

DOCKETED

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**Ivanpah Solar Electric Generating System (Ivanpah)
Avian & Bat Technical Advisory Committee (TAC) Meeting**
December 18 and December 21, 2017 – Meeting Notes

TAC Meeting on December 18, 2017 at the California Energy Commission

TAC Members

Present: Eric Knight – TAC Co-Chair – CEC
Mitch Samuelian – TAC Member – NRG
George Piantka – TAC Member - Solar Partners I, II and VIII,
LLC

Via Teleconference: Magdalena Rodriguez - TAC Member – CDFW
Mike Ahrens – TAC Co-Chair – BLM
Thomas Leeman – TAC Member – USFWS

Invited Guests Present: Tim Sisk – Solar Partners I, II and VIII, LLC
Doug Davis – NRG
Karl Kosciuch – WEST, Inc.
Marc Sydnor – Sydnor and Associates, Inc.

Via Teleconference: Daniel Riser-Espinoza – WEST, Inc.

Introductions

- Attendee introductions (TAC members and invited guests).

Review of Agenda - Agenda items reviewed – no changes.

Prior Follow-up Items:

- September 20th TAC meeting notes review – Item complete – notes to be docketed.
- TAC to provide comments on the Spring Report. Item incomplete – comments due by December 29, 2017.
- TAC to docket winter 2016-2017 report. Item complete - Winter report docketed December 20, 2017.
- NRG to provide a formal proposal to TAC for ABMMP Revision 14. Item complete.
- WEST to consider how the formal and operational surveys may be compared to determine when elevated mortality levels may be occurring. Item complete (see discussion and presentation below)
- NRG requested TAC approval to implement monitoring per the ABMMP Rev 14 proposal. Item complete (TAC approved per discussion below).

Presentation by WEST of Avian Summer Report:

- Summer avian detections and corresponding estimates of mortality were low.

- No obvious temporal pattern in detections was observed in the tower area.
- Per the plan, the mortality was considered “low,” which means “estimated avian mortality or injury levels that have minimal or no potential to negatively affect local, regional, or nation populations within a particular species or group of species.”
- WEST explained the determination of “low, medium and high” is made by comparing species mortality to the species population at the national, regional and local levels. Since Ivanpah is a single location and not a class of infrastructure (like power lines) it is unlikely to affect populations at the national level. Regionally, the area is typically defined as the Mojave Desert Bird Conservation Region (BCR) 33 and it is also unlikely that Ivanpah, a point source, will affect bird populations at this level. Local populations are defined by the genetic flow through populations and natal dispersal. These two factors determine the geography or local area in square miles for species detected at Ivanpah. The population density for each species is determined from the regional Partners in Flight database population estimates. This density is then multiplied by the area determined to include the local population to obtain an estimated local population that is compared to the number of estimated detections from the facility.
- WEST presented an example calculation the local area population using Costa’s hummingbirds. The estimated area of dispersal and genetic flow for the species is a radius of 40 km from the facility. The area within a 40-km radius is 5000 km² and the species density from Partners in Flight is approximately 5.2 birds/km². Therefore, within the 40-km radius there are estimated to be 26,005 hummingbirds. Using the estimated mortality from Ivanpah, the percent of mortality within this population is 0.0231%. Similar levels of mortality are found for the other resident species at less than 1/10th of 1%. For comparison, these mortality levels are much lower than management levels for game bird (15%) or bald eagle local populations (5%).

TAC Discussion:

- TAC discussed the high, medium and low rubric, stating that the seasonal comparison was based on detections. WEST explained that each detection is approximately 6 estimated fatalities and this level of mortality does not approach a level that would be above “low”.
- TAC discussed whether the population within the BCR 33 is representative. WEST stated that BCR 33 is representative of the area and populations are homogenous in the region for the species detected at Ivanpah.
- TAC discussed the potential for using the past data to assess each individual species. WEST stated that they have compared the Year 3 species estimates (including data from the heliostat fields) to the national, regional and local populations. The cumulative list of species shows that very few species have elevated levels of estimated mortality. Most species detected at the facility have five or fewer detection per year.

Follow-up Items:

- TAC to provide comments on the Summer Report by the 29th of December.

Presentation by WEST of the Fall Preview:

- During the Fall season searches were conducted in the tower area (power block and inner high-density heliostat area) as per the approved plan. Solar field heliostat area searches were discontinued per TAC directive.
- Overall, searcher efficiency was within plan assumptions.
- Tower area estimates will be presented in the Fall report.

TAC Discussion:

- None

Follow-up Items:

- None

Avian and Bat Monitoring and Management Plan – Revision 14 – Responses to TAC Comments:

- TAC discussed avian mortality monitoring conducted in conjunction with other surveys/work and expressed a concern that "multi-tasking" could affect the ability of the observer to detect mortalities and the effects of variability in survey areas associated with other work. NRG agreed to remove the "multi-tasking" from surveys and to provide avian-only surveys.
- TAC requested data on how many detections have come from operational personnel as compared to the systematic surveys. WEST stated that the average number of incidental detection by operations personnel is on average 20-25% of all detections in the power block area.
- TAC discussed using the mortality data or trends in the estimates to determine if the deterrent methods are effective for minimizing take. WEST stated that the ABMMP was designed to estimate mortality, not to assess effectiveness of deterrence measures/best management practices (BMPs). Such measures have been voluntarily instituted by the facility to date and no additional assessment is required under the plan, as the evaluation of avian mortality at the site has been classified as low. Furthermore, effectiveness may be masked by several confounding variables that do not allow for a straightforward evaluation of the deterrence.
- TAC asked about the application of the high, medium and low determinations in relation to ESA listed species. NRG stated that the ABMMP does not utilize these categories for ESA species. The categories are assigned to migratory bird species only and have been agreed to by USFWS, BLM, CEC and CDFW per the current plan.
- TAC discussed how the cost cap requirements in the USFWS guidance is related to the requirements of other agencies, particularly how these are related to decision-making requirements that do not allow for the costs to be considered. NRG explained implementing the USFWS cost cap guidance in the plan does not trigger new decision making by the other agencies, since the plan was authorized through the BLM Record of Decision and the CEC Commission Decision.

- TAC requested a summary of the adaptive management actions and "results" to date. NRG stated that a summary of the adaptive management actions will be provided as an appendix to the revised plan. Regarding the results, deterrence/BMPs effectiveness is difficult to assess with several confounding variables.
- TAC discussed whether the monitoring protocol described in this revision will provide sufficient statistical power to test how well future deterrence or other mortality avoidance measures will work (e.g., altering where the flux is parked, per Sandia's modeling). NRG stated that Sandia's work has concluded since slew times for the heliostats (time necessary to move) are inadequate to allow further operational adjustments. WEST reiterated that the evaluation of the effectiveness of the existing measures is not triggered under the existing plan and is complicated by confounding variables.
- TAC discussed the need for a table showing the estimated mortality by species in the context of local, and regional populations. WEST stated that a table estimating mortality by species will be provided as an appendix to the revised plan.
- TAC asked for clarification regarding whether the surveys are simply incidental finds by operational personnel. NRG stated the proposal is to train operational personnel to survey to the tower area (inner high density heliostats and bower block) at 100% using the same protocol as currently used. Operations personnel will be assigned only to search for avian mortality and not to be assigned any other task at the same time.
- TAC discussed the how detections during other activities, such as vegetation surveys, will be taken into account. WEST stated these detections would be considered incidental finds, consistent with past practice.
- TAC requested that a checklist/data sheet be provided in the plan. NRG agreed that the datasheet for avian detections will be provided in an appendix to the revised plan.
- TAC discussed if a method exists that allows for the comparison of data collected going forward with the data collected during the first four years of systematic surveys. WEST presented a proposed method to compare the data from the first four years of surveys to the proposed surveys.
 - WEST showed how the monitoring under REV 13 compares to REV 14.
 - Specifically, WEST showed that REV 13 and REV 14 tower area sampling locations/transects are the same, the total number of surveys will be the same despite the slightly different intervals, and data collection, tabulation and tracking methods will remain the same.
 - Therefore, WEST stated that estimating expected detections is possible via a simulation model. The model is calibrated by inputting the four-year data set for searcher efficiency and scavenger trials with a given number of fatalities and search interval. WEST has constructed this model and the model has been calibrated to the actual results of year 3 monitoring.
 - WEST stated that the process would allow for the detections to be placed in the context of the 4 years of data that were previously collected. However, if the upper confidence limits are exceeded, then searcher efficiency and carcass persistence may have changed, or perhaps the detection numbers have changed.

- TAC discussed if searcher efficiency trials would be conducted on the operational staff. WEST stated it was not necessary, since the number of detections can identify if an upset condition is occurring.
- TAC discussed if the avian biologist or Designated Biologist could provide specific training to operations personnel on the methods to search for and document avian detections. NRG agreed to develop a training program and provide a description in the revised plan.
- TAC discussed the searcher continuity at the site using operational personnel. NRG stated that the pool of staff is up to 10 people with three people per unit and very low turn-over at the site.
- TAC requested a determination of whether a searcher efficiency trial can be held for the operations staff personnel. NRG agreed to examine if a trial can be conducted.

Follow-up Items:

- NRG will include an appendix to the revised plan with monitoring datasheet.
- NRG will include the high-medium-low assessment in the Year 4 annual report and as an appendix to the revised plan.
- NRG will include a summary of the deterrence measures in the revised plan.
- NRG will send the final winter report (2016-2017), Spring 2017, Summer 2017 and the final September 2017 TAC notes to TAC for docketing.
- NRG will provide memorandum to TAC describing survey methods and describe the training of the operational staff proposed under Revision 14.
- A follow-up teleconference/webex will be held to discuss the final approval of Revision 14 of the plan.

Next Meeting:

Via conference call – December 21, 2017^t at 10:00 am.

Next TAC Meeting February 15, 2018 at 10AM.

TAC Meeting on December 21, 2017 via WEBEX (Continuation) –

Attendees: Mike Ahrens – TAC Co-Chair - BLM
Eric Knight – TAC Co-Chair - CEC
Thomas Leeman – TAC Member - USFWS
George Piantka – TAC Member – Solar Partners
Tim Sisk – NRG Operations
Doug Davis – NRG Operations
Karl Kosiuch – WEST, Inc.
Daniel Riser-Espinoza – WEST, Inc.
Marc Sydnor – Sydnor and Associates, Inc.

Introductions:

- Attendee introductions (TAC members and invited guests)

Review of Agenda:

- Agenda limited to discussion of proposed methods and training for operational avian mortality surveys at the facility. No additions.

NRG Summary of the Proposal for Training and Search methods for Operational Surveys:

- NRG presented that the training for searchers would consist of both classroom and field work to familiarize all searchers in proper methods and techniques.
- The classroom-based portion would consist of lecture and handout materials, and photographic or specimen-based (if available) for species identification;
- A field-based portion that would allow trainees the opportunity to practice and receive feedback on conducting carcass searches, completing data forms, and following protocols for assessing and assisting injured birds and bats;
- A qualitative assessment of learning outcomes for each participant; with avian biologists following and observing onsite personnel during the transition. The avian biologists will document any concerns noted during the training of onsite personnel.
- A training log to be updated with each trainee's name and contact information upon successful completion of the course.

TAC Discussion:

- TAC requested that copies of the handout materials other education materials presented to the onsite searchers be provided in the plan. NRG agreed to provide these materials in an appendix to REV 14 of the plan.
- TAC requested that copies of the training logs be provided. NRG indicated the log forms would be provided in the plan and completed logs would be available onsite for review by the TAC.

- TAC discussed searcher efficiency, specifically being able to compare between previous searchers and trained on-site personnel. NRG agreed to conduct a searcher efficiency trial after transition to the REV 14 is complete.
- TAC discussed whether operations staff will identify bird species correctly. NRG indicated that in REV 14, the species determination will be done by an avian biologist or the Designated Biologist, prior to the data being finalized on the monthly report.
- TAC discussed that avian specimens may require freezing for up to two weeks prior to identification and the potential for mis-identification to occur as a result. WEST stated that based on their experience, the identification after two weeks for singeing grade and species should not be problematic.
- TAC discussed bi-weekly versus 14-day and requested that 14-day be the standard, weather permitting. NRG agreed to revise the plan accordingly.
- TAC discussed the surveys within the power block structures, requesting clarification of the procedures. NRG indicated that surveys would be conducted in the same manner for all buildings and equipment as in the previous version of the plan.
- TAC discussed carcass marking by staff and requested that markers cover carcasses to prevent scavenging, when possible. NRG agreed to revise the plan accordingly.
- TAC discussed that with these changes the plan is sufficient for field operations.

Follow-up Items:

- The plan will include an appendix with educational materials that will be provided to the onsite searchers.
- The plan will include an appendix with training log forms.
- The plan will be revised to include a searcher efficiency trial for the on-site searchers.
- The plan will be revised to include 14-day search intervals and the weather conditions.
- The plan will include the building and structure search continuity.
- The plan will include using markers to cover carcasses and prevention of scavenging when the location of the carcasses permits covering.
- The TAC will send a written authorization to proceed with the field program per the proposed Revision 14.

Next Meeting:

Next TAC Meeting February 15, 2018 at 10AM.