UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

September 3, 2010

George R. Meckfessel
Bureau of Land Management
Needles Field Office
1303 South U.S. Highway 95
Needles, CA 92363

Subject: Final Environmental Impact Statement for the Ivanpah Solar Electric Generating System, San Bernardino County, California [CEQ# 20100292]

Dear Mr. Meckfessel:

The U.S. Environmental Protection Agency (EPA) has reviewed the Final Environmental Impact Statement (FEIS) for the Ivanpah Solar Electric Generating System (ISEGS) Project (Project). Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act (CAA).

EPA reviewed the Joint Draft Environmental Impact Statement (DEIS) and Staff Assessment and provided comments to the Bureau of Land Management (BLM) and the California Energy Commission (CEC) on February 11, 2010. We rated the DEIS as *Environmental Concerns – Insufficient Information* (EC-2), primarily due to concerns over potential impacts to biological and aquatic resources, threatened and endangered species, and air quality. We also asked for additional information on cumulative impacts from reasonably foreseeable future actions, justification for the Project purpose, need, and independent utility, and evaluation of alternatives.

We reviewed the Supplemental DEIS (SDEIS) and submitted comments on June 3, 2010. We rated the SDEIS as EC-2. While we commended BLM for evaluating reduced acreage alternatives and a modified purpose and need statement in the SDEIS, our concerns regarding the environmental impacts of the Project and the need for evaluation of a reasonable range of alternatives were only partially addressed. Previously, on January 16, 2008, EPA provided extensive formal scoping comments for the proposed Project.

We appreciate the efforts of BLM, the applicant, and its consultants to discuss and respond to our DEIS and SDEIS comments. We note that, in the FEIS, BLM has incorporated additional analysis of cumulative impacts, including additional discussion of the Ivanpah-El Dorado transmission line; removed specified energy output requirements, time constraints, and siting restrictions from its purpose and need statement and alternatives analysis criteria; included evaluation of a Phased Approval alternative and alternative sites with pending Right-of-Way (ROW) applications; evaluated alternatives that reduce impacts to biological and aquatic

resources, including lands outside the original ROW; included additional discussion of habitat connectivity and impacts to birds and bighorn sheep; and integrated a Low Impact Development approach, favoring maintenance of natural flow pathways wherever possible and eliminating stormwater storage and containment areas.

We were pleased to note that BLM now indicates that it can sign a ROD approving a ROW grant for a project area that is not contained in the original ROW application, and that BLM no longer appears to be taking the position that an existing application confers a property right that precludes performing a detailed evaluation of an alternative to a proposed project. We also appreciate BLM's recognition that locating solar energy facilities on previously disturbed sites (public or private) would be desirable. EPA believes these are important clarifications that should be implemented by all BLM field offices to set the stage for consistent and full evaluation of reasonable alternatives for all current and future renewable energy projects proposed on BLM lands.

EPA continues to have concerns about impacts to aquatic and biological resources, threatened and endangered species, and air quality. We request additional information, clarification, and analysis of impacts in these resource areas. We also strongly encourage BLM to reconsider its preferred alternative decision, as the Modified I-15 Alternative would reduce impacts to biological and aquatic resources. Our primary concerns and recommendations are attached. We recommend that BLM address these issues prior to making a final decision on the proposed Project.

We are available to discuss all recommendations provided. Please send two hard copies and one CD ROM copy of the responses to FEIS comments and the Record of Decision to us when they are filed with our Washington D.C. office. If you have any questions, please contact me at 415-972-3521, or contact Tom Plenys, the lead reviewer for this Project. Tom can be reached at 415-972-3238 or plenys.thomas@epa.gov.

Sincerely,

/s/

Kathleen M. Goforth, Manager
Environmental Review Office (CED-2)

Enclosures: EPA Detailed Comments

Cc: Jim Abbott, Bureau of Land Management, Acting State Director
Tom Hurshman, Bureau of Land Management
John Kessler, California Energy Commission
Shannon Pankratz, U.S. Army Corps of Engineers
Brian Croft, U. S. Fish and Wildlife Service
Becky Jones, California Department of Fish and Game

U.S EPA DETAILED COMMENTS ON THE FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS) FOR THE IVANPAH SOLAR ELECTRIC GENERATING SYSTEM PROJECT, SAN BERNARDINO COUNTY, CALIFORNIA, SEPTEMBER 3, 2010

Aquatic Resources

EPA remains concerned about the potential impact to approximately 2,000 ephemeral water segments on the site, which could result in direct or indirect impacts to wildlife functions and values provided by 198 acres of waters of the State. All drainage from surrounding mountains and alluvial fans collects in closed basins in the Ivanpah Valley. Ivanpah Dry Lake, a water of the Unites States, is located approximately 2 miles east and downslope of the Project area. Numerous ephemeral washes occur throughout the broad, coalescing alluvial fans that convey storm water runoff from the mountains toward Ivanpah Lake. As noted in our previous comments, natural washes perform a diversity of hydrologic and biogeochemical functions that directly affect the integrity and functional condition of higher-order waters downstream. Project design should minimize disruption to downstream flows by avoiding, to the maximum extent possible, changes to natural washes, excavating sediment, vegetation clearing, and grading of surface irregularities.

Although the proposed Project construction method, Low Impact Development, would be designed to minimize direct impacts to drainages, the FEIS indicates that all 2,000 ephemeral drainages are assumed to be impacted (pg. 4.3-130). Further, a scour analysis conducted to evaluate the potential of heliostat failure predicted the failure of more than 4,000 heliostats in a 10-year storm, and over 32,000 in a 100-year storm (pg. 4.10-24). While the FEIS indicates potential impacts from storm water and sedimentation are uncertain (pg. 1-29), it appears that some such impacts are expected, given the inclusion of measure Soil&Water-5 to monitor these potential impacts to equipment in the drainages.

EPA remains concerned about the increased erosion, migration of channels, local scour, and potential destabilization and damage that could result from installing equipment in drainages, and we strongly recommend maximum avoidance of these waters and high risk flood hazard zones. Heliostats placed in flood hazard areas are subject to scour, and could become unstable if the scour undermines their structural foundation, resulting in collapse and potentially damaging and polluting the washes and ground surface with mirror fragments and other debris. We reiterate our DEIS recommendation to minimize direct and indirect impacts, such as erosion, migration of channels, and local scour, by not placing heliostats in washes.

The California Department of Fish and Game (CDFG) has not provided concurrence on compensatory mitigation for waters of the State (pg. A.1-128 and A.1-196). Their final determination should play an important role in informing the decision on which alternative to approve and what commitments, terms, and conditions must accompany that approval.

Recommendations:

- The ROD and responses to comments on the FEIS should discuss all measures to avoid washes and placement of heliostats in drainages for the proposed Project and include the final details and requirements of a compensatory mitigation plan.
- In responses to FEIS comments and in the ROD, confirm removal of stormwater storage and containment areas and demonstrate that downstream flows will not be disrupted due to proposed changes to natural washes, excavation of sediment, or increased sedimentation due to increased vegetation clearing and grading of surface irregularities.
- Integrate fencing design into the ROD to ensure unimpeded hydrologic flow and sediment transport through the site.
- Minimize the number of road crossings over washes in order to minimize erosion, migration of channels, and scour. Road crossings should be designed to provide adequate flow through during large storm events. Commit to these measures in the ROD.
- Locate any remaining facilities outside of waters and commit to these measures in the ROD. Estimate acreages and number of species protected as a result of alternative design configurations.
- Incorporate vegetation removal and re-establishment conditions for construction into the ROD that minimize vegetation removal in drainages, avoid impacts to drainage bank contours, and require restoration using low-lying native species, as appropriate, that would not require trimming nor impede the Project's operation.
- Fully discuss, in responses to FEIS comments, how many heliostats will be installed in drainages for the final design. Impacts from such construction to waters of the State should be quantified. All analyses should be updated to include a full evaluation of impacts to waters, sedimentation, scouring, etc. from locating heliostats in flood hazard areas.
- Responses to FEIS comments should fully describe and quantify the benefits of the Low-Impact Development design that is described in the responses to comments (pg. A.1-190 and A.1-192).
- Discuss the availability of sufficient compensation lands to replace desert wash functions lost on the Project site.

Biological Resources

Detailed compensatory mitigation measures are determined on a project-specific basis, and must be contained in each project's environmental analyses and decision documents. The ROD should describe the final biological resources mitigation commitments and how they would be funded and implemented. The FEIS indicates the applicant could contribute to the National Fish and Wildlife Foundation (NFWF) Account to compensate for loss of desert tortoise habitat (pg. 4.3-111). For each species requiring compensatory mitigation, the ROD should state whether and how the Project applicant would use the NFWF Account, an in-lieu fee strategy, or an applicant-directed implementation strategy.

We understand CDFG has not yet provided concurrence on desert tortoise mitigation (pg. 4.3-3) and that the translocation plan is pending approval by CDFG and U.S. Fish and Wildlife Service (USFWS) (pg. A.1-128). Also, the Biological Opinion for desert tortoise has not been finalized and a jeopardy opinion could be issued if USFWS determines that substantial residual impacts remain, even with the application of additional mitigation measures (pg. A.1-134). These final determinations should play an important role in informing the decision on which alternative to approve and what commitments, terms, and conditions must accompany that approval.

We also remain concerned that additional botanical surveys have not been conducted to sufficiently compare and contrast the proposed alternatives. As the FEIS states, "the recent push for renewable energy development on private and public lands in the Mojave Desert region has put many of its special-status plants under far more immediate threat of local extinctions" (pg. 4.3-32). From our review of the SDEIS, it was apparent that sufficient survey information was not available to adequately compare alternatives, and it appears this is still the case in the FEIS. Detailed botanical surveys have still not been conducted on the Modified I-15 Alternative site (pg. 4.3-72), and uncertainty regarding the extent to which sensitive plants would be avoided on the entire Project site still exists (pg. 4.3-36). In the absence of the needed surveys, the FEIS indicates that, based on available information, the Modified I-15 Alternative includes fewer acres capable of sustaining rare plant communities, as compared to the proposed Project (pg. 4.3-72). Field surveys should be completed to confirm this assessment, and any additional avoidance or mitigation measures identified as a result of the new findings should be incorporated into the ROD.

Recommendations:

- Incorporate final information on the compensatory mitigation proposals (including quantification of acreages, estimates of species protected, costs to acquire compensatory lands, etc.) for unavoidable impacts to waters of the State and biological resources such as bighorn sheep, desert tortoise and golden eagles.
- A clear commitment to implement mitigation measures that result from consultation with the USFWS and CDFG to avoid and minimize adverse effects to sensitive biological resources, including habitat for desert tortoise, bighorn sheep, and golden eagles, should be included in the FEIS and, ultimately, the ROD.
- Clarify the rationale for a 3:1 mitigation ratio for tortoise habitat and how this relates to the mitigation ratio being applied for other renewable energy projects mitigating for desert tortoise impacts in California and Nevada.
- If the applicant is to acquire compensation lands, the location(s) and management plans for these lands should be fully disclosed in the ROD.
- Provide additional supporting documentation, in the responses to FEIS comments, for the final acreage identified as habitat for the bighorn sheep and golden eagles on the Project site, as well as compensation habitat acreage. Update BIO-19 and 28 as appropriate.
- Include the provisions or mechanism(s) in the ROD that will ensure that habitat selected for compensatory mitigation will be protected in perpetuity.

- Fully incorporate into the ROD any mitigation measures for avoidance of rare plants during Project construction and operation that result from recent or pending botanical surveys.
- All mitigation commitments should be included in the ROD.

Air Quality

We recognize the FEIS has included a discussion of the localized cumulative impacts of projects that may have overlapping construction periods; however, the scope of the cumulative impact analysis in the FEIS remains geographically limited to focus on cumulative impacts within six miles of the Project. Determination of the affected environment should not be based on a predetermined geographic area, but rather on perception of meaningful impacts for each resource at issue. EPA disagrees that there is never overlap for sources separated by six miles. This would depend on the emissions, size of the source, and release height, among other criteria. For example, in our air permitting process, we require modeling of the significant impact area plus 50 kilometers out. Due to the serious nature of the PM_{10} and 8-hour ozone conditions in the Mojave Desert Air Basin, the cumulative effects study area could be the entire air basin because ozone precursors are reactive over hundreds of miles.

Recommendation:

- The response to comments on the FEIS should provide the rationale for limiting the scope of the cumulative impacts analysis to the specified local area. If the Project would affect the ability of other foreseeable projects to be permitted, the ROD and responses to comments on the FEIS should discuss this.

Alternatives Analysis

We were encouraged by the addition of the Mitigated Ivanpah 3 and Modified I-15 Alternatives for various reasons, including the potential to avoid the northern 433 acres of the proposed Project site, which has the highest concentrations of desert tortoise and rare plants and is the area that presents the greatest risk of potential stormwater damage. Additionally, Modified I-15 Alternative's location closer to the highway would allow for the reconfiguration of the Ivanpah Unit 3 site, which would allow major project facilities to co-locate while avoiding impacts to the northern portion of the proposed Project area. As a consequence, movement corridors for wildlife between mountainous areas north of the Project area would remain broad and relatively undisturbed (pg. 4.3-131). We recommend that BLM reconsider the Modified I-15 alternative as the preferred alternative because much of this alternative site is located below 2,750 feet in elevation and provides habitat that is less diverse and of lower quality than that of the proposed Project (pg. 4.3-71). Additionally, the Modified I-15 Alternative would have fewer anticipated impacts to desert tortoise and maintain more connectivity than the proposed Project (pg. 4.3-80 and A.2-26), further reduce stormwater impacts (pg. 8-7), and potentially impact fewer washes (at pg. 4.3-27).

We note that the FEIS indicates that the Modified I-15 Alternative is outside BLM's jurisdiction to select (pg. A.2-29) and is not considered to meet the applicant's objective (pg.

A.2-29). In light of the Council on Environmental Quality's guidance regarding consideration of alternatives outside the jurisdiction of the lead agency (Council on Environmental Quality's (CEQ) Forty Questions[1], #2a and #2b), we continue to recommend that off and 'near'-site alternatives (including off-site locations and environmentally preferable on-site alternatives) be given full consideration under NEPA. CEQ Regulations for implementing NEPA (40 CFR, Parts 1500 - 1508) state that the alternatives section of an EIS should "rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly describe the reasons for their having been eliminated" (40 CFR, part 1502.14). "*In determining a reasonable range of alternatives, the focus is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical and feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant."* (CEQ Forty Questions, #2a)

Recommendation:

- Reconsider the Modified I-15 Alternative as the preferred alternative for the Project and fully justify the elimination of any less environmentally damaging alternatives than the alternative ultimately selected.

Other Comments

In light of the decision to separate CEC's and BLM's environmental review processes, the responses to FEIS comments should discuss the resolution procedure that will be employed if BLM's FEIS presents a preferred alternative that differs from what CEC approves through its process.

Recommendation:

- Clarify, in responses to FEIS comments, how BLM's and CEC's now separated alternative selection processes will be reconciled.

The SDEIS indicated that because the project proponent "did not apply for nor did it hold third party sales contracts for reduced project output at the time of the DEIS, the Reduced Acreage Alternative was not developed and evaluated in detail".

Recommendation:

- Discuss, in responses to FEIS comments, the changes that have resulted since the DEIS was issued that have resulted in the ability of the project proponent to consider a reduced project output.

[1]Forty Most Asked Questions Concerning CEQ's NEPA Regulations, 40 CFR Parts 1500-1508, Federal Register, Vol. 46, No. 55, March 23, 1981.