Memorandum

Date: December 14, 2009 Telephone: (916) 654-4679

To: Commissioner Jeffrey Byron, Presiding Member

Commissioner James D. Boyd, Associate Member

From: California Energy Commission – John Kessler, Project Manager

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Subject: STAFF'S RESPONSE TO THE APPLICANT'S FSA/DEIS COMMENTS IVANPAH SOLAR ELECTRIC GENERATING SYSTEM (07-AFC-5)

Exhibit 302

SUMMARY

Energy Commission staff is providing the following responses to the Applicant's comments to Conditions of Certification recommended in staff's and BLM's Final Staff Assessment/Draft Environmental Impact Statement (FSA/DEIS). The applicant provided comments to the Conditions of Certification in its testimony filed November 16, 2009 prior to the Prehearing Conference. This memo addresses topics the Committee has scheduled to address at the December 14, 2009 Evidentiary Hearing as listed in its draft agenda. Staff's responses to the applicant's and interveners comments for other topic areas are expected to be discussed during the FSA Workshop on December 15, 2009, and will be summarized in a subsequent memo following the workshop in order to reflect developments from those discussions.

Topics for Which Applicant and Interveners Did Not Have Comments

Topics listed on the Committee's December 14, 2009 Evidentiary Hearing agenda for which the applicant and interveners did not have any comments, and thus staff does not have any responses, are as follows:

Project Description
Compliance and Closure
Facility Design
Power Plant Efficiency
Public Health and Safety
Geological, Paleontological and Mineral Resources
Socioeconomics

Docket (07-AFC-5) Webworks POS

PROOF OF SERVICE (REVISED 11/23/09) FILED WITH ORIGINAL MAILED FROM SACRAMENTO ON 12/15/09

Topics for Which Applicant Did Have Comments

Staff's responses to the applicant's comments for topics listed on the Committee's December 14, 2009 Evidentiary Hearing agenda are as follows:

Transmission System Engineering

Staff accepts some, but not all of the applicant's proposed changes to Conditions of Certification TSE-5 and -6 as follows:

- TSE-5 The project owner shall ensure that the design, construction, and operation of the proposed transmission facilities will conform to all applicable LORS, including the requirements listed below. The project owner shall submit the required number of copies of the design drawings and calculations as determined by the CBO.
 - A. The Ivanpah 1 will be interconnected to the SCE grid via a 115 kV segment of 115kV, 477 kcmil-ACSR, approximately 5,800 feet long single circuit.

The Ivanpah #2 will be interconnected to the SCE grid via a 115 kV single circuit segment of 115-kV, 477 kcmil-ACSR, approximately 3900 feet long single circuit and an segment of 115kV, 477- kcmil, approximately 1400 feet long double circuit 115 kV generator tie-line.

The Ivanpah #3 115 kV generator tie line would be approximately 14,100 feet long, single circuit, 115kV line built with 1510 kemil ACSR and which would merge into a 115kV double circuit with the Ivanpah #2 generator tie line.

The proposed Ivanpah substation would use a double bus breaker- anda half configuration with 3-bays and 5 positions or other configuration as may be approved by SCE.

- B. The power plant outlet line shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95 and General Order 98 or National Electric Safety Code (NESC), Title 8 of the California Code and Regulations (Title 8), Articles 35, 36, and 37 of the "High Voltage Electric Safety Orders", California ISO standards, National Electric Code (NEC), and related industry standards.
- C. Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.
- D. Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards.

- E. The project conductors shall be sized to accommodate the full output from the project.
- F. Termination facilities shall comply with applicable SCE interconnection standards.
- G. The project owner shall provide to BLM's Authorized Officer and the CPM:
 - 1. The final Detailed Facility Study (DFS) including a description of facility upgrades, operational mitigation measures, and/or Special Protection System (SPS) sequencing and timing if applicable,
 - 2. Executed project owner, <u>Transmission System Operator</u> and California ISO <u>Facility Large Generator</u> Interconnection Agreement (LGIA).

<u>Verification:</u> At least 60 days prior to the start of construction of transmission facilities (or a lessor number of days mutually agree to by the project owner and CBO), the project owner shall submit to the CBO for approval:

- A. Design drawings, specifications, and calculations conforming with CPUC General Order 95 and General Order 98 or NESC; Title 8, California Code of Regulations, Articles 35, 36, and 37 of the "High Voltage Electric Safety Orders"; NEC; applicable interconnection standards, and related industry standards for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment.
- B. For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst-case conditions," and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or NESC; Title 8, California Code of Regulations, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders"; NEC; applicable interconnection standards, and related industry standards.
- C. Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in responsible charge, a route map, and an engineering description of equipment and the configurations covered by requirements **TSE-5** A) through G) above.
- D. The final Detailed Facility Study, including a description of facility upgrades, operational mitigation measures, and/or SPS sequencing and timing if applicable, shall be provided concurrently to BLM's Authorized Officer and the CPM.

¹ Worst-case conditions for the foundations would include for instance, a dead-end or angle pole.

- TSE-6 The project owner shall provide the following Notice to the California Independent System Operator (California ISO) prior to synchronizing the facility with the California transmission system <u>as required in the LGIA</u>
 - 1. At least one week prior to synchronizing the facility with the grid for testing, provide the California ISO a letter stating the proposed date of synchronization; and
 - 2. At least one business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the California ISO Outage Coordination Department.

<u>Verification:</u> The project owner shall provide copies of the California ISO <u>letter notice</u> to BLM's Authorized Officer and the CPM when it is sent to the California ISO. one week prior to initial synchronization with the grid. A report of the conversation with the California ISO shall be provided electronically to BLM's Authorized Officer and the CPM one day before synchronizing the facility with the California transmission system for the first time.

Transmission Line Safety and Nuisance

Staff accepts the applicant's comments as proposed to Conditions of Certification TLSN-1, -3 and -4.:

Hazardous Materials Management

While staff disagrees with most of the applicant's proposed changes as they would diminish the performance requirements of these standard conditions, staff agrees to the following:

The project owner shall prepare a site-specific Operation Security Plan for the operational phase, which and shall be made available to BLM's Authorized Officer and the CPM for review and approval. The project owner shall implement site security measures addressing physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below (as per NERC 2002).

The Operations Security Plan shall include the following:

- 1. Permanent full perimeter fence or wall, at least eight feet high around the Power Block and Solar Field;
- 2. Main entrance security gate, either hand operable or motorized;
- 3. Evacuation procedures;
- 4. Protocol for contacting law enforcement, BLM's Authorized Officer and the CPM in the event of suspicious activity or emergency <u>or conduct</u> endangering the facility, its employees, or contractors; and

- 5. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site;
- 6. a. A statement (refer to sample, attachment "A") signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to ascertain the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy;
 - b. A statement(s) (refer to sample, attachment "B") signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by BLM's Authorized Officer and the CPM after consultation with the project owner) that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by BLM's Authorized Officer and the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractor personnel that visit the project site. Background investigations shall be restricted to ascertain the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy;
- 7. Site access controls for employees, contractors, vendors, and visitors;
- 8. Closed Circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if separate from the control room) capable of viewing, at a minimum, the main entrance gate; and
- Additional measures to ensure adequate perimeter security consisting of either:
 - a. Security guard present 24 hours per day, seven days per week, **OR**
 - b. Power plant personnel on-site 24 hours per day, seven days per week and **all** of the following:
 - The CCTV monitoring system required in number 8 above shall include cameras that are able to pan, tilt, and zoom (PTZ), have low-light capability, are recordable, and are able to view 100% of the perimeter fence, the outside entrance to the control room, and the front gate from a monitor in the power plant control room; AND
 - 2) Perimeter breach detectors or on-site motion detectors.

The project owner shall fully implement the security plans and obtain BLM's Authorized Officer and CPM approval of any substantive modifications to the

security plans. BLM's Authorized Officer and the CPM may authorize modifications to these measures, or may require additional measures, such as protective barriers for critical power pant components (e.g., transformers, gas lines, compressors, etc.) depending on circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Council, after consultation with appropriate law enforcement agencies and the applicant.

<u>Verification:</u> At least 30 days prior to the initial receipt of hazardous materials on-site, the project owner shall notify BLM's Authorized Officer and the CPM that a site-specific Operations Site Security Plan is available for review and approval. In the Annual Compliance Report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and updated certification statements are appended to the Operations Security Plan. In the Annual Compliance Report, the project owner shall include a statement that the Operations Security Plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

The holder (project owner) shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b

<u>Verification:</u> A copy of any report required or requested by any Federal agency or State government<u>al entity</u> as a result of a reportable release or spill of any toxic substances shall be furnished to BLM's Authorized Officer and the CPM concurrent with the filing of the reports to with the involved Federal agency or State government<u>al entity.</u>

Waste Management

Staff accepts the applicant's comments as proposed to Conditions of Certification WASTE -3, -6 and -7 with the following two exceptions:

- Staff does not agree to delete the approval authority of BLM's
 Authorized Officer. Staff understands that BLM is firm about retaining
 its authority in the Conditions of Certification to review and approve
 documents filed by the applicant, similar to the role of the CPM in
 representing the Energy Commission.
- 2. Staff agrees to the applicant's proposed addition to WASTE-3 and -6 specifying that "The CPM shall approve or identify any material deficiencies in the [] Plan within 30 days following receipt of the Plan". However, the applicant should understand that staff will make its best effort to complete review within 30 days for this Condition of Certification and others, but staff cannot guarantee its review time nor can the project owner be allowed to proceed until it has received approval from BLM's Authorized Officer and the CPM.
- **WASTE-3** The project owner shall prepare a Construction Waste Management Plan for all wastes generated during construction of the facility and shall submit the plan to BLM's Authorized Officer and the CPM for review and approval. The plan shall contain, at a minimum, the following:

a description of all construction waste streams, including projections of frequency, amounts generated, and hazard classifications; and

management methods to be used for each waste stream, including temporary onsite storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans.

<u>Verification:</u> The project owner shall submit the Construction Waste Management Plan to BLM's Authorized Officer and the CPM for approval no less than 30 days prior to the initiation of construction activities at the site. <u>BLM's Authorized Officer and the CPM shall approve or identify any material deficiencies in the Construction Waste Management Plan within 30 days following receipt of the Plan.</u>

- **WASTE-6** The project owner shall prepare an Operation Waste Management Plan for all wastes generated during operation of the facility and shall submit the plan to BLM's Authorized Officer and the CPM for review and approval. The plan shall contain, at a minimum, the following:
 - a detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications;

- management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans;
- information and summary records of conversations with the local Certified Unified Program Agency and the Department of Toxic Substances Control regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary;
- a detailed description of how facility wastes will be managed and any contingency plans to be employed, in the event of an unplanned closure or planned temporary facility closure; and
- a detailed description of how facility wastes will be managed and disposed upon closure of the facility.

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

The project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year; provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan; and update the Operation Waste Management Plan as necessary to address current waste generation and management practices.

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

<u>Verification:</u> The project owner shall document all unauthorized releases and spills of hazardous substances, materials, or wastes that occur on the project property or related pipeline and transmission corridors. The documentation shall include, at a minimum, the following information: location of release; date and time of release; reason for release; volume released; amount of contaminated soil/material generated; how release was managed and material cleaned up; if the release was reported; to whom the release was reported; release corrective action and cleanup requirements <u>imposed placed</u> by regulating agencies; level of cleanup achieved and actions taken to prevent a

similar release or spill; and disposition of any hazardous wastes and/or contaminated soils and materials that may have been generated by the release. Copies of the unauthorized spill documentation shall be provided to BLM's Authorized Officer and the CPM within 30 days of the date the release was discovered.

Noise and Vibration

Staff accepts the applicant's comments as proposed to Conditions of Certification NOISE -4, -6 and -7 with the following exception:

Staff does not agree to delete the approval authority of BLM's
 Authorized Officer. Staff understands that BLM is firm about retaining
 its authority in the Conditions of Certification to review and approve
 documents filed by the applicant, similar to the role of the CPM in
 representing the Energy Commission.

NOISE RESTRICTIONS

- NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause noise complaints from residents of Primm, Nevada, or from the operator of the Primm Valley Golf Course. If legitimate project-related noise complaints are received from residents of Primm, the project owner shall perform a noise survey to demonstrate that noise levels due to plant operation do not exceed an average of 45 dBA Leg measured at the nearest residence of the community of Primm, Nevada. If legitimate project-related noise complaints are received from the operator of the Primm Valley Golf Course, the project owner shall perform a noise survey to demonstrate that noise levels due to plant operation do not exceed an average of 55 dBA Lea measured at the nearest boundary of the golf course. No new project puretone components creating pure-tone noises will be added to may be caused by the project unless they are balanced by other plant features. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.
 - A. The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to BLM's Authorized Officer and the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected location. The character of the plant noise shall be evaluated at the affected residential locations to determine the presence of pure tones or other dominant sources of plant noise.

<u>Verification:</u> The survey shall take place within 30 days of the receipt of the noise complaint, <u>unless the complaint has been resolved to the complaining party's satisfaction</u>. Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to BLM's Authorized Officer and the CPM. Included in the survey report will be a description of any additional mitigation measures (<u>if any</u>) necessary to achieve compliance with the above-listed noise limit and a schedule, subject to BLM's Authorized Officer and CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

Within 15 days of completion of the new survey, the project owner shall submit to BLM's Authorized Officer and the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

CONSTRUCTION TIME RESTRICTIONS

NOISE-6 Heavy equipment operation and noisy construction work that causes offsite annoyance as evidenced by the filing of a legitimate noise complaint shall be restricted to the 7:00 a.m. to 7:00 p.m. time period. relating to any project features shall be restricted to the times of day delineated below:

Weekdays and Saturdays 7:00 a.m. to 7:00 p.m.

No noisy construction work shall be performed on Sundays or federal holidays. Haul trucks and other engine-powered equipment shall be equipped with mufflers that meet all applicable regulations. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

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

STEAM BLOW RESTRICTIONS

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

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

dBA at the Primm Valley Golf Club (daytime), or 55 dBA (daytime)/45 dBA (nighttime) at the nearest residential location in Primm.

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

At least <u>fifteen (15)</u> days prior to any low-pressure continuous steam blow, the project owner shall submit to BLM's Authorized Officer and the CPM drawings or other information describing the process, including the noise levels expected and the projected time schedule for execution of the process.

Traffic and Transportation

At this time, staff can generally agree to the applicant's comments for two of the five Conditions of Certification for which the applicant proposed changes, TRANS-1 and -6. The applicant also provided comments to TRANS-2, -3 and -4, which staff requires further deliberation with the applicant before it can assume a position. With respect to TRANS-1, it should be noted that although carpooling is not necessary to reduce a significant impact, such service would reduce the potential for congestion to occur, particularly at I-15 on/off ramps.

TRAFFIC CONTROL PLAN

- **TRANS-1** Prior to start of construction of the ISEGS, the project owner shall prepare and implement a Traffic Control Plan (TCP) for ISEGS construction and operation traffic., containing a Traffic Management Plan The TCP shall addressing the movement of workers, vehicles, and materials, including arrival and departure schedules, and designated workforce and delivery routes. The plan shall include:
 - requiring at least 60% of construction workers to arrive to the site by bus transport (15 people per bus);
 - providing van or bus service to transport construction workers residing north of the site from the Las Vegas area to the site and back;
 - providing an incentive program to encourage construction workers to use van or bus service;
 - limiting truck deliveries to the project site on Fridays to mornings only so they occur before 12:00 noon to no more than 12 truck trips per day;
 - redirection of construction traffic with a flag person as necessary to ensure traffic safety and minimize interruptions to non-construction related traffic flow;

- signage, lighting, and traffic control device placement at the project construction site and laydown areas;
- signage along eastbound and westbound Yates Well Road and at the entrance of each of the I-15 northbound and southbound off-ramps at Yates Well Road notifying drivers of construction traffic throughout the duration of the construction period;
- signage and detours to redirect traffic from Colosseum Road during construction activities related to roadway realignment and pipeline installation in and across the Colosseum Road right of way;
- a Heavy Haul Plan addressing the transport and delivery of heavy and oversized loads requiring permits from Caltrans or other state and federal agencies;
- a work schedule and end-of-shift departure plan will be implemented to limit Friday departures from the site, traveling north to Las Vegas, and/or a carpool/vanpool incentive program to substantially reduce the number of project-related vehicles traveling from the project site to Las Vegas during Friday afternoon peak traffic hours, including limiting departures from the site to 12 or fewer vehicles every three minutes between 12:00 noon PM and 10:00 PM every Friday.

The project owner shall consult with the County of San Bernardino and the Caltrans District 8 office in the preparation and implementation of the Traffic Control Plan and shall submit the proposed Traffic Control Plan to the County of San Bernardino and the Caltrans District 8 office in sufficient time for review and comment and to BLM's Authorized Officer and the Energy Commission Compliance Project Manager (CPM) for review and approval prior to the proposed start of construction and implementation of the plan. BLM's Authorized Officer and the CPM shall review and approve the TCP or identify any material deficiencies within thirty (30) days of receipt. The project owner shall provide a copy of any written comments from the County of San Bernardino and the Caltrans District 8 office and any changes to the Traffic Control Plan to BLM's Authorized Officer and the CPM prior to the proposed start of construction.

<u>Verification</u>: At least 90 calendar days prior to the start of construction, including any grading or site remediation on the power plant site or its associated easements, the project owner shall submit the proposed traffic control plan to the County of San Bernardino and the Caltrans District 8 office for review and comment and to BLM's Authorized Officer and the CPM for review and approval. The project owner shall also provide BLM's Authorized Officer and the CPM with a copy of the transmittal letter to the County of San Bernardino and the Caltrans District 8 office requesting review and comment.

At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from either the County of San

Bernardino and the Caltrans District 8 office, along with any changes to the proposed traffic control plan to BLM's Authorized Officer and the CPM for review and approval.

(Staff does not currently accept the applicant's proposed changes to TRANS-2.)

REPAIR OF PUBLIC RIGHT-OF-WAY

TRANS-2 The project owner shall restore all public roads, easements, and rights-of-way that have been damaged due to project-related construction activities to original or near-original condition in a timely manner.

Prior to the start of site mobilization, the project owner shall consult with the County of San Bernardino and Caltrans District 8 and notify them of the proposed schedule for project construction. The purpose of this notification is to request that the County of San Bernardino and Caltrans consider postponement of public right-of-way repair or improvement activities in areas affected by project construction until construction is completed and to coordinate with the project owner regarding any concurrent construction-related activities that are planned or in progress and cannot be postponed.

<u>Verification:</u> At least 30 days prior to the start of mobilization, the project owner shall photograph or videotape all affected public roads, easements, and right-of-way segment(s) and/or intersections and shall provide BLM's Authorized Officer, the CPM, the affected local jurisdiction(s) and Caltrans (if applicable) with a copy of these images.

Within 60 calendar days after completion of construction, the project owner shall meet with BLM's Authorized Officer and the CPM, the County of San Bernardino and Caltrans District 8 to identify sections of public right-of-way to be repaired. At that time, the project owner shall establish a schedule to complete the repairs and to receive approval for the action(s). Following completion of any public right-of-way repairs, the project owner shall provide a letter signed by the County of San Bernardino and Caltrans District 8 stating their satisfaction with the repairs to BLM's Authorized Officer and the CPM.

(Staff does not currently accept the applicant's proposed changes to TRANS-3.)

HELIOSTAT POSITIONING PLAN AND MONITORING

TRANS-3 The project owner shall prepare a Heliostat Positioning Plan that would accomplish the following:

- Identify potential sensitive receptors including observers in aircraft, motorists on I-15, hikers in the Clark Mountains and other hikers and motorists who could access locations closer to the project;
- 2. Identify the heliostat movements and positions that could result in exposure of these observers to reflected solar radiation from heliostats;

- 3. Prepare a Heliostat Operating Plan that would avoid potential for human health and safety hazards at locations of sensitive receptors including the potential for momentary and continuous solar radiation exposure to occur greater than the thresholds of significance of :
 - a. MPE for momentary exposure (for a period of 0.25 second or less) is 10 kw/m²
 - b. MPE for continuous exposure (for a period greater than 0.25 second) is 1 kw/m²
- 4. Prepare a monitoring plan that would: a) verify that the Heliostat Operating Plan would avoid potential for human health and safety hazards at locations of sensitive receptors, and b) provide requirements and procedures to document, investigate and resolve complaints regarding glare.
- 5. The monitoring plan should be coordinated with the FAA, U.S. Department of the Navy, CalTrans, and Clark County Department of Aviation in relation to the proposed Southern Nevada Supplemental Airport and be updated on an annual basis for the first 5 years, and at 2-year intervals thereafter for the life of the project.

<u>Verification</u>: Within 90 days before commercial operation of any of the three ISEGS power plants, the project owner shall submit the Heliostat Positioning Plan to the CPM for review and approval. The project owner shall also submit the plan to CalTrans, FAA, and the Clark County Department of Aviation for review and comment and forward any comments received to the CPM.

(Staff does not currently accept the applicant's proposed changes to TRANS-4.)

VERIFICATION OF POWER TOWER RECEIVER LUMINANCE AND MONITORING

TRANS-4 Upon commercial operation of each of the three ISEGS power plants (Ivanpah 1, 2 and 3) and at intervals of every 5 years thereafter, the project owner shall evaluate the intensity of luminance of light reflected from all four sides (north, south, east and west) of the power tower receivers, as measured from the power plant boundary, nearest road and at distances of 200, 500, 1,000 and 1,500 meters from the power tower receivers for each power tower. The measurements are to ensure that luminance does not exceed the standard of 89 cd/m² at the nearest road or power plant boundary.

The project owner shall measure solar radiation and luminance with an illuminance meter, photometer, or similar device.

If luminance is identified to be above 89 cd/m² at any power plant boundary or nearest road location, the project owner shall propose mitigation measures for

review by BLM's Authorized Officer and the CPM, and upon receiving both approvals, shall implement project modifications to maintain luminance within the threshold of 89 cd/m² at the nearest road and power plant boundary. The modifications may include surface treatment or material changes to increase absorption and reduce reflectivity of the power tower receivers or operational controls, such as reducing the number of heliostats reflecting toward the power tower receiver that is identified as the source of that light. The project owner shall also prepare a monitoring plan that provides requirements and procedures to document, investigate and resolve complaints regarding glare.

<u>Verification</u>: Within 30 days following commercial operation of each of the three ISEGS power plants (Ivanpah 1, 2 and 3) during peak load conditions (95% or greater of the power plant rated capacity) and at intervals of every 5 years thereafter, the project owner shall conduct luminance measurements as follows:

- 1. The luminance measurement shall be conducted for all four sides (north, south, east and west) of the power tower receivers, as measured from the power plant boundary, nearest road and at distances of 200, 500, 1,000 and 1,500 meters from the power tower receivers for each power tower.
- 2. Within 15 days after completing each of the surveys, the project owner shall submit a summary report of the survey to FAA, U.S. Department of the Navy, CalTrans, and Clark County Department of Aviation for review and comment, and to BLM's Authorized Officer and the CPM for review and approval.
- 3. If the measurements reveal that luminance exceeds 89 cd/m² at any of the nearest roads and power plant boundaries to each north, south, east and west face of each power tower, the survey report shall include a description of proposed mitigation measures necessary to achieve compliance, and the project owner shall also propose a schedule, subject to BLM Authorized Office and CPM approval, for implementing those measures.
- 4. Within 30 days following the implementation of the mitigation measures, the project owner shall repeat the luminance measurements and prepare a supplemental survey report for review and comment to FAA, U.S. Department of the Navy, CalTrans, and Clark County Department of Aviation, and for review and approval by BLM's Authorized Officer and the CPM.
- 5. This process would be repeated as necessary until the project complies with the luminance limit of not exceeding 89 cd/m² at any of the nearest roads and power plant boundaries to each north, south, east and west face of each power tower.

The field measurements and verification process are to be repeated at five-year intervals following commercial operation for the life of the project as applicable to each of the three ISEGS power plants.

The five-year field measurement and verification process and investigation of any complaints related to glare shall be coordinated with the FAA, U.S. Department of the

Navy, CalTrans, and Clark County Department of Aviation as applicable, and shall document, address and satisfactorily resolve any complaints as determined by BLM's Authorized Officer and the CPM.

The project owner shall prepare a monitoring plan that provides requirements and procedures to document, investigate and resolve complaints regarding glare, and report these to BLM's Authorized Officer and the CPM within 10 days of receiving a complaint, as part of the Annual Compliance Report, and as part of the Five-Year Field Measurement and Verification Report.

FAA NOTIFICATION

TRANS-6 Prior to start-up and testing activities of the plant and all related facilities, the project owner shall coordinate with the FAA to notify all pilots using the airspace in the vicinity of the ISEGS of potential air hazards from turbulence. These activities would include, but not be limited to: 1) issuing a notice to airmen (NOTAM of the identified air hazard, 2) updating all applicable FAA-approved airspace charts to indicate that plume hazards could exist up to an altitude of 1,350 feet above the ground surface, and 3) requesting FAA to require pilots to avoid direct overflight of the ISEGS site at or below this altitude during daylight hours.

<u>Verification</u>: At least 60 days prior to start of project operation, the project owner shall submit to BLM's Authorized Officer and the CPM for review a letter from the FAA showing compliance with these measures. <u>These notification activities</u> would include, but not be limited to: 1) issuing a notice to airmen (NOTAM) of the identified air hazard, 2) updating all applicable FAA-approved airspace charts to indicate that plume hazards could exist up to an altitude of 1,350 feet above the ground surface, and 3) requesting FAA to require pilots to avoid direct overflight of the ISEGS site at or below this altitude during daylight hours.

Visual Resources

The applicant proposed changes to Conditions of Certification VIS-1, -2, and -4, and deletion of VIS-3. Staff generally agrees with the applicant's proposed changes including the deletion of VIS-3, with some minor modifications including retaining the authority of BLM's Authorized Officer for review and approval of the applicant's filings similar to the CPM's authority in representing the Energy Commission. Staff's current responses to the applicant's proposed changes are as follows, and staff may be willing to consider several more of the applicant's changes following deliberations in the hearing or in the workshop.

SURFACE TREATMENT OF PROJECT STRUCTURES AND BUILDINGS

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

The project owner shall submit for CPM review and approval, a specific Surface Treatment Plan that will satisfy these requirements. The treatment plan shall include:

- A. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes;
- B. A list of each major project structure, building, tank, pipe, and wall; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number; or according to a universal designation system;
- C. One set of color brochures or color chips showing each proposed color and finish;
- D. A specific schedule for completion of the treatment; and
- E. A procedure to ensure proper treatment maintenance for the life of theproject.

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan by BLM's Authorized Officer and the CPM. Subsequent modifications to the treatment plan are prohibited without BLM's Authorized Officer and CPM approval.

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

The treatment plan shall include:

- A. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes;
- B. A list of each major project structure, building, tank, pipe, and wall; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number; or according to a universal designation system;
- C. One set of color brochures or color chips showing each proposed color and finish;
- D. A specific schedule for completion of the treatment; and
- E. A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan by BLM's Authorized Officer and the CPM. Subsequent modifications to the treatment plan are prohibited without BLM's Authorized Officer and CPM approval.

Prior to the start of commercial operation, the project owner shall notify BLM's Authorized Officer and the CPM that surface treatment of all listed structures and buildings has been completed and they are ready for inspection and shall submit to each one set of electronic color photographs from the same key observation points identified in (d) above. The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify a): the condition of the surfaces of all structures and buildings at the end of the reporting year; b) maintenance activities that occurred during the reporting year; and c) the schedule of maintenance activities for the next year.

LANDSCAPE SCREENING OF GOLF COURSE

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

fields. Upon approval by BLM's Authorized Officer and the CPM and golf course owner, the project owner shall submit to BLM's Authorized Officer and the CPM for review and approval and simultaneously to the golf course owner for review and comment a landscaping plan whose proper implementation will satisfy these requirements. The plan shall include:

- A. A detailed landscape, grading, and irrigation plan, at a reasonable scale. The plan shall demonstrate how the requirements stated above shall be met. The plan shall provide a detailed installation schedule demonstrating installation of as much of the landscaping as early in the construction process as is feasible in coordination with project construction.
- B. A list (prepared by a qualified professional arborist familiar with local growing conditions) of proposed species, specifying installation sizes, growth rates, expected time to maturity, expected size at five years and at maturity, spacing, number, availability, and a discussion of the suitability of the plants for the site conditions and mitigation objectives, with the objective of providing the widest possible range of species from which to choose;
- C. Maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal for the life of the project;
- D. A procedure for monitoring for and replacement of unsuccessful plantings for the life of the project; and
- E. One set each for BLM's Authorized Officer and the CPM of 11"x17" color photosimulations of the proposed landscaping at five years and twenty years after planting, as viewed from adjoining segments of I-15.

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

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

- A. A detailed landscape, grading, and irrigation plan, at a reasonable scale. The plan shall demonstrate how the requirements stated above shall be met. The plan shall provide a detailed installation schedule demonstrating installation of as much of the landscaping as early in the construction process as is feasible in coordination with project construction.
- B. A list (prepared by a qualified professional arborist familiar with local growing conditions) of proposed species, specifying installation sizes, growth rates,

expected time to maturity, expected size at five years and at maturity, spacing, number, availability, and a discussion of the suitability of the plants for the site conditions and mitigation objectives, with the objective of providing the widest possible range of species from which to choose;

- C. <u>Maintenance procedures</u>, including any needed irrigation and a plan for routine annual or semi-annual debris removal for the life of the project;
- D. A procedure for monitoring for and replacement of unsuccessful plantings for the life of the project; and
- E. One set each for BLM's Authorized Officer and the CPM of 11"x17" color photosimulations of the proposed landscaping at five years and twenty years after planting, as viewed from adjoining segments of I-15.

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

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

The project owner shall report landscape maintenance activities, including replacement of dead or dying vegetation, for the previous year of operation in each Annual Compliance Report.

REVEGETATION OF DISTURBED SOIL AREAS

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

Verification: Refer to Condition of Certification BIO-14.

TEMPORARY AND PERMANENT EXTERIOR LIGHTING

VIS-4 To the extent feasible, consistent with safety and security considerations, the project owner shall design and install all permanent exterior lighting and all temporary construction lighting such that a) lamps and reflectors are not visible from beyond the project site, including any off-site security buffer areas; b) lighting does not cause excessive reflected glare; c) direct lighting does not illuminate the nighttime sky, except for required FAA aircraft safety lighting; d) illumination of the project and its immediate vicinity is minimized, and e) the plan complies with local policies and ordinances. The project owner shall submit to BLM's Authorized Officer and the CPM for review and

approval and simultaneously to the County of San Bernardino for review and comment a lighting mitigation plan. that includes the following:

- A. Location and direction of light fixtures shall take the lighting mitigation requirements into account;
- B. Lighting design shall consider setbacks of project features from the site boundary to aid in satisfying the lighting mitigation requirements;
- C. Lighting shall incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated;
- D. Light fixtures that are visible from beyond the project boundary shall have cutoff angles that are sufficient to prevent lamps and reflectors from being visible beyond the project boundary, except where necessary for security;
- E. All lighting shall be of minimum necessary brightness consistent with operational safety and security; and
- F. Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.

<u>Verification:</u> At least 90 days prior to ordering any permanent exterior lighting or temporary construction lighting, the project owner shall contact BLM's Authorized Officer and the CPM to discuss the documentation required in the lighting mitigation plan. At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to BLM's Authorized Officer and the CPM for review and approval and simultaneously to the County of San Bernardino for review and comment a lighting mitigation plan. If BLM's Authorized Officer and the CPM determine that the plan requires revision, the project owner shall provide to BLM's Authorized Officer and the CPM a revised plan for review and approval by BLM's Authorized Officer and the CPM. BLM's Authorized Officer and the CPM shall approve or identify any material deficiencies in the Lighting Plan within 30 days following receipt of the Plan. The Lighting Plan shall include the following:

- A. <u>Location and direction of light fixtures shall take the lighting mitigation</u> requirements into account;
- B. <u>Lighting design shall consider setbacks of project features from the site boundary to aid in satisfying the lighting mitigation requirements;</u>
- C. <u>Lighting shall incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated;</u>

- D. <u>Light fixtures that are visible from beyond the project boundary shall have cutoff angles that are sufficient to prevent lamps and reflectors from being visible beyond the project boundary, except where necessary for security;</u>
- E. All lighting shall be of minimum necessary brightness consistent with operational safety and security; and
- F. Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.

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

Prior to commercial operation, the project owner shall notify BLM's Authorized Officer and the CPM that the lighting has been completed and is ready for inspection. If after inspection, BLM's Authorized Officer and the CPM notify the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify BLM's Authorized Officer and the CPM that the modifications have been completed and are ready for inspection.

Within 48 hours of receiving a lighting complaint, the project owner shall provide BLM's Authorized Officer and the CPM with a complaint resolution form report as specified in the Compliance General Conditions including a proposal to resolve the complaint, and a schedule for implementation. The project owner shall notify BLM's Authorized Officer and the CPM within 48 hours after completing implementation of the proposal. A copy of the complaint resolution form report shall be submitted to BLM's Authorized Officer and the CPM within 30 days.



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

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APPLICATION FOR CERTIFICATION
FOR THE IVANPAH SOLAR ELECTRIC
GENERATING SYSTEM

DOCKET NO. 07-AFC-5 PROOF OF SERVICE (Revised 11/23/09)

APPLICANT.

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DECLARATION OF SERVICE

I, <u>Maria Santourdjian</u>, declare that on <u>December 15</u>, 2009, I served and filed copies of the attached, <u>Staff's Response to the Applicant's FSA/DEIS Comments – Exhibit 302</u> dated, <u>December 14, 2009</u>. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:

[www.energy.ca.gov/sitingcases/ivanpah].

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

(Check all that Apply)

x sent electronically to all email addresses on the Proof of Service list; x by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses NOT marked "email preferred." AND FOR FILING WITH THE ENERGY COMMISSION: x sending an original paper copy and one electronic copy, mailed and emailed respectively, to address below (preferred method); OR depositing in the mail an original and 12 paper copies, as follows:		FOR SERVICE TO ALL OTHER PARTIES:
postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses NOT marked "email preferred." AND FOR FILING WITH THE ENERGY COMMISSION: x sending an original paper copy and one electronic copy, mailed and emailed respectively, to address below (preferred method); OR	Х	sent electronically to all email addresses on the Proof of Service list;
FOR FILING WITH THE ENERGY COMMISSION: x sending an original paper copy and one electronic copy, mailed and emailed respectively, to address below (<i>preferred method</i>); OR	Х	postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those
sending an original paper copy and one electronic copy, mailed and emailed respectively, to address below (<i>preferred method</i>); OR	AND	
address below (<i>preferred method</i>); OR		FOR FILING WITH THE ENERGY COMMISSION:
	Х	sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (<i>preferred method</i>);
depositing in the mail an original and 12 paper copies, as follows:	OR	
		depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. <u>07-AFC-5</u> 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.

Original Signature in Dockets Maria Santourdjian