

Memorandum

DOCKET	
07-AFC-5	
DATE	JAN 04 2010
RECD.	JAN 04 2010

Date: January 4, 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
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: **STAFF’S PROPOSED REVISIONS TO CONDITIONS OF CERTIFICATION AND LIMITED FSA/DEIS TEXT EDITS TO SOIL & WATER IVANPAH SOLAR ELECTRIC GENERATING SYSTEM (07-AFC-5) Exhibit 303**

SUMMARY

Energy Commission staff is providing 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 topics were discussed in the FSA Workshop on December 22, 2009, and staff believes it has achieved agreement with the applicant on the following topics as included herein (with any exceptions noted):

- Air Quality
- Hazardous Materials (updated since staff’s Exhibit 302 filing on December 14, 2009)
- Land Use
- Soil and Water Resources (Staff and applicant are still discussing **SOIL&WATER-4**)
- Traffic and Transportation (Staff and applicant are still discussing **TRANS-4**)
- Waste Management (updated since staff’s Exhibit 302 filing on December 14, 2009)
- Worker Safety and Fire Protection

Staff’s proposed revisions to Biological Resources Conditions of Certification are included in Exhibit 305 dated January 4, 2010.

BACKGROUND

The applicant provided comments to the Conditions of Certification in its testimony filed November 16, 2009. Staff previously filed responses to some of the applicant’s proposed changes to Conditions of Certification in its Exhibit 302 filed on December 14, 2009. As a recap of staff’s response to the Applicant’s proposed changes, staff provides the following summary of the topics addressed in Exhibit 302 and notes where there are any updates to these same topics in this Exhibit 303:

PROOF OF SERVICE (REVISED 11/23/10) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 1/4/10

MF

- Transmission System Engineering – Staff previously accepted some of the applicant’s proposed changes to TSE-5 and all of the changes to TSE-6. Staff does not propose any further changes.
- Transmission Line Safety and Nuisance - Staff previously accepted the applicant’s changes to Conditions of Certification TLSN-1, -3 and -4 as proposed.
- Hazardous Materials Management - Staff previously accepted some of the applicant’s proposed changes to HAZ-5 and -6, and staff has accepted further edits, all of which are reflected in this Exhibit 303)
- Waste Management - Staff does not accept any of the applicant’s proposed changes to WASTE-3 and -6. Staff has previously accepted the applicant’s proposed change to WASTE-7as included in this Exhibit 303.
- Noise and Vibration - Staff previously accepted the applicant’s changes to Conditions of Certification NOISE-4, -6 and -7 as proposed except for not agreeing to delete the approval authority of BLM’s Authorized Officer.
- Traffic and Transportation - Staff previously accepted some of the applicant’s proposed changes to TRANS-1 and -6, and staff has since accepted and proposed further edits to TRANS-1 and new edits to TRANS-2, -3 and -4, all of which are reflected in this Exhibit 303
- Visual Resources - Staff previously accepted some of the applicant’s proposed changes to VIS-1, -2 and -4 and the deletion of VIS-3. Staff does not propose any further changes.

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

Proposed Changes to Conditions of Certification for Topics Addressed in This Filing

Air Quality

Staff condition **AQ-SC3** includes minor revisions to the specified fugitive dust mitigation measures and moves the list of the specified fugitive dust measures into the condition's verification section. To clearly show the minor revisions to the mitigation measures only the revisions are shown with underline in the Verification section.

AQ-SC3 Construction Fugitive Dust Control: The AQCMM shall submit documentation to the BLM's Authorized Officer and CPM in each Monthly Compliance Report that demonstrates compliance with the Air Quality Construction Mitigation Plan (AQCMP) following mitigation measures for the purposes of preventing all fugitive dust plumes from leaving the project. Any deviation from the AQCMP following mitigation measures shall require prior BLM Authorized Officer and CPM notification and approval.

- ~~A. The main access roads through the facility to the power block areas will be paved prior to initiating construction in the main power block area, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved prior to taking initial deliveries.~~
- ~~B. All unpaved construction roads and unpaved operational site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be both as efficient or more efficient for fugitive dust control as ARB approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation. All other disturbed areas in the project and linear construction sites shall be watered as frequently as necessary during grading and stabilized with a non-toxic soil stabilizer or soil weighting agent to comply with the dust mitigation objectives of Condition of Certification **AQ-SC4**. The frequency of watering can be reduced or eliminated during periods of precipitation.~~
- ~~C. No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.~~
- ~~D. Visible speed limit signs shall be posted at the construction site entrances.~~
- ~~E. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.~~

- ~~F. Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.~~
- ~~G. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.~~
- ~~H. All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM and BLM Authorized Officer..~~
- ~~I. Construction areas adjacent to any paved roadway shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this condition does not conflict with the requirements of the SWPPP.~~
- ~~J. All paved roads within the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.~~
- ~~K. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.~~
- ~~L. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.~~
- ~~M. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.~~
- ~~N. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.~~

Verification: The AQCM shall provide the BLM's Authorized Officer and the CPM a Monthly Compliance Report (**COMPLIANCE-6**) to include the following to demonstrate control of fugitive dust emissions:

- A. a summary of all actions taken to maintain compliance with this condition;
 - B. copies of any complaints filed with the District in relation to project construction; and
 - C. any other documentation deemed necessary by the BLM Authorized Officer, CPM, and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.
1. The following fugitive dust mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by **AQ-SC2**.
- A. The main access roads through the facility to the power block areas will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction in the main power block area, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved prior to taking initial deliveries.
 - B. All unpaved construction roads and unpaved operational site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be both as efficient or more efficient for fugitive dust control as ARB approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation. All other disturbed areas in the project and linear construction sites shall be watered as frequently as necessary during grading; and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, in order to comply with the dust mitigation objectives of Condition of Certification **AQ-SC4**. The frequency of watering can be reduced or eliminated during periods of precipitation.
 - C. No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.
 - D. Visible speed limit signs shall be posted at the construction site entrances.
 - E. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.
 - F. Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
 - G. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.

- H. All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM and BLM Authorized Officer.
- I. Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this condition does not conflict with the requirements of the SWPPP.
- J. All paved roads within the construction site shall be swept ~~at least twice daily~~ or as needed (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.
- K. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept ~~at least twice daily~~ as needed (or less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.
- L. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.
- M. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.
- N. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

Staff condition **AQ-SC5** includes minor revisions to the specified off-road diesel equipment mitigation measures and moves the list of the specified measures into the condition's verification section. To clearly show the minor revisions to the mitigation measures only the revisions are shown with underline.

AQ-SC5 Diesel-Fueled Engine Control: The AQCMM shall submit to the CPM; in the Monthly Compliance Report MCR, a construction mitigation report that demonstrates compliance with the Air Quality Construction Mitigation Plan

~~(AQCMP)following mitigation measures for purposes of controlling diesel construction-related emissions. Any deviation from the AQCMPfollowing mitigation measures shall require prior and CPM notification and approval.~~

- ~~a. All diesel fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.~~
- ~~b. All construction diesel engines with a rating of 50 hp or higher shall meet, at a minimum, the Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. This good faith effort shall be documented with signed written correspondence by the appropriate construction contractors along with documented correspondence with at least two construction equipment rental firms. In the event that a Tier 3 engine is not available for any off-road equipment larger than 100 hp, that equipment shall be equipped with a Tier 2 engine, or an engine that is equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 2 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" for the following, as well as other, reasons:
 - ~~1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question to Tier 2 equivalent emission levels and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or~~
 - ~~2. The construction equipment is intended to be on site for 5 days or less.~~
 - ~~3. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not possible.~~~~
- ~~c. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item "b" occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists :
 - ~~1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive~~~~

~~increase in back pressure.~~

- ~~2. The retrofit control device is causing or is reasonably expected to cause engine damage.~~
- ~~3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.~~
- ~~4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.~~

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

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

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

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

- A. A summary of all actions taken to maintain compliance with this condition;
- B. A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained; and
- C. Any other documentation deemed necessary by the CPM, and the AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

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

- a. All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.
- b. All construction diesel engines with a rating of 50 hp or higher shall meet, at a minimum, the Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of

equipment. ~~This good faith effort shall be documented with signed written correspondence by the appropriate construction contractors along with documented correspondence with at least two construction equipment rental firms.~~ In the event that a Tier 3 engine is not available for any off-road equipment larger than 100 hp, that equipment shall be equipped with a Tier 2 engine, or an engine that is equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 2 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is “not practical” for the following, as well as other, reasons.

1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question to Tier 2 equivalent emission levels and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or
 2. The construction equipment is intended to be on site for 5 days or less.
 3. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical possible.
- c. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item “b” occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists :
1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.
 2. The retrofit control device is causing or is reasonably expected to cause engine damage.
 3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.
 4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.
- d. All heavy earth-moving equipment and heavy duty construction-related trucks with engines meeting the requirements of (b) above shall be

properly maintained and the engines tuned to the engine manufacturer's specifications.

- e. All diesel heavy construction equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement.
- f. Construction equipment will employ electric motors when feasible.

AQ-SC6 The project owner, when obtaining dedicated on-road or off-road vehicles for mirror washing activities and other facility maintenance activities, shall only obtain new model year vehicles that meet California on-road vehicle emission standards or appropriate U.S.EPA/California off-road engine emission standards for the model year when obtained.

~~Other vehicle/fuel types may be allowed assuming that the emission profile for those vehicles, including fugitive dust generation emissions, is comparable to the vehicles types identified in this condition.~~

Verification: At least 60 days prior to the start commercial operation ~~production~~, the project owner shall submit to the CPM a copy of the plan that identifies the size and type of the on-site vehicle and equipment fleet and the vehicle and equipment purchase orders and contracts and/or purchase schedule. The plan shall be updated every other year and submitted in the Annual Compliance Report (**COMPLIANCE-7**).

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

- A. describes the active operations and wind erosion control techniques such as windbreaks and chemical dust suppressants, including their ongoing maintenance procedures, that shall be used on areas that could be disturbed by vehicles or wind anywhere within the project boundaries; and
- B. identifies the location of signs throughout the facility that will limit traveling on unpaved portion of roadways to solar equipment maintenance vehicles only. In addition, vehicle speed shall be limited to no more than 10 miles per hour on these unpaved roadways, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.

The site operations fugitive dust control plan shall include the use of durable non-toxic soil stabilizers on all regularly used unpaved roads and disturbed off-road areas, or alternative methods for stabilizing disturbed off-road areas, within the project boundaries, and shall include the inspection and maintenance procedures that will be undertaken to ensure that the unpaved

roads remain stabilized. The soil stabilizer used shall be a non-toxic soil stabilizer or soil weighting agent that can be determined to be both as efficient or more efficient for fugitive dust control as ARB approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation.

The performance and application of the fugitive dust controls shall also be measured against and meet the performance requirements of condition **AQ-SC4**. The performance requirements of **AQ-SC4** shall also be included in the Operations Dust Control Plan.

Verification: At least 60 days prior to start of commercial operation, the project owner shall submit to the BLM's Authorized Officer and the CPM for review and approval a copy of the site Operations Dust Control Plan that identifies the dust and erosion control procedures, including effectiveness and environmental data for the proposed soil stabilizer, that will be used during operation of the project and that identifies all locations of the speed limit signs. At least 60 days after commercial operation, the project owner shall provide to the BLM's Authorized Officer and the CPM a report identifying the locations of all speed limit signs, and a copy of the project employee and contractor training manual that clearly identifies that project employees and contractors are required to comply with the dust and erosion control procedures and on-site speed limits.

AQ-SC9 The emergency generator and fire pump engines procured for this project will meet or exceed the NSPS Subpart IIII emission standards for the model year that corresponds to their date of purchase.

Verification: The project owner shall submit the emergency engine specifications to the CPM prior to engine installation. ~~at least 30 days prior to purchasing the engines for review and approval.~~

Hazardous Materials Management

Staff condition **HAZ-4** has been modified to shift the specifications for the Construction Security Plan from the condition to the verification. Staff condition **HAZ-5** includes minor revisions and moves the list of specifications for the Operation Security Plan into the condition's verification section. To clearly show the minor revisions to the specifications, only the revisions are shown with underline in the **HAZ-5** verification section.

HAZ-4 At least thirty (30) days prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to BLM's Authorized Officer and the CPM for review and approval. ~~The Construction Security Plan shall include the following:~~

- ~~1. Perimeter security consisting of fencing enclosing the construction area;~~
- ~~2. Security guards;~~
- ~~3. Site access control consisting of a check-in procedure or tag system for construction personnel and visitors;~~
- ~~4. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site;~~
- ~~5. Protocol for contacting law enforcement, BLM's Authorized Officer and the CPM in the event of suspicious activity or emergency; and~~
- ~~6. Evacuation procedures.~~

Verification: At least thirty (30) days prior to commencing construction, the project owner shall notify BLM's Authorized Officer and the CPM that a site-specific Construction Security Plan is available for review and approval. The Construction Security Plan shall include the following:

1. Perimeter security consisting of fencing enclosing the construction area;
2. Security guards;
3. Site access control consisting of a check-in procedure or tag system for construction personnel and visitors;
4. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site;
5. Protocol for contacting law enforcement, BLM's Authorized Officer and the CPM in the event of suspicious activity or emergency; and
6. Evacuation procedures

HAZ-5 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 or conduct 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~~
- ~~9. 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:
 - ~~1) 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 plant 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.~~

Verification: 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 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 or conduct 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
9. 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:
 - 1) 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 plant 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.

- HAZ-6** 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

Verification: A copy of any report required or requested by any Federal agency or State governmental entity 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 governmental entity.

LAND USE

LAND-2 ~~The applicant's Project Description and associated construction plans shall be revised to~~ project owner shall allow a minimum 20-foot buffer setback between the (1) security and tortoise exclusion fence, and (2) the proposed ROW boundary. Once the fencing is constructed, all inspection, monitoring, and maintenance activities required outside of the fencing will occur on lands included within this buffer setback area and ROW boundaries. ~~Should project activities requiring the use of an area larger than the buffer be required (such as installation of new drainage structures one acre or more in size), the project owner shall make application to BLM for a Temporary Use Permit (TUP) or additional ROW Grant, and to the Energy Commission for a license amendment prior to conducting any activities. Authorization of a TUP or additional ROW Grant may require additional environmental evaluation pursuant to the National Environmental Policy Act and the California Environmental Quality Act.~~

Verification: At least thirty (30) 60 days prior to the start of construction, the project owner shall provide BLM's Authorized Officer and the CPM with a revised project description and construction plans specifying the inclusion of a setback area. The setback area shall be a minimum 20 feet wide the buffer zone within the ROW boundaries between the tortoise fence and the ROW boundary on the upslope boundary of the ROW, and a minimum 8-12 foot wide between the tortoise fence and ROW boundary on side and downslope boundaries. The project owner shall also provide BLM's Authorized Officer and the CPM with certification acknowledging that the ISEGS development and all related construction, operation, maintenance and closure activities are to be conducted within the ROW boundaries for the life of the project.

SOIL AND WATER RESOURCES

DRAINAGE EROSION AND SEDIMENTATION CONTROL PLAN

SOIL & WATER-1: Prior to site mobilization, the project owner shall obtain both BLM's Authorized Officer and the CPM's approval for a site specific DESCPC that ensures protection of water quality and soil resources of the project site and all linear facilities for both the construction and operation phases of the project. This plan shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, and identify all monitoring and maintenance activities. The project owner shall complete all ~~necessary~~-engineering plans, reports, and documents necessary for both BLM's Authorized Officer and the CPM to conduct a review of the proposed project and provide a written evaluation as to whether the proposed grading, drainage improvements, and flood management activities comply with all requirements presented herein. The plan shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1** and shall contain the following elements:

Vicinity Map: A map shall be provided indicating the location of all project elements with depictions of all major geographic features to include watercourses, washes, irrigation and drainage canals, major utilities, and sensitive areas.

Site Delineation: The site and all project elements shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, underground utilities, roads, and drainage facilities. Adjacent property owners shall be identified on the plan maps. All maps shall be presented at a legible scale

Drainage: The DESCPC shall include the following elements:

- a. Topography. Topography for offsite areas are required to define the existing upstream tributary areas to the site and downstream to provide enough definition to map the existing storm water flow and flood hazard. Spot elevations shall be required where relatively flat conditions exist.
- b. Proposed Grade. Proposed grade contours shall be shown at a scale appropriate for delineation of onsite ephemeral washes, drainage ditches, and tie-ins to the existing topography.
- c. Hydrology. Existing and proposed hydrologic calculations for onsite areas and offsite areas that drain to the site; include maps showing the drainage area boundaries and sizes in acres, topography and typical overland flow directions, and show all existing, interim, and proposed drainage infrastructure and their intended direction of flow.

- d. Hydraulics. Provide hydraulic calculations to support the selection and sizing of the onsite drainage network, diversion facilities and BMPs.

Watercourses and Critical Areas: The DESCOP shall show the location of all onsite and nearby watercourses including washes, irrigation and drainage canals, and drainage ditches, and shall indicate the proximity of those features to the construction site. Maps shall identify high hazard flood prone areas.

Clearing and Grading: The plan shall provide a delineation of all areas to be cleared of vegetation, areas to be preserved, and areas where vegetation would be cut to allow clear movement of the heliostats. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross-sections, cut/fill depths or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography tying in proposed contours with existing topography shall be illustrated. The DESCOP shall include a statement of the quantities of material excavated at the site, whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported or a statement explaining that there would be no clearing and/or grading conducted for each element of the project. Areas of no disturbance shall be properly identified and delineated on the plan maps.

Soil Wind and Water Erosion Control: The plan shall address exposed soil treatments to be used during construction and operation of the proposed project for both road and non-road surfaces including specifically identifying all chemical based dust palliatives, soil bonding, and weighting agents appropriate for use at the proposed project site that would not cause adverse effects to vegetation; BMPs shall include measures designed to prevent wind and water erosion including application of chemical dust palliatives after rough grading to limit water use. All dust palliatives, soil binders, and weighting agents shall be approved by both BLM's Authorized Officer and the CPM prior to use.

Project Schedule: The DESCOP shall identify on the topographic site map the location of the site-specific BMPs to be employed during each phase of construction (initial grading, project element construction, and final grading/stabilization). Separate BMP implementation schedules shall be provided for each project element for each phase of construction.

Best Management Practices: The DESCOP shall show the location, timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during project element excavation and construction, during final grading/stabilization, and after construction. BMPs shall include measures designed to control dust and stabilize construction access roads and entrances. The maintenance schedule shall include post-construction maintenance of treatment-control BMPs applied to disturbed areas following construction.

Erosion Control Drawings: The erosion-control drawings and narrative shall be designed, stamped and sealed by a professional engineer or erosion-control specialist.

Agency Comments: The DESCPC shall include copies of recommendations, ~~conditions and provisions~~ from the County of San Bernardino, California Department of Fish and Game (CDFG), and Lahontan Regional Water Quality Control Board (RWQCB).

Monitoring Plan: Monitoring activities shall include routine measurement of the volume of accumulated sediment in the onsite drainage ditches, and storm water diversions and the requirements specified in Appendix B, C, and D.

Verification: The DESCPC shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1**, and relevant portions of the DESCPC shall clearly show approval by be submitted to the chief building official (CBO) for review and approval. In addition, the project owner shall do all of the following:

- a. No later than ninety (90) days prior to start of site mobilization, the project owner shall submit a copy of the DESCPC to the County of San Bernardino, the RWQCB, the BLM's authorized officer, and CMP for review and comment. Both BLM's Authorized Officer and the CPM shall consider comments received from San Bernardino County and RWQCB.
- b. During construction, the project owner shall provide an analysis in the monthly compliance report on the effectiveness of the drainage-, erosion- and sediment-control measures and the results of monitoring and maintenance activities.
- c. Once operational, the project owner shall provide in the annual compliance report information on the results of storm water BMP monitoring and maintenance activities.
- d. Provide BLM's Authorized Officer and the CPM with two (2) copies each of all monitoring or ~~other compliance reports required for compliance with San Bernardino County, CDFG and RWQCB.~~

WASTE DISCHARGE REQUIREMENTS

SOIL&WATER-2: The project owner shall comply with the requirements specified in Appendix B, C, and D for dredge and fill, wastewater, and storm water discharges associated with construction and industrial activity. The project owner shall develop, obtain both BLM's Authorized Officer and CPM approval of, and implement a construction Storm Water Pollution Prevention Plan (SWPPP) for the construction of the project and an Industrial SWPPP for operation of the project.

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

PROJECT GROUNDWATER WELLS

SOIL&WATER-3: Pre-Well Installation. The project owner shall construct and operate up to two onsite groundwater wells that produce water from the IVGB. The project owner shall ensure that the wells are completed in accordance with all applicable state and local water well construction permits and requirements, including the San Bernardino County's Desert Groundwater Management Ordinance. Prior to initiation of well construction activities, the project owner shall submit for review and comment a well construction packet to the County of San Bernardino, in accordance with the County of San Bernardino Code Title 2, Division 3, Chapter 6, Article 5, containing the all documentation, plans, and fees normally required for the county's well permit, with copies to both BLM's Authorized Officer and the CPM. The project shall not construct a well or extract and use groundwater until ~~the County of San Bernardino provides a written concurrence that the proposed well construction and operation activities would comply with all applicable county requirements, and both BLM's Authorized Officer and the CPM provides approval to construct and operate the well.~~

Post-Well Installation. The project owner shall provide documentation to both BLM's Authorized Officer and the CPM that the well has been properly completed. In accordance with California's Water Code section 13754, the driller of the well shall submit to the DWR a Well Completion Report for each well installed. ~~The project owner shall ensure compliance with all county water well standards and requirements for the life of the wells and shall provide BLM's Authorized Officer and the CPM with two (2) copies each of all monitoring or other reports required for compliance with the County of San Bernardino water well standards and operation requirements, as well as any changes made to the operation of the well.~~

Verification: The project owner shall ensure the Well Completion Reports are submitted and shall ensure compliance with all county water well standards and requirements for the life of the wells. The project owner shall do all of the following:

1. No later than 180 days prior to the construction of the onsite groundwater wells, the project owner shall submit a Groundwater Monitoring and Management Plan to the County of San Bernardino for review and comment (see Condition of Certification **SOIL&WATER- 6**).
2. No later than sixty (60) days prior to the construction of the onsite groundwater wells, the project owner shall submit to both BLM's Authorized Officer and the CPM a copy of the water well construction packet submitted to the County of San Bernardino for review and comment.
3. No later than thirty (30) days prior to the construction of the onsite water supply wells, the project owner shall submit a copy of any written concurrence comments received from the County of San Bernardino indicating whether the proposed well construction activities comply with all county well requirements and meet the requirements established by the county's water well permit program.
4. No later than sixty (60) days after installation of each well at the project site, the project owner shall provide to both BLM's Authorized Officer and the CPM copies of the ensure that the well driller submits a Well Completion Reports submitted to the DWR by the well driller . The project owner shall submit to the CPM, together with the Well Completion Report, a copy of well drilling logs, water quality analyses, and any inspection reports.
5. During well construction and for the operational life of the well, the project owner shall submit two (2) copies each to BLM's Authorized Officer and the CPM for review and approval of any proposed well construction or operation permit changes within ten (10) days of submittal to or receipt from the County of San Bernardino.
6. The project owner shall provide BLM's authorized officer and the CPM with (2) two copies each of all monitoring and other reports required for compliance with the County of San Bernardino water well standards and operation requirements.
7. No later than fifteen (15) days after completion of the onsite water supply wells, the project owner shall submit documentation to BLM's Authorized Officer and the CPM and the RWQCB confirming that well drilling activities were conducted in compliance with Title 23, California Code of Regulations, Chapter 15, Discharges of Hazardous Wastes to Land, (23 CCR, sections 2510 et seq.) requirements and that any onsite drilling sumps used for project drilling activities were removed in compliance with 23 CCR section 2511(c).

CONSTRUCTION AND OPERATIONS WATER USE

(Staff and applicant are still discussing possible edits to **SOIL&WATER-4**.)

SOIL&WATER-4: ~~The project owner proposes to construct and operate the project in phases, beginning with Ivanpah 1, then Ivanpah 2, and ending with Ivanpah 3. The proposed project's use of groundwater during each year of construction shall not exceed more than the following:~~

~~A. 200 AFY during the construction of either Ivanpah 1 or 2; and 250 AFY~~ for all construction and operations activities shall not exceed 100 acre-feet per year. Prior to the use of groundwater for construction, the project owner shall install and maintain metering devices as part of the water supply and distribution system to document project water use and to monitor and record in gallons per day the total volume(s) of water supplied to the project from this water source. The metering devices shall be operational for the life of the project.

Verification: Beginning six (6) months after the start of construction, the project owner shall prepare a semi-annual summary of amount of water used for construction purposes. The summary shall include the monthly range and monthly average of daily water usage in gallons per day.

At least sixty (60) days prior to the start of construction of the proposed project, the project owner shall submit to both BLM's Authorized Officer and the CPM a copy of evidence that metering devices have been installed and are operational.

The project owner shall prepare an annual summary, which will include daily usage, monthly range and monthly average of daily water usage in gallons per day, and total water used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary will also include the yearly range and yearly average water use by source. For calculating the total water use, the term "year" will correspond to the date established for the annual compliance report submittal.

STORM WATER DAMAGE MONITORING AND RESPONSE PLAN

SOIL&WATER-5: The project owner shall ensure that all the heliostats are designed and installed to withstand storm water scour of up to 6.5 feet or greater that may occur as a result of a 100-year storm event. The analysis of the storm event and resulting heliostat stability will be provided within a Pylon Insertion Depth and Heliostat Stability Report to be completed by the applicant. This analysis will incorporate results from site-specific geotechnical stability testing, as well as hydrologic and hydraulic stormwater modeling performed by the applicant. The modeling will be completed using methodology and assumptions approved by the CPM and BLM's Authorized Officer.

The project owner shall also develop a Storm Water Damage Monitoring and Response Plan to evaluate potential impacts from storm water, including heliostats that fail due to storm water flow or otherwise break and scatter mirror debris on to the ground surface.

Verification: The basis for determination of total (local, general and long-term) scour depth will be to employ the step-by-step process identified below with the following criteria:

A. Determination of peak storm water flow from a 100-year event:

- Use of San Bernardino County (SBC) Hydrology Manual to specify hydrologic parameters to use in calculations; and
 - Hydrologic parameters from SBC will be used to develop HEC-1 and Flo-2D hydrologic models.
- B. To determine potential channel erosion and flow velocity from peak storm water flow as determined in A above:
- using methodology and assumptions subject to approval by BLM's Authorized Officer and the CPM;
- C. To determine potential local scour from peak storm water flow as determined in A above:
- Use Federal Highway Administration (FHA) equation for local bridge pier scour from the FHA 2001 report, "Evaluation Scour at Bridge."

Total scour at a pylon is the total of the results from equations applied in B and C above. To improve local accuracy, the project owner shall apply the engineering process above in Steps A through C in zones on the site to be defined as follows:

- Zone 1: Ivanpah 1
- Zone 2: Ivanpah 2
- Zone 3 Ivanpah 3 South
- Zone 4 Ivanpah 3 North

The Storm Water Damage Monitoring and Response Plan shall include the following elements:

- Detailed maps showing the installed location of all heliostats within each project phase.
- Each heliostat should be identified by a unique ID number marked to show initial ground surface at its base, and the depth of the pylon below ground.
- Minimum Depth Stability Threshold to be maintained of pylons to meet long-term stability for applicable wind, water and debris loading effects;
- Above and below ground construction details of a typical installed heliostat.
- BMPs to be employed to minimize the potential impact of broken mirrors to soil resources.
- Methods and response time of mirror cleanup and measures that may be used to mitigate further impact to soil resources from broken mirror fragments.
- Monitoring, documenting, and restoring the Ivanpah playa surface when impacted by sedimentation or broken mirror shards.

Monitor and Inspect Periodically, Before First Seasonal and After Every Storm Event:

- Security and Tortoise Exclusion Fence: Inspect for damage and buildup of sediment or debris
- Heliostats within Drainages or subject to drainage overflow: Inspect for tilting, mirror damage, depth of scour compared to pylon depth below ground and the Minimum Depth Stability Threshold, collapse, and downstream transport.
- Drainage Channels: Inspect for substantial migration or changes in depth, and transport of broken glass.
- Constructed Diversion Channels: Inspect for scour and structural integrity issues caused by erosion, and for sediment and debris buildup.
- Ivanpah Playa Surface: Inspect for changes in the surface texture and quality from sediment buildup, erosion, or broken glass.

Short-Term Incident-Based Response:

- Security and Tortoise Exclusion Fence: repair damage, and remove built-up of sediment and debris.
- Heliostats: Remove broken glass, damaged structure, and wiring from the ground, and for pylons no longer meeting the Minimum Depth Stability Threshold, either replace/reinforce or remove the mirrors to avoid exposure for broken glass.
- Drainage Channels: no short-term response necessary unless changes indicate risk to facility structures.
- Constructed Diversion Channels: repair damage, maintain erosion control measures and remove built-up sediment and debris.

Long-Term Design-Based Response:

- Propose operation/BMP modifications to address ongoing issues. Include proposed changes to monitoring and response procedures, frequency, or standards.
- Replace/reinforce pylons no longer meeting the Minimum Depth Stability Threshold or remove the mirrors to avoid exposure for broken glass.
- Propose design modifications to address ongoing issues. This may include construction of active storm water management diversion channels and/or detention ponds.
- Inspection, short-term incident response, and long-term design-based response may include activities both inside and outside of the approved right-of-way. For activities outside of the approved right-of-way, the applicant will notify BLM and acquire environmental review and approval before field activities begin.

At least sixty (60) days prior to construction, the project owner shall submit to both BLM's Authorized Officer and the CPM a copy of the Pylon Insertion Depth and Heliostat Stability Report for review and approval prior to construction. At least sixty (60) days prior to commercial operation, the project owner shall submit to both BLM's Authorized Officer and the CPM a copy of the Storm Water Damage Monitoring and Response Plan for review and approval prior to commercial operation. The project owner shall retain a copy of this plan onsite at the power plant at all times. The project owner shall prepare an annual summary of the number of heliostats failed, cause of the failure, and cleanup and mitigation performed for each failed heliostat.

GROUNDWATER LEVEL MONITORING AND REPORTING PLAN

SOIL&WATER-6: The project owner shall submit a Groundwater Level Monitoring and Reporting Plan to both BLM's Authorized Officer and the CPM for review and approval and to San Bernardino County for review and both BLM's Authorized Officer and the CPM for review and approval in accordance and comment regarding consistency with the County of San Bernardino Code Title 2, Division 3, Chapter 6, Article 5 (Desert Groundwater Management Ordinance). The Groundwater Level Monitoring and Reporting Plan shall provide a description of the detailed methodology for monitoring background and site groundwater levels. Monitoring shall include pre-construction, construction, and project operation water use. The primary objective for the monitoring is to establish pre-construction and project related groundwater levels ~~trends~~ that can be quantitatively compared against observed and simulated levels ~~trends~~ near the project pumping well and near potentially impacted existing wells.

Prior to project construction, monitoring shall commence to establish pre-construction base-line conditions and shall incorporate the existing monitoring and reporting data collected for the Primm Valley Golf Club. The monitoring network shall be designed to incorporate the ongoing monitoring and reporting program established for the Primm Valley Golf Course. The monitoring plan and network may make use of existing wells in the basin that would satisfy the requirements for the monitoring program.

Verification: The project owner shall complete the following:

1. At least three (3) ~~six (6)~~ months prior to construction, a Groundwater Level Monitoring and Reporting Plan shall be submitted to the County of San Bernardino for review and comment before completion of Condition of Certification **SOIL& WATER-3**, and a copy of the County's comments and the plan shall be submitted to both BLM's Authorized Officer and the CPM for review and approval. The Plan shall include a scaled map showing the site and vicinity, existing well locations, and proposed monitoring locations (both existing wells and new monitoring wells proposed for construction). The map shall also include relevant natural and man-made features (existing and proposed as part of this project). The plan also shall provide: (1) well construction information and borehole lithology for each existing well proposed for use as a monitoring well; (2) description of proposed drilling and

well installation methods; (3) proposed monitoring well design; and, (4) schedule for completion of the work.

2. At least two (2) ~~four (4)~~ months prior to construction, a Well Monitoring Installation and Groundwater Level Network Report shall be submitted to both BLM's Authorized Officer and the CPM. The report shall include a scaled map showing the final monitoring well network. It shall document the drilling methods employed, provide individual well construction as-builds, borehole lithology recorded from the drill cuttings, well development, and well survey results. The well survey shall measure the location and elevation of the top of the well casing and reference point for all water level measurements, and shall include the coordinate system and datum for the survey measurements. Additionally, the report shall describe the water level monitoring equipment employed in the wells and document their deployment and use.
3. As part of the monitoring well network development, all newly constructed monitoring wells shall be permitted and constructed consistent with San Bernardino County and State specifications.
4. At least two (2) ~~three (3)~~ months prior to project construction, all water level monitoring data shall be provided to both BLM's Authorized Officer and the CPM. The data transmittal shall include an assessment of pre-project water levels, a summary of available climatic information (monthly average temperature and rainfall records from the nearest weather station), and a comparison and assessment of water level data relative to the assumptions and spatial ~~trends~~ levels simulated by the applicant's groundwater model.
5. After project construction and during project operations, the project owner shall submit the monitoring data annually to both BLM's Authorized Office and the CPM. The summary shall document water level monitoring methods, the water level data, water level plots, and a comparison between pre- and post-project start-up water level trends. The report shall also include a summary of actual water use conditions, monthly climatic information (temperature and rainfall), and a comparison and assessment of water level data relative to the assumptions and spatial ~~trends~~ levels simulated by the applicant's groundwater model.

WASTEWATER COLLECTION SYSTEM REQUIREMENTS

SOIL&WATER-7: (Staff and applicant do not propose any changes)

SEPTIC SYSTEM AND LEACH FIELD REQUIREMENTS

SOIL&WATER-8: Sixty (60) days prior to the start of construction of the sanitary waste system, the project owner shall ~~comply with~~ submit to the County of San Bernardino for review and comment, and to both the BLM's authorized officer and CPM for review and approval, plans and Appendix B, C and D requirements for the construction and operation of the project's proposed

sanitary waste septic system and leach field. These plans shall comply with the requirements set forth in County of San Bernardino codes and Appendices B, C, and D. Project construction shall not proceed until ~~documentation equivalent to the County's wastewater treatment system system permits are issued by the County and approved by both BLM's Authorized Officer and the CPM~~ have approved the plans. The project owner shall remain in compliance with the San Bernardino County code ~~County~~ requirements for the life of the project.

Verification: Sixty (60) days prior to the start of commercial operations, the project owner shall submit to the County of San Bernardino appropriate fees and plans for review and comment for the construction and operation of the project's sanitary waste septic system and leach field. A copy of these plans shall be submitted to both the BLM's authorized officer and CPM for review and approval. The plans shall demonstrate compliance with the sanitary waste disposal facility requirements of County of San Bernardino and Appendices B, C, and D. The project owner will submit all necessary information and the appropriate fee to the County of San Bernardino to ensure that the project has complied with the County's and Appendix B, C, and D sanitary waste disposal facilities requirements. A written assessment prepared by the County of San Bernardino of the project's compliance with these requirements must be provided to the CPM sixty (60) days prior to the start of operation.

Proposed Edits to Soil & Water Section of FSA/DEIS

Page 6.9-4, Local LORS,

Local LORS	
County of San Bernardino General Plan and Development Code	Grading in San Bernardino County is subject to terms and conditions of San Bernardino County's General Plan, and <u>Development Code and California Building Code, based upon the 2006 International Building Code. Although, Because</u> the proposed site is located on federal land, county regulations <u>for public health and safety are considered to beare not directly</u> applicable to the project. However, once the project has been approved by BLM, BLM has the option to request assistance from San Bernardino County to determine and implement specific grading and soil erosion standards. If a county grading permit is required, by the BLM, the grading plan would need to be completed in compliance with San Bernardino County's General Plan and Development Code.

Page 6.9-7, Setting, Ivanpah Valley, Last Paragraph

Molycorp Mine (aka Mountain Pass Mine), operated by Molycorp Minerals LLC, is a lanthanide mining and milling operation. Molycorp Mine discharged wastewater through a pipeline to 'old' evaporation ponds in the Ivanpah playa between 1980 to 1987, and

later discharged wastewater to 'new' evaporation ponds in the playa between 1988 to 1998 (RWQCB1998a). The RWQCB Cleanup and Abatement Order No. 6-98-20 requires abatement of a groundwater plume that developed beneath the old evaporation ponds. This plume contains TDS, nitrate, strontium, barium, and radium in concentrations above the California Maximum Contaminant Levels (MCLs) (RWQCB1998a). Nitrate levels above the MCLs are present in the groundwater beneath the new evaporation ponds (RWQCB1998b). Sediments at both ponds contain lanthanides and radionuclides (RWQCB1998b). Most of the non-natural contamination in the IVGB is the result of

Page 6.9-29, regional Groundwater Supply, Paragraph after SOIL & WATER Table 11

The most recent recharge estimates were done by ENSR in 2008 and the Energy Commission staff in 2009. The ENSR recharge calculations differ from the applicant's because ENSR used the estimated areal extent of the Ivanpah Valley watershed that was developed by Glancy in 1968 and used the standard elevation limit of 5,000 feet above mean sea level (amsl) for precipitation in the Maxey-Eakin method. Both the applicant and Donovan/Katzer used a precipitation limit of 4,500 feet amsl. The applicant's watershed estimates were based on recent United States Geological Survey digital elevation maps, a more accurate way to define and measure the area of the watershed. Conducting our own Maxey-Eakin estimates of recharge, staff estimates recharge to be between 5,223 to 6,538 AFY. This range encompasses those of Donovan/Katzer and the applicant. Staff estimated annual groundwater recharge using the PRISM (PRISM2009) precipitation model data, a United States Department of Agriculture geospatial dataset, by using the results of this model to estimate areas in various average annual precipitation zones to bracket the range of recharge for the basin (**Soil & Water Figure 2**).

**SOIL & WATER Table 12
Ivanpah Valley Groundwater Basin Balance**

Basin Inflows and Outflows	Pre-Development Basin Balance	Post Development Basin Balance	
		Existing Conditions	Estimated Future Conditions
Inflows (AFY)			
Recharge from Precipitation ¹	5,223 to 6,538	5,223 to 6,538	5,223 to 6,538
Underflow and Surface Water	0	0	0
Total Inflow	5,223 to 6,538	5,223 to 6,538	5,223 to 6,538
Outflows (AFY)			
Groundwater Pumping ²			
Reoperation of the MolyCorp Mine	0	0	400
ISEGS Proposed Project	0	0	100
FirstSolar Photovoltaic Power Plant ³	0	0	30
Ivanpah Energy Center	0	0	15
Primm Outlet Mall New Fast-Food Restaurant	0	0	15
NextLight Silver State North and South Photovoltaic Power Project	0	0	14
Interstate 15 Improvements ⁴	0	0	10
Southern Nevada Supplemental Airport ⁴	0	0	0
DesertXpress Rail Line	0	0	0
Temporary Caltrans Batch Plant	0	0	0
Mixed-Use Development (near Jean)	0	0	0
Las Vegas Valley Water District Pipeline	0	0	0
SCE Transmission Line Upgrades	0	0	0
Wind Energy Projects – Clipper Wind and PPM Wind	0	0	0
Primm Valley GolfClub ⁶	0	1,741	1,741
Primm Municipal & Casinos	0	1,470	1,470
Colosseum & Other Mining	0	1,060	1,060
Community of Jean & Jean Lake Valley	0	740	740
Industrial Water Use	0	150	150
Community of Goodsprings	0	120	120
Community of Desert	0	50	50
Domestic Water Use	0	40	40
Community of Nipton	0	30	30
Community of Calnerva	0	1	1
<i>Total Groundwater Pumping</i>	<i>0</i>	<i>5,402</i>	<i>5,986</i>
Water-Use Returns ⁶	0	-1,987	-2,147
Total Outflow	0	3,415	3,839
Basin Balance (AFY)	5,223 to 6,538	1,808 to 3,123	1,384 to 2,699

Source: BSE2007a; CH2MHLI2009a

- Notes:
1. Recharge from precipitation is reported as a range developed by staff based on variability in elevation and precipitation rates.
 2. All pumping volumes are from the AFC, except the pumping volume for the Primm Valley Golf Club. The pumping volumes in the AFC were based on the 2007 ENSR report (ENSR2007).
 3. ~~Assumes maximum estimated groundwater use.~~
 4. The water supply for the proposed airport would be pumped in from the Las Vegas Valley. Return flow from this water supply is not included in the water budget.
 3. ~~Assumes maximum estimated groundwater use.~~
 5. Pumping data from the May 2009 Ground-Water Monitoring Ten-Year Report for the Primm Valley Golf Club.
 6. ENSR (2008) assumed a 30 percent return flow from the Primm Valley Golf Club and 40 percent return flow from municipal gray water infiltration. All water use return from potential future facilities were excluded except for that for the ~~MolyCorp~~ Mine return flow, which was estimated at 40 percent.

Page 6.9-34, Local Groundwater supply, last paragraph

Staff also evaluated whether drawdown from project pumping would contribute to exceedance of the significance elevations established for golf course pumping by the County of San Bernardino. The significance criteria or 'significance elevations' for groundwater levels ~~proposed established by San Bernardino County (County)~~ for the Colosseum wells is presented in **Soil and Water Table 14** (Broadbent2009). These significance elevations ~~are under review were established by San Bernardino the County to establish~~ as a basis for determining whether there would be any impacts from pumping the Colosseum wells. For the pumping in the Colosseum wells, a significant impact ~~would~~ occurs when groundwater levels in these wells reaches 2,487 and 2,493 feet amsl, respectively (Broadbent2009). Average groundwater elevations in the Colosseum wells #1 and #2 have been 2,507 and 2,513 feet amsl and recent groundwater levels were 2,503 and 2,507 feet amsl during 2007/2008 (Broadbent2009). Based on the 2007/2008 groundwater levels in the Colosseum wells, 16 feet of groundwater remained in Colosseum well #1 and 14 feet in well #2 before the significance criteria threshold would be reached.

Page 6.9-35, Local Groundwater supply, Paragraph before SOIL & WATER Table 14

Staff believes the estimated contribution of the project's proposed pumping over the 50-year life of the project to impacting operation of Colosseum Well# 1 and reaching or exceeding the proposed 'significance elevations' is limited and should not contribute to significant impacts in the basin.

Pages 6.9-68 & 69, Insert “Proposed Facility” to Column 1 heading of Table 1.

**TABLE 1
Dredge and Fill Impacts to Waters of the State***

<u>Proposed Facility</u>		Linear Impacts ⁴ (feet):	Impact Area (acres)	Fill Volume (cubic yards)	Dredge Volume (cubic yards)
--------------------------	--	-------------------------------------	---------------------	---------------------------	-----------------------------

Page 6.9-70, Soil and Water Appendix B – Facts for Wastewater Discharge, Item 9 - Mitigation Plan,

See Condition of Certification ~~Biology~~**BIO-20** for a description of the ~~compensation~~mitigation requirements for impacts to waters of the State.

Page 6.9-70, Soil and Water Appendix B – Facts for Wastewater Discharge, Item 10.a - Mitigation Plan, second paragraph, last sentence, page 6.9-70

The Applicant would implement best management practices (BMPs) as described in the SWPPP and DESCOP to avoid and/or minimize impacts to water quality during construction.

Page 6.8-82, Soil and Water Appendix C - Requirements for Wastewater Discharge, Section II.C.2

The applicant must, at all times during construction and operation of the project, maintain appropriate types and sufficient quantities of material on site to contain any spill or inadvertent release of materials that may cause a condition of pollution or nuisance if the materials reach waters of the State.

Traffic and Transportation

Staff condition **TRANS-1** includes minor revisions and moves the list of specifications for the Traffic Control Plan into the condition's verification section. To clearly show the minor revisions to the specifications, only the revisions are shown with underline in the **TRANS-1** verification section.

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 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.

Verification: 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.

The Traffic Control Plan shall include:

- ~~• requiring at least 60% of construction workers to arrive to the site by bus transport (15 people per bus);~~
- 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.~~

(Staff has proposed changes to TRANS-2 as requested by BLM.)

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, as directed by the BLM's Authorized Officer and CPM. The project owner's use of Yates Well Road shall not diminish the rights or use of the road by other BLM authorized users. Repairs and restoration of access roads may be required at any time during the construction phase of the project to assure safe ingress and egress.

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.

Verification: 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.

The project owner shall rebuild, repair and maintain all public roads, easements, rights-of-way in a usable condition throughout the construction phase of the project.

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.

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 condition TRANS-3 includes minor revisions and moves the list of specifications for the Heliostat Positioning Plan into the condition's verification section. To clearly show the minor revisions to the specifications, only the revisions are shown with underline in the TRANS-1 verification section.)

HELIOSTAT POSITIONING PLAN AND MONITORING

TRANS-3 ~~The project owner shall prepare a Heliostat Positioning Plan that would avoid potential for human health and safety hazards from solar radiation exposure. accomplish the following:~~

- ~~1. 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/m^2~~
 - ~~b. MPE for continuous exposure (for a period greater than 0.25 second) is 1 kw/m^2~~~~

- ~~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.~~

Verification: Within 90 days before commercial operation of any of the three ISEGS power plants, the project owner shall submit the Heliostat Positioning Plan to BLM's Authorized Officer and 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 BLM's Authorized Officer and the CPM. The Heliostat Positioning Plan shall accomplish the following:

- ~~1. 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;~~
1. Identify the heliostat movements and positions (including reasonably possible malfunctions) that could result in potential exposure of these observers at various locations including in aircraft, motorists, pedestrians and hikers in the Clark Mountains to reflected solar radiation from heliostats;
2. Prepare a Heliostat Operating Plan that Describe within the HPP how programmed heliostat operation would avoid potential for human health and safety hazards at locations of sensitive receptors observers as attributable to including the potential for momentary and continuous solar radiation exposure to occur greater than the thresholds of significance of: Maximum Permissible Exposure of 10 kw/m² MPE for momentary exposure (for a period of 0.25 second or less) is 40 kw/m²
 - ~~a. MPE for continuous exposure (for a period greater than 0.25 second) is 1 kw/m² (Move a and c together)~~
3. Prepare a monitoring plan that would: a) obtain field measurements in response to legitimate complaints; b) verify that the Heliostat Positioning Operating Plan would avoid potential for human health and safety hazards including temporary or permanent blindness at locations of observers; sensitive receptors, and c) provide requirements and procedures to document, investigate and resolve legitimate complaints regarding glare.

4. The monitoring plan should be coordinated with the FAA, U.S. Department of the Navy, CalTrans, CHP, 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.

Verification: Within 90 days before commercial operation of any of the three ISEGS power plants, the project owner shall submit the Heliostat Positioning Plan to BLM's Authorized Officer and 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 BLM's Authorized Officer and the CPM.

(Staff has proposed edits to TRANS-4 in the spirit of discussions between applicant and staff, which are still subject to review and approval by applicant.)

VERIFICATION OF POWER TOWER RECEIVER LUMINANCE AND MONITORING

TRANS-4 The project owner shall prepare a Power Tower Luminance Monitoring Plan to provide procedures to conduct periodic monitoring and to document, investigate and resolve complaints regarding distraction effects to aviation, vehicular and pedestrian traffic associated with the power towers.

~~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.~~

Verification: Within 60 days prior to commercial operation of the first ISEGS power plant to become operational, the project owner shall provide a Power Tower Luminance Monitoring Plan applicable for the ISEGS Project for review and approval by BLM's Authorized Officer and the CPM. The plan shall specify 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.

Within 90 days following commercial operation and at intervals of every 5 years following ~~Upon commercial operation of~~ for each of the three ISEGS power plants (Ivanpah 1, 2 and 3) and after receiving a legitimate complaint regarding a distraction associated with the power towers and at intervals of every 5 years thereafter, the project owner shall evaluate the effects of the intensity of the luminance of light reflected from all four sides (north, south, east and west) of the power tower receivers. The Power Tower Luminance Monitoring Plan shall include provisions for the following:

1. Coordination of luminance evaluations with the FAA, U.S. Department of the Navy, CalTrans, CHP, and with Clark County Department of Aviation in relation to the proposed Southern Nevada Supplemental Airport;
2. Reporting within 15 days after completing any luminance measurements; the project owner shall submit a summary report to FAA, U.S. Department of the Navy, CalTrans, CHP and Clark County Department of Aviation for review and comment, and to BLM's Authorized Officer and the CPM for review and approval.
3. Measurement of solar radiation and luminance as measured from at the locations where any distraction effects have been reported and at the locations nearest the power towers from the four sides of the power plant boundaries, and nearest public roads to each of the three power plants and at distances of 200, 500, 1,000 and 1,500 meters from the north, south, east and west sides of the power tower receivers for each power tower and during the time of day when values would be highest;
4. Measurement of solar radiation and luminance using with an illuminance meter, photometer, or similar device and reporting of data in photometric units; the measurements are intended to provide a relative and quantifiable measure of luminance that can be associated with any observed and reported distraction effect from the power tower receivers that may support anticipation and investigation of any future effects to ensure that luminance does not exceed the standard of 89 cd/m² at the nearest road or power plant boundary.
5. Provisions for identifying and implementing appropriate mitigation measures if reported distraction is determined to be legitimate and if power tower luminance is determined to be causing a safety concern; The project owner shall consider and propose any reasonable mitigation measures that are technically and financially feasible. The mitigation measures may include surface treatment or

material changes to increase absorption and reduce reflectivity of the power tower receivers, road signage, screening or other reasonable measures.

6. Post-mitigation verification; Within 30 days following the implementation of mitigation measures designed to reduce reflectivity of the power towers, the project owner shall repeat the luminance measurements to demonstrate the effectiveness of mitigation measures and prepare a supplemental survey report for review and comment by FAA, U.S. Department of the Navy, CalTrans, CHP and Clark County Department of Aviation, and for review and approval by BLM's Authorized Officer and the CPM.

~~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 and approval by BLM's Authorized Officer and the CPM., and Upon receiving both approvals, the project owner shall implement mitigation measures project modifications to reduce the level of distraction associated with glare from the power tower receivers 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.~~

~~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.~~

Verification: 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. These notification 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.

Waste Management

Staff only accepts the applicant's proposed change to Condition of Certification **WASTE -7**. Previously considered changes to **WASTE-3 and -6** are not acceptable due to the following:

1. 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 does not agree 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". The conditions are intended for the applicant and not the CEC.

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

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

Worker Safety and Fire Protection

WORKER SAFETY-1 The project owner shall submit to BLM's Authorized Officer and the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program containing the following:

- A Construction Personal Protective Equipment Program;
- A Construction Exposure Monitoring Program;
- A Construction Injury and Illness Prevention Program;
- A Construction Emergency Action Plan; and
- A Construction Fire Prevention Plan.

~~The Personal Protective Equipment Program, the Exposure Monitoring Program, and the Injury and Illness Prevention Program shall be submitted to BLM's Authorized Officer and the CPM for review and approval concerning compliance of the program with all applicable Safety Orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the San Bernardino County Fire Department for review and comment prior to submittal to the BLM's Authorized Officer and CPM for approval.~~

Verification: At least thirty (30) days prior to the start of construction, the project owner shall submit to BLM's Authorized Officer and the CPM for review and approval a copy of the Project Construction Safety and Health Program. The project owner shall provide a copy of a letter to the BLM's Authorized Officer and CPM from the San Bernardino County Fire Department, if any is received, stating the Fire Department's comments on the Construction Fire Prevention Plan and Emergency Action Plan.

The Personal Protective Equipment Program, the Exposure Monitoring Program, and the Injury and Illness Prevention Program shall be submitted to BLM's Authorized Officer and the CPM for review and approval concerning compliance of the program with all applicable Safety Orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the San Bernardino County Fire Department for review and comment prior to submittal to the BLM's Authorized Officer and CPM for approval.

WORKER SAFETY-2 The project owner shall submit to BLM's Authorized Officer and the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:

- An Operation Injury and Illness Prevention Plan;
- An Emergency Action Plan;
- Hazardous Materials Management Program;

Fire Prevention Program (8 CCR § 3221); and;
Personal Protective Equipment Program (8 CCR §§ 3401-3411).

~~The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to BLM's Authorized Officer and the CPM for review and approval concerning compliance of the program with all applicable Safety Orders. The Operation Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the San Bernardino County Fire Department for review and comment.~~

Verification: At least thirty (30) days prior to the start of first-fire or commissioning, the project owner shall submit to BLM's Authorized Officer and the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program. The project owner shall provide a copy of a letter to BLM's Authorized Officer and the CPM from the San Bernardino County Fire Department stating the Fire Department's comments on the Operations Fire Prevention Plan and Emergency Action Plan.

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to BLM's Authorized Officer and the CPM for review and approval concerning compliance of the program with all applicable Safety Orders. The Operation Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the San Bernardino County Fire Department for review and comment.

WORKER SAFETY-3 The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of power plant construction activities and relevant laws, ordinances, regulations, and standards, is capable of identifying workplace hazards relating to the construction activities, and has authority to take appropriate action to assure compliance and mitigate hazards. The CSS shall:

- Have over-all authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- Assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;
- Assure that all construction and commissioning workers and supervisors receive adequate safety training;
- Complete accident and safety-related incident investigations, emergency response reports for injuries, and inform BLM's Authorized Officer and the CPM of safety-related incidents; and
- Assure that all the plans identified in **WORKER SAFETY-1 and -2** are implemented.

Verification: At least thirty (30) days prior to the start of site mobilization, the project owner shall submit to BLM's authorized officer and the CPM the name and contact

information for the Construction Safety Supervisor (CSS). The contact information of any replacement (CSS) shall be submitted to BLM's Authorized Officer and the CPM within ~~one~~ three business days.

The CSS shall submit in the Monthly Compliance Report a monthly safety inspection report to include:

- Record of all employees trained for that month (all records shall be kept on site for the duration of the project);
- Summary report of safety management actions and safety-related incidents that occurred during the month;
- Report of any continuing or unresolved situations and incidents that may pose danger to life or health; and
- Report of accidents and injuries that occurred during the month.

WORKER SAFETY-4 The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO, and will be responsible for verifying that the Construction Safety Supervisor, as required in **WORKER SAFETY-3**, implements all ~~appropriate~~ applicable Cal/OSHA and Commission safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

Verification: At least thirty (30) days prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to BLM's Authorized Officer and the CPM for review and approval.



**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 11/23/09)

APPLICANT

Solar Partners, LLC
John Woolard,
Chief Executive Officer
1999 Harrison Street, Suite #500
Oakland, CA 94612

Todd A. Stewart, Project Manager
Ivanpah SEGS
sdeyoung@brightsourceenergy.com
E-mail Preferred

Steve De Young, Project Manager
Ivanpah SEGS.
1999 Harrison Street, Ste. 2150
Oakland, CA 94612
tstewart@brightsourceenergy.com

APPLICANT'S CONSULTANTS

John L. Carrier, J. D.
2485 Natomas Park Dr. #600
Sacramento, CA 95833-2937
jcarrier@ch2m.com

COUNSEL FOR APPLICANT

Jeffery D. Harris
Ellison, Schneider
& Harris L.L.P.
2600 Capitol Avenue, Ste. 400
Sacramento, CA 95816-5905
jdh@eslawfirm.com

INTERESTED AGENCIES

California ISO
e-recipient@caiso.com

Tom Hurshman,
Project Manager
Bureau of Land Management
2465 South Townsend Ave.
Montrose, CO 81401
tom_hurshman@blm.gov

Raymond C. Lee, Field Manager
Bureau of Land Management
1303 South U.S. Highway 95
Needles, CA 92363
Raymond_Lee@ca.blm.gov

Becky Jones
California Department of
Fish & Game
36431 41st Street East
Palmdale, CA 93552
dfqpalm@adelphia.net

INTERVENORS

California Unions for Reliable Energy ("CURE")
Tanya A. Gulesserian
Marc D. Joseph
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Ste 1000
South San Francisco, CA 94080
tgulesserian@adamsbroadwell.com

Western Watersheds Project
Michael J. Connor, Ph.D.
P.O. Box 2364
Reseda, CA 91337-2364
mjconnor@westernwatersheds.org

Gloria Smith, Joanne Spalding
Sidney Silliman, Devorah Ancel
Sierra Club
85 Second Street, 2nd Fl.
San Francisco, CA 94105
E-mail Service Preferred
gloria.smith@sierraclub.org
joanne.spalding@sierraclub.org
gssilliman@csupomona.edu
devorah.ancel@sierraclub.org

*indicates change

INTERVENORS CONT.

Joshua Basofin, CA Rep.
Defenders of Wildlife
1303 J Street, Ste. 270
Sacramento, CA 95814

E-mail Service Preferred

jbasofin@defenders.org

Basin and Range Watch
Laura Cunningham

Kevin Emmerich

P.O. Box 70

Beatty, NV 89003

atmictoadranch@netzero.net

Center for Biological Diversity
Lisa T. Belenky, Sr. Attorney
Ileene Anderson, Public Lands Desert Director
351 California Street, Ste. 600
San Francisco, CA 94104

E-mail Service Preferred

lbelenky@biologicaldiversity.org

ianderson@biologicaldiversity.org

California Native Plant Society
Greg Suba, Tara Hansen & Jim Andre
2707 K Street, Suite 1
Sacramento, California, 95816-5113

E-mail Service Preferred

gsuba@cnps.org

thansen@cnps.org

granites@telis.org

*County of San Bernardino

Bart W. Brizzee, Deputy Co. Counsel

385 N. Arrowhead Avenue, 4th Fl.

San Bernardino, California, 92415

bbrizzee@cc.sbcounty.gov

ENERGY COMMISSION

JEFFREY D. BYRON

Commissioner and Presiding Member

jbyron@energy.state.ca.us

JAMES D. BOYD

Vice Chairman and

Associate Member

jboyd@energy.state.ca.us

Paul Kramer

Hearing Officer

pkramer@energy.state.ca.us

John Kessler

Project Manager

jkessler@energy.state.ca.us

Dick Ratliff

Staff Counsel

dratliff@energy.state.ca.us

Public Adviser

publicadviser@energy.state.ca.us

DECLARATION OF SERVICE

I, Mineka Foggie, declare that on January 04, 2010, I served and filed copies of the attached, Staff's Proposed Revisions To Conditions Of Certificatio and Limited FSA/DEIS Text Edits To Soil & Water Ivanpah Solar Electric Generating System (07-AFC-5) Exhibit 303 dated, January 4, 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].

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

(Check all that Apply)

FOR SERVICE TO ALL OTHER PARTIES:

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

 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 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.

Originally Signed By _____
Mineka Foggie