in large-scale habitat loss, fragmentation, and disturbance. According to research, this type of fragmentation, loss, and degradation can result in habitat being largely useless to tortoise populations.⁵ These are the key factors that need to be examined to promote a less deleterious Project alternative, not whether 1, 5, or 10 fewer tortoises would require relocation.

Desert tortoise populations fluctuate naturally in response to environmental variables (e.g., food availability, predator abundance, and demographic stochasticity). This includes periods of population decline and population recovery. The Mitigated Ivanpah 3 proposal focuses on the short-term benefits the alternative would have for three tortoises. Even under the assumption that these benefits would be realized, they would do nothing to mitigate the long-term consequences of the Project on desert tortoise population viability. The primary reason the desert tortoise population has declined precipitously is because of habitat loss and degradation of natural ecosystem processes, not because a few tortoises were moved. The 1994 Recovery Plan reports: “These [population] declines are mainly attributed to direct and indirect human-caused mortality coupled with the inadequacy of existing regulatory mechanisms to protect desert tortoises and their habitat.”⁶ and the 2008 Draft Revised Recovery Plan reports: “The vast majority of threats to the desert tortoise or its habitat are associated with human land uses.”⁷ If the Applicant, Commission, and BLM intend to help avoid further tortoise declines, then these entities must address the most significant causes of the decline.

Maintaining natural ecosystem processes and ecological integrity are important principles of conservation biology. To validate their importance at the Project site, I conducted a site-specific study that documented a higher density of tortoise burrows in the proposed Project area than on the land near the Interstate. The results of my study were subsequently contested by the Applicant, despite the fact that the results were consistent with all available literature on the effects of roads on tortoise abundance. The importance of ecological principles and the distinction between habitat quality and occupancy were core arguments of my testimony and the Sierra Club’s effort to have the Project moved closer to the Interstate. Unsurprisingly, the Applicant’s Mitigated Ivanpah 3 proposal supports these arguments. Page 3-2 of the proposal states:

“[w]hile all of the Ivanpah SEGS project area is within tortoise habitat, most biologists agree that *Ivanpah 3 supports relatively better quality habitat than areas to the south closer to Interstate 15 (I-15)*.⁸ This assessment is based on relatively greater frequency with which tortoise sign is observed, increased vegetative diversity and density, greater

⁵ Boarman WI. 2002. Threats to Desert Tortoise Populations: A Critical Review of the Literature. U.S. Geological Survey, Western Ecological Research Center. Sacramento (CA): 86 p.

⁶ U.S. Fish and Wildlife Service. 1994. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon.

⁷ U.S. Fish and Wildlife Service. 2008. Draft revised recovery plan for the Mojave population of the desert tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, California and Nevada Region, Sacramento, California. 209 pp.

⁸ [emphasis added].

number of ephemeral washes in the northern portion of the project area and the greater number of tortoises found during spring surveys. Reducing the project footprint in this area is likely to have greater benefit to tortoises than would reductions in other areas.”

The Applicant’s most recent statements only confirm that if the Commission and BLM want to reduce the Project’s impacts on desert tortoises and desert tortoise habitat, the Project should be moved in whole or in part “to the south closer to Interstate 15” as the Applicant has acknowledged. There is no value in considering the Mitigated Ivanpah 3 proposal, which failed to show how eliminating a small portion of the top of Ivanpah 3 would do anything substantial to avoid areas with the highest tortoise densities and highest quality habitat.

Feasibility of a Project Alternative that Promotes Long-term Population Viability

Mitigated Ivanpah 3 would have a significant impact on the desert tortoise population. After hearing and reviewing all the testimony that has been provided, I have concluded the Project could be reconfigured to have considerably less of an impact on the desert tortoise population. My conclusion is supported by my examination of site conditions, the testimony provided by the experts, and the scientific literature.

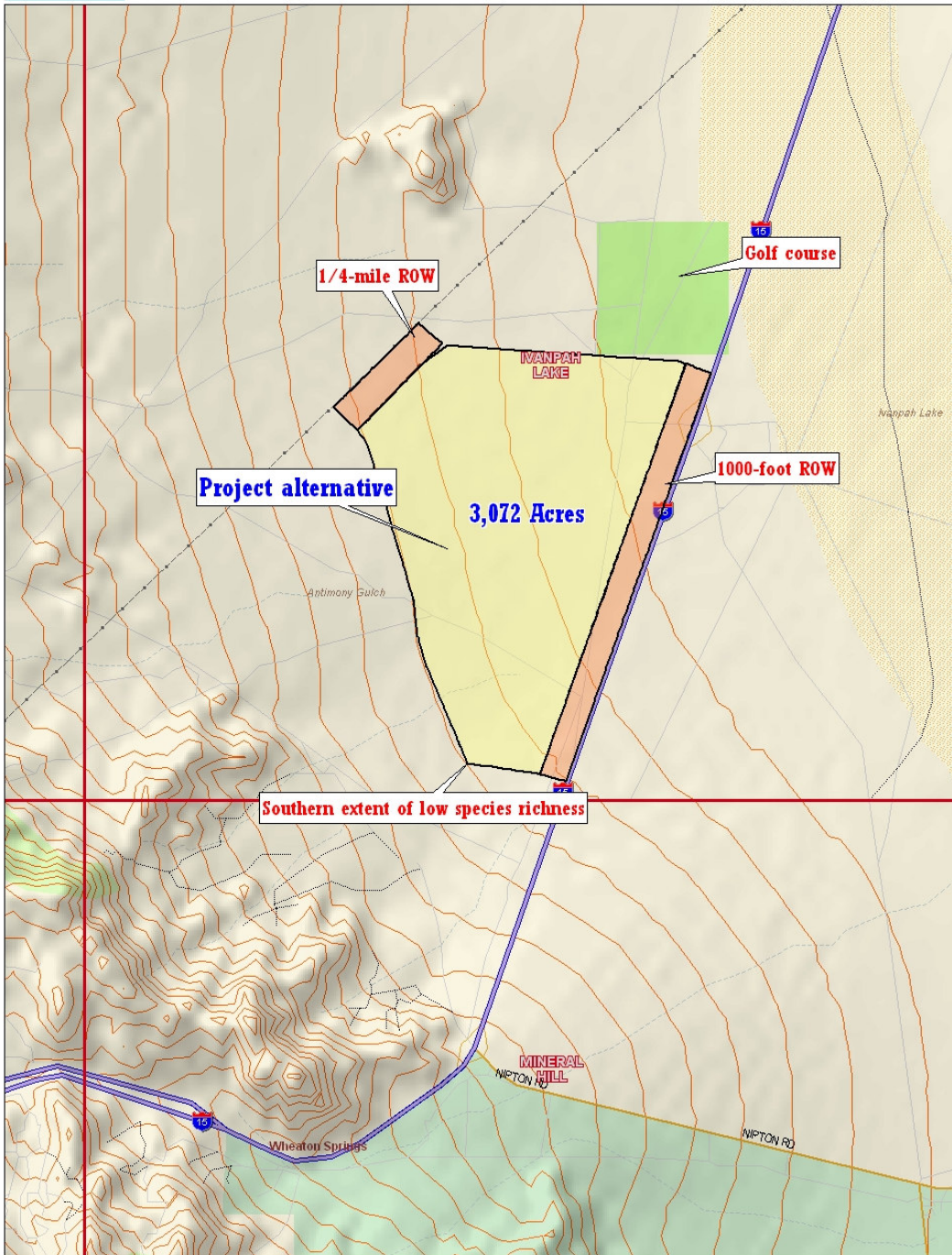
Figure 1 depicts a reconfiguration of the Project such that it would reduce impacts on desert tortoises and desert tortoise habitat. The proposed alternative encompasses land that contains approximately one-half the density of desert tortoises as the proposed Project site. Furthermore, it encompasses land known to provide lower value to the organism due to its proximity to I-15, the golf course, and other types of anthropogenic disturbance. These considerations are particularly important to the long-term recovery of the species. “High quality” habitat provides little value to recovery if it is not suitable for long-term occupation. As desert tortoise expert Dr. Ron Marlow stated in his testimony, “lots of really good potential habitat is not occupied by tortoises because of the impacts of the existing road.”⁹ The proposed alternative site encompasses such habitat.

The proposed alternative excludes the 1000-foot Caltrans ROW for the Joint Point of Entry and a 0.25-mile ROW for the Los Angeles Department of Water and Power. It encompasses approximately 3,072 acres of land adjacent to anthropogenic disturbance and known to have low plant species richness. Overall, the proposed location occupies the lower elevation region that has lower species diversity.^{10 11} From an ecological perspective, the proposed alternative would aggregate anthropogenic disturbance, and thus reduce the many indirect Project impacts (e.g., fragmentation, invasive species, edge-effects) on the desert tortoise.

⁹ Evidentiary Hearings Transcript. 2009 Jan 11. p. 419.

¹⁰ See CH2MHILL. 2009 Aug 10. Vegetation Surveys for Potential Relocation and Translocation Areas. Supplemental Data Response, Set 2I, Ivanpah Solar Electric Generating System (07-AFC-5). Letter from John Carrier, Program Manager to John Kessler, Project Manager, California Energy Commission.

¹¹ DEIS, p. 4-45.



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Figure 1 depicts a project reconfiguration that would reduce impacts on desert tortoise. The southern boundary of the proposed alternative coincides with sampling locations determined by the applicant to have plant species richness too low for desert tortoise translocation (i.e., occupation).

B. Mitigated Ivanpah 3 Would not Appreciably Benefit Special-status Plants

Table 3.2-2 of the proposal summarized the value of the Mitigated Ivanpah 3 alternative to rare plants. Compared to the original proposal, the Mitigated Ivanpah 3 alternative would result in impacts to an equal number or more localities of five of the six rare plant species targeted for conservation.

In the Mitigated Ivanpah 3 proposal the Applicant continues to suggest that the Project would avoid impacts to most special-status plant localities occurring within the Project area. For example, on page 3-4, the proposal stated: “[t]hese smaller avoidance locations are the same areas as presented in the Ivanpah SEGS Special-Status Plant Avoidance and Protection Plan [Exhibit 81]. They have been selected to avoid and protect 100 percent of the Rusby’s desert mallow and the Mojave milkweed areas with the highest densities of plants to the maximum extent practicable while achieving energy generation objectives.” However, the Mitigated Ivanpah 3 proposal provided no additional protection for these species beyond that in the FSA.¹² Regarding the original proposal, the Commission staff concluded that the Applicant’s “smaller avoidance area” approach was “infeasible to protect the special-status plants from significant indirect impacts (i.e., from introduction and spread of non-native plants, alterations of the local hydrology, higher than normal dust levels, etc.).”¹³ That finding applies equally to the new alternative.

The Applicant’s proposal ignores the FSA/DEIS’s condition of certification BIO-18, which indicated the Applicant should reconfigure ISEGS 3 and 1 to avoid special-status plant species. Finally, the Applicant’s proposal failed to meet the FSA/DEIS’s condition of certification BIO-18, which requires avoidance of 75 percent of the individuals of the target rare plant species. The Applicant continues to propose impacts to all occurrences of small-flowered androstephium, despite staff’s rebuttal testimony, which emphasized the need to avoid impacts to this species.

C. Project Layout and Design

The Mitigated Ivanpah 3 proposal includes a 109-acre reduction in the Construction Logistics Area (CLA) and a 433-acre reduction of Ivanpah 3. The Applicant concluded that the 542-acre reduction represents an approximately 12 percent reduction in acreage of the entire 4,062-acre project footprint. According to the Applicant, “[a]s described in the AFC, the initial Plan of Development was for 7,040 acres. With the Mitigated Ivanpah 3 arrangement, the 3,520-acre Mitigated Ivanpah 3 project would be half the size of the original 7,040-acre proposed property boundary.” The Applicant’s statements are incorrect and/or deceptive for the following reasons:

1. As indicated by the AFC, the Applicant’s original proposal was for a facility (including buildings and substation) totaling 3,400 acres, not 7,040 acres.¹⁴

¹² See Table 3.2-2 of the Mitigated Ivanpah 3 Proposal.

¹³ CEC staff rebuttal testimony, p. 28.

¹⁴ AFC, p. 5.2-1.

Therefore, Mitigated Ivanpah 3 project would still be three and a half percent larger than the Applicant's original proposal, not "half the size."

2. The Applicant proposes to use 59 acres of the 109 acres eliminated from the CLA as a succulent nursery area. The Applicant's proposal does not provide any information on the activities that will occur in the nursery (e.g., infrastructure, vehicular disturbance), but presumably at least some disturbance will occur. Therefore, the 59-acre nursery should be excluded from the Applicant's acreage reduction estimate.

According to Page 3-3 of the Applicant's proposal, "[p]reserving *some* vegetation in those areas [109 acres eliminate from the CLA] would likely improve the post-operation reclamation of tortoise habitat." The text is footnoted with the statement that the "[a]pplicant will brief the issues related to how much compensatory mitigation is required for desert tortoise mitigation." For biologists and the public to fully review the new alternative, the Applicant was required to include all of the relevant information into its proposal. At best, the meaning of the Applicant's footnote is unclear. If the Applicant intends to propose changes to its compensatory mitigation requirements, it needs to specify the proposed changes so they can be evaluated.

II. CONCLUSION

As compared to the original Project footprint, Mitigated Ivanpah 3 would do little or nothing to avoid impacts to desert tortoise. Simply, Mitigated Ivanpah 3 does not address the most significant threats to desert tortoise population viability and recovery. Likewise, Mitigated Ivanpah 3 provides no real benefit to rare plants because it will impact an equal number or more of five of the six species targeted for conservation.

Sincerely,



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**Declaration of Scott Cashen
Ivanpah Solar Electric Generating System Project**

Docket 07-AFC-5

I, Scott Cashen, declare as follows:

- 1) I am an independent biological resources consultant; I have been self-employed for the past two years. Prior to starting my own business I was the Senior Biologist for TSS Consultants.
- 2) I hold a Masters' degree in Wildlife and Fisheries Science. My relevant professional qualifications and experience are set forth in the resume and direct testimony I prepared and submitted on December 16, 2009.
- 3) I prepared the supplemental testimony attached hereto and incorporated herein by reference, relating to the biological resource impacts of Applicant's "Mitigated Ivanpah 3" Biological Mitigation Proposal for the Ivanpah Solar Electric Generating System Project.
- 4) I prepared the testimony and map attached hereto and incorporated herein by reference relating to project alternatives that would reduce impacts on biological resources.
- 5) It is my professional opinion that the attached testimony and map are true and accurate with respect to the issues that they address.
- 6) I am personally familiar with the facts and conclusions described within the attached testimony and map, and if called as a witness, I could testify completely thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: March 16, 2010

Signed: 

At: Walnut Creek, CA



**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV**

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

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

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DECLARATION OF SERVICE

I, Violet Lehrer, declare that on March 16, 2010, I served and filed copies of the attached, testimony dated, March 16, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [\[www.energy.ca.gov/sitingcases/ivanpah\]](http://www.energy.ca.gov/sitingcases/ivanpah).

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

(Check all that Apply)

FOR SERVICE TO ALL OTHER PARTIES:

- sent electronically to all email addresses on the Proof of Service list;
- by personal delivery;
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- sending ^{four} an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (**preferred method**);

OR

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

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 07-AFC-5
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Violet Lehrer