

DOCKETED

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**Ivanpah Solar Electric Generating System (Ivanpah)
Avian & Bat Technical Advisory Committee (TAC) Meeting**
Sacramento, California. December 3, 2014 –Meeting Notes

TAC Members Present: Co-Chair, Roger Johnson – CA Energy Commission (CEC)
Amedee Brickey – US Fish and Wildlife Service (USFWS)
Magdalena Rodriguez – CA Dept. Fish and Wildlife (CDFW)
Mitch Samuelian – Ivanpah Operations (Ivanpah)
George Piantka – Solar Partners LLC (SP)

Via Teleconference: Co-Chair, Dr. Larry LaPre – Bureau of Land Management (BLM)

Invited Guests Present: Brian Boroski, Ph.D. – HT Harvey & Associates (HTH)
Dave Johnston, Ph.D. – HT Harvey & Associates (HTH)
Geoff Lesh – CA Energy Commission
Marc Sydnor – Ivanpah Operations

Introductions

- Attendee Introductions (TAC members and invited guests)

Ivanpah Best Management Practices Update

- Lighting BMPs
 - Ivanpah is turning off non-essential lighting in all towers at night to reduce insect attraction.
 - Ivanpah non-insect attracting ground LED lighting has arrived; an RFP for installation has been issued.
 - Perching deterrence will be installed in conjunction with LED light fixtures.
- Bat Deterrence within Air Cooled Condenser
 - Bat sonic deterrence units were installed at the Unit 3 ACC on September 10th.
 - No bat detections have occurred in Unit 3 since the installation; however, detections have occurred in other units.
 - Screening efforts will be suspended as a result of the apparent effectiveness of sonic deterrence.
- Flux Management and Bird Buffer Deterrence Testing
 - Flux management measures were completed in all three units in July.
 - Initial visual observations indicate the anticipated effect – flux appears to be concentrated closer to the boiler.
 - Bird Buffer was installed at Unit1 on October 12, 2014.
 - The effectiveness based upon mortality survey results so far is inconclusive
 - Cross-comparison of Units may not be feasible, since the number of detections varies between Units.
- Avian Sonic Deterrence Pilot Study
 - Ivanpah is proposing to test an additional deterrence measure that incorporates avian sonic deterrence.

- Sonic deterrence has been selected, since the technology affects a limited area near the tower, where survey results indicate flux effects are concentrated.
- Ivanpah will conduct noise monitoring in concordance with applicable state and federal requirements.
- The test will be conducted at Unit 1 to test the synergistic effects of bird buffer and avian sonic deterrence.
- Ivanpah follow-up action items from September and October TAC meeting:
 - Ivanpah presented that the requested specifications for the Bird Buffer deterrent system were provided to the CEC and approval was received prior to installation.
 - Ivanpah provided a process for updating of reported avian data - in seasonal reports, a column will be inserted into the Table in Appendix A of the seasonal report to document any revisions to the data previously reported during that season.

TAC Discussion:

- Discussed the LED lighting replacement for ground lighting; tower lighting is not being replaced because use will be limited to times when it is needed.
- Discussed Bat Deterrence screening investigation, performance and warranty issues; while screening without reducing performance may be possible, warranty issues remain and sonic deterrence appears effective.
- Discussed the flux management: achieving full load at the plant is more related to the accuracy of the heliostats than the cleanliness or number of heliostats.
- Discussed Bird Buffer: Ivanpah staff has noted that the ravens that previously frequented Unit 1 appear to have left the area.
- Discussed the proposed avian sonic deterrence and deployment in Unit 1 synergistically with the Bird Buffer system; Ivanpah explained that avian sonic deterrence is more likely to deter migrants, whereas Bird Buffer is intended to deter resident birds.

Follow-up Action Items:

- Ivanpah to submit a formal proposal for deploying the bat sonic deterrence across all units.
- Ivanpah to submit a formal proposal to test avian sonic deterrence.

ABMMP Summer Seasonal Monitoring Report

- HTH Presentation on Summer Seasonal Monitoring Report:
 - HTH provided a summary of the man hours completed and survey coverage.
 - 19 bird species were recorded during point count surveys; species richness and abundance were higher within the desert bajada grids than within the heliostat grids.
 - Three raptor and three other large bird species were observed during raptor surveys.
 - Human and canine searcher efficiency for summer for small and large birds exceeded the efficiencies assumed in the ABMMP.

- Preliminary spatial analysis indicated singed detections continue to occur nearer the tower.
- Migratory bird mortality was classified as low in accordance with the ABMMP.

ABMMP Update on Fall Seasonal Monitoring and follow-up items

- HTH presentation
 - Avian activity continued to be higher in the desert than in the heliostats during the fall monitoring period.
 - Increases in the number of avian point count observations occurred from summer to fall periods in all areas, primarily due to an increase in migratory birds, an influx of wintering birds and increased flocking.
 - The number of detections increased in the fall, as anticipated.
 - The portion of unknown detections decreased in the fall.
- HTH presentation on follow-up items from September and October TAC meeting:
 - Searcher efficiencies in the power block are being reconsidered to determine potential effects to the precision of the estimate.
 - A table was presented that depicted the five survey protocol revisions to date.
 - HTH provided a summary of the butterfly observations for the fall season.
 - HTH provided a list of the spring report revisions.

TAC Discussion:

- TAC discussed the power block survey protocol; protocol has not been revised, but is being evaluated.
- Discussed that a large number of detections with unknown causes and some portion may be attributable to the project.
- Discussed the number of hours that canines are used in the field for searches.
- Discussed the scavenger and searcher efficiencies and noted that the results are driven by where the tests occur, for example in the power block versus outer solar field; seasonal variation in efficiencies appears low.

Follow-up Action Items:

- HTH to determine if additional searcher efficiency trials are necessary for the canines.
- TAC requested that HTH provide revisions to the Spring and Summer reports to reflect “known” versus “unknown” terminology rather than project-related terminology.

Procedural Item:

- TAC approved meeting notes from September and October.

Next Steps

- Next scheduled TAC Meeting at Ivanpah on February 24, 2015.