

## DOCKETED

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<b>Project Title:</b>	Ivanpah Solar Electric Generating System (Compliance)
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<b>Submitter Role:</b>	Applicant
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March 20, 2014

Teresa R. Motley,  
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**RE: Clark County Department of Aviation (CCDOA) Pilot Reports - Ivanpah Solar Electric Generating System (ISEGS)**

Dear Ms. Motley:

The Ivanpah Solar Generating System (ISEGS) appreciates the Clark County Department of Aviation providing the pilots reports in your correspondence of March 10, 2014. As per the Heliostat Positioning Plan (HPP), ISEGS is providing the attached preliminary investigation report for the pilot reports you have provided.

To further investigate to the pilot reports as per the HPP, ISEGS requests the cooperation of the CCDOA and the NASA Aviation Safety Reporting System (ASRS) to obtain the following information:

1. Location data for the flights reports, including GPS tracks of the aircraft, if available.
2. Precise times for each of the flight tracks.

Following the receipt of this information, the ISEGS facility will attempt to obtain measurements of the luminance and irradiance at the locations provided. These measurements and the results will be used to determine if exposures may exist above the maximum permissible exposure levels (MPE) and the results will be reported as per the requirements of Section 6.5 of the HPP. Should the MPE be exceeded in the measurement obtained, then a full monitoring effort will be conducted as soon as practicable and the results of all investigations reported in the ISEGS monthly compliance report.

As per your request for additional information as outlined in your correspondence, please note project commercial operations were commenced on December 31, 2013. The HPP was approved by the agencies after consulting with CCDOA in December of 2013. As a result, the contracting process to for personnel necessary to obtain your requested information, documentation and evaluations is ongoing and the data has not yet been developed. Provision of this data will be coordinated with the reporting of the pilot reports and will be provided to the individuals and entities as per your correspondence. Additional details and specifics are provided in the attached preliminary report.

ISEGS takes these reports very seriously and appreciates the continuing cooperation of the CCDOA. Please feel free to contact me regarding the HPP. Please update your files to reflect the new contact information.

Sincerely,



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## **Preliminary Report ISEGS Investigation of Pilot Reporting**

The Ivanpah Solar Electric Generating Station (ISEGS) has investigated the pilot reports as required by the HPP. This preliminary report summarizes the findings of the preliminary investigation. In addition, this document also provides specific responses to the requests for information made by the CCDOA in the correspondence of March 10, 2014.

### **Background and Timing:**

The two reports (ACN: 1109473 and CAN: 1108698) occurred in August 2013 prior to the facility's full commissioning. Testing, calibration and commissioning of the entire facility (Units 1, 2 & 3) was ongoing, and many of the heliostats at the facility were in the process of being brought into operation through a calibration process. A number of heliostats had not been through the calibration process at the time of the reports. The status of the solar field is different today from the status of the field at the time of the reports, with more heliostats through the calibration process. In addition, during operations, the ISEGS project implemented a revised stow strategy that places stored heliostats in random orientation when the solar field is not in use. This random orientation was not employed during the commissioning phase. With the commencement of operations, the calibration of the field to ensure all heliostats are now properly oriented and the revised random stow position decreases the potential for glint and glare to occur in areas above the facility.

### **Additional Information**

The ISEGS project has interviewed a helicopter pilot and a photographer that flew over the site on five different occasions (Sept 4-5, 2013, Nov 1, 2013, Feb 3, 2014 and Feb 13, 2014). These interviews were conducted by ISEGS facility personnel to evaluate the potential for offsite glint and glare to occur above the facility. In the interview, the pilot and photographer did not indicate that they observed issues similar to the complaint filed. The purpose of the flights was to document the progress of the project during the construction phase. The photographs are available at [JameyStillingsProjects.com](http://JameyStillingsProjects.com) (see the evolution of Ivanpah sections I and II).

Responses to CCDOA Requests:

CCDOA in their correspondence requested specific responses to the following:

3. *"Address the complaint(s) as soon as practical and report the results to Bureau of Land Management (BLM) Needles Field Office, California Energy Commission (CEC), CCDOA and the other agencies identified in Section 6.5 of the HPP within 10 days of receipt".*

Response: ISEGS has investigated the reports to extent practical with information provided. This preliminary report provides the operational conditions at the time of the reports. Additional information is required to provide the details necessary to investigate the reports as per the HPP. Our correspondence requests the necessary information. Following the receipt of the specific times and tracks of the aircraft in the pilot reports, ISEGS will undertake a more thorough investigation of the exact operating conditions of the plant. Currently the information provided is insufficient to pinpoint the exact orientation of heliostats at the time of the pilot reports. All agencies in Sec: 6.5 of the HPP will receive a final report once the investigation and the required information is completed.

4. *“Visit the location of the complaint(s) as soon as possible”*

Response: The information received in the pilot reports ACN: 1109473/ACN: 1108698 does not provide a precise location of where aircraft course, speed, time or elevation. These items have been requested. Since the precise or even approximate location is unknown, it cannot be visited. To our knowledge, there have been no further complaints. We will continue monitoring the solar field and report the results of the surveys per the PTLMP.

5. *Make efforts to observe the glare noted in the complaint by checking the location of the complaint as a similar time of day as noted in the complaint(s).*

Response: Both pilot reports provide four hour duration, therefore the precision of the reports is limited. The ISEGS facility revises the position of the heliostats throughout the day to track the sun. The tracking of the sun during this time would include a very large arc across the sky. Therefore, with a lack of data regarding time or precise location, the potential to replicate the position and time of aircraft location is not possible. As outlined above, the facility commissioning has completed the calibration of the heliostats and revised the stow orientation which should mitigate the potential for similar incidents to occur.

6. *If any glare from any heliostat is observed at the complaint location, take measurements of luminance and irradiance of the glare source using hand-held meters at locations as close as possible to the location identified in the complaint(s).*

Response: Should precise timing and locational data be provided as per our request, ISEGS will proceed with obtaining the measurements as per the requirements of the HPP.

7. *Reports the results to the complainant(s) (if known) and to the CEC Compliance Project Manager (CPM), BLM authorized officer, Federal Aviation Administration (FAA), CCDOA, and other relevant agencies identified in Section 6.5 of the HPP.*

Response: This report summarizes the preliminary investigation. Should precise locations and times be provided for the aircraft whose pilots provided these reports, and then additional investigations will occur as per the HPP.

8. *If observation or measurements by monitors indicate a potential glare-related effect above the maximum permissible exposure (MPE), conduct a full monitoring effort as quickly as possible at the appropriate location (whether ground based or aerial).*

Response: Should accurate locational data be provided, the ISEGS project will assess the potential for glare related effects above the MPE. If the MPE level is exceeded, then ISEGS will conduct a full monitoring effort as soon as practical.

9. *Report the complaint(s) and the subsequent investigation and monitoring results in the ISEGS monthly compliance report.*

Response: The results of this preliminary investigation will be reported as per the requirements. Should additional data be provided for precise locations and times, the results of any further investigation will also be reported as per the requirements.

***In addition, CCDOA requests that Solar Partners transmit the following to CCDOA:***

1. *Documentation of the aerial monitoring of potential exposure to pilots that was required during testing of the heliostat positioning system, including visual observation and recording a video image of the site during as least three helicopter flyovers.*

Response: The HPP was approved by the agencies in December of 2013. The facility became operational on December 31, 2013. The ISEGS facility is currently engaged in a contracting process to locate and retain services to obtain this documentation.

2. *The results of the luminance evaluations as required in Section D.1 of TRANS-4 (i.e., Power Tower Luminance and Monitoring Plan).*

Response: As per the Power Tower Luminance and Monitoring Plan, this data is to be obtained during the first 90 days of operations. The project is currently obtaining this data. Please note that this requirement is for the luminance of the towers and is not associated with the glint and glare from heliostats. The luminance was not part of the pilot reports.

3. *The supplemental survey report of the mitigation measures designed to reduce reflectivity of the power towers, as required by section d.6 of TRANS-4.*

Response: The project is still currently within the first 90 days of operations and is currently examining the options for implementation of this requirement. Please note that this requirement is for the luminance of the towers and is not associated with the glint and glare from heliostats. The luminance was not part of the pilot reports.