Appendix D-13

Swainson's Hawk Nest Survey 2011
Final

Swainson's Hawk Nest Survey—Alta East Wind Project

TO: Kevin Martin, Director of Environmental Permitting
Terra-Gen Power, LLC

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DATE: May 20, 2011

CH2M HILL Engineers, Inc. (CH2M HILL) completed a survey to determine if nests of Swainson's hawk (SWHA)(*Buteo swainsoni*) are present in or within 5 miles of the proposed Alta East Wind Project site.

Project Description

Alta Windpower Development, LLC (AWD) proposes to construct the Alta East Wind Project in the Tehachapi region of southern California. Portions of the project would be located on land managed by the U.S. Bureau of Land Management (BLM) and privately owned land under the jurisdiction of Kern County. The proposed development is a wind energy facility with a nameplate capacity rating of up to 360 megawatts of wind generation capacity and includes ancillary facilities and supporting infrastructure. Up to 120 wind turbine generators would be installed. The project includes repowering a historical wind power project site north of State Route 58 on BLM lands and infilling existing wind facilities south of SR 58 in the area of Cameron Ridge.

Regulatory Background

SWHA is listed as threatened under the California Endangered Species Act (CESA) and is afforded protection under the Migratory Bird Treaty Act. The California Environmental Quality Act (CEQA) and CESA require consideration of direct, indirect, temporary, permanent, individual project, and cumulative impacts related to such species. CEQA allows approval of projects with significant effects when measures have been included to avoid or mitigate those effects, or specific considerations make such measures infeasible and specific benefits outweigh the significant effects (CEQA Guidelines Section 21081). The CESA regulates the taking of state-listed species. "Take" is defined as to "hunt, pursue, catch, capture, or kill, or to attempt to hunt, pursue, catch, capture, or kill." (Fish and Game Code Section 86). Incidental take authorization requires that all impacts on the species are minimized and fully mitigated and that mitigation is roughly proportional to the extent of the impacts of the taking (14 CCR 783.4).

If SWHA nests are present near the proposed project site, construction and operation activities could cause direct, indirect, individual, or cumulative adverse impacts on the

species. In addition to risk of take during construction and operation activities, potential impacts of the project include loss of foraging habitat and disruption of breeding activities. Therefore, understanding the proximity of nesting SWHAs to the proposed project site is necessary to evaluate potential take or impact risk to nesting members of the regional population, and assessment of SWHA use of the project area via point count methodology is warranted.

Methods

In accordance with the CEC and CDFG 2010 guidance, CH2M HILL completed surveys for SWHA nests within 5 miles of the project site. The objective of the surveys was to identify nests and/or nesting birds, if present, to verify proper avoidance or mitigation actions that could be implemented prior to project design and environmental impact analysis.

CEC and CDFG (2010) recommend that ground surveys for SWHA nests are conducted on foot or by vehicle within 5 miles of the project; however, CH2M HILL and AWD implemented a combination of helicopter surveys and protocol-level surveys because land control is not available outside the project area. Although the detection rate of SWHA nests from helicopter is not expected to be 100 percent, multiple aerial surveys with experienced raptor biologists were completed to optimize effectiveness and ensure adequate survey of areas that would otherwise be missed during restricted ground surveys. The combination of these two techniques differs from those recommended by CEC and CDFG; however, they represent an effective method to determine presence or absence of SWHA nests that does not compromise the integrity of the SWHA nest survey. This method demonstrates reasonable precaution on behalf of AWD to detect potentially nesting pairs, as would be necessary to ensure that all impacts on the species are minimized and mitigated.

Helicopter-based aerial surveys were completed in April and May 2010 prior to the issuance of the CEC and CDFG 2010 protocol. Additional helicopter-based surveys were completed in late February and late March 2011. In accordance with the CEC and CDFG 2010 protocol for Survey Period II (arrival and nest building), CH2M HILL completed three separate ground-based surveys between April 25 and April 30, 2011. The CEC and CDFG protocol recommends that at least two survey periods are evaluated using the ground-based survey techniques; however, CH2M HILL evaluated Survey Period I (prearrival: January to March 31) in February and March 2011, and Survey Period I and Survey Period III (egg laying, incubation: May 1 to May 30) in April and May, 2010 using helicopter-based surveys. Potentially suitable nesting habitats warranting survey were defined as those including Joshua tree woodlands, grasslands, desert scrub communities, agricultural land, riparian habitats, windrows, residential shade trees, and artificial nest structures, such as transmission poles. Steep, mountainous terrain and densely-wooded habitats were excluded from the surveys due to the fact that they are unlikely to support nesting SWHA. All roads and accessible areas containing potential habitat were evaluated according to the CEC and CDFG 2010 protocol during the April 2011 ground-based surveys. In addition, these areas, as well as other areas where vehicle or pedestrian access was unavailable, were visually inspected from helicopter during the aerial surveys.

Before conducting surveys in 2011, CH2M HILL contacted Justin Sloan, Environmental Scientist with CDFG, for up-to-date information on SWHA nests in the area, habitat considerations, approval of participating biologists, and possible refinement of the

recommended survey protocols. No known nests were identified by CDFG within 5 miles of the project site; however, Mr. Sloan mentioned that SWHAs have been confirmed nesting to the south of the survey area closer to Rosamond, California, and that all roads and accessible areas containing potential habitat should be evaluated according to the protocol. As discussed above, all such roads and accessible areas were evaluated. Mr. Sloan also mentioned that evaluation of SWHA use of the project area is necessary to determine if nesting hawks migrate through the project area or use it at other times of the year. Avian use surveys, conducted by Western Ecosystems Technology, Inc. (WEST), have been ongoing on the project site at approximately one-week intervals since May 2009 independent of this SWHA nest survey and one SWHA was recorded on April 1, 2011.

Ground-based surveys were conducted by CH2M HILL wildlife biologists Bridget Canty and Gary Santolo, both of whom are approved by CDFG for implementing the SWHA survey protocol. Helicopter-based surveys were completed by WEST wildlife biologists Andrea Chatfield and Troy Rintz, both of whom are highly qualified and experienced at conducting aerial surveys for raptor nests.

Results

Ground-based survey routes consisted of a combination of paved and dirt public roads and two-track roads through public and private land where access could be obtained. Areas within the project area where road access was not available were inspected on foot. The total survey area consisted of 94,894 acres, of which approximately 67,523 acres supported potentially suitable habitat that was carefully inspected during ground and aerial surveys (Figure 1). Habitats in the survey area were diverse, consisting of grassland and desert shrub communities, irrigated and nonirrigated agricultural fields, areas of rugged topography, and some riparian corridors containing trees. Areas of rugged topography were excluded from the survey area as unsuitable nesting habitat for SWHA as shown in Figure 1.

No SWHAs or nests were observed during the ground-based or aerial surveys completed for the project.

Discussion and Recommendations

SWHA is a highly mobile, opportunistic species; however, placement of nests is dependent on proximity to foraging habitats that can be entirely different from the vegetation selected for nest sites (Woodbridge, 1998). They spend time soaring over open habitats and can be readily detected through patient observation of the type implemented during ground surveys described in this memorandum. During the late April, 2011 ground surveys completed for this project, nesting birds would most likely have been constructing nests or displaying courtship behaviors or, less likely, confined to the nest for egg laying or incubating activities that would have made the birds difficult to detect. However, surveys were completed three times during Survey Period II in 2011 in accordance with the CEC and CDFG (2010) protocol, with each portion of the survey area evaluated at different times of day to enhance probability of detection.

Although SWHA nests are not large or conspicuous, they are detectable from the air. Helicopter surveys for this project were completed prior to leaf-out; therefore, nests in

non-evergreen deciduous trees would have been visible upon careful inspection by surveyors, if present. Although detection rates for SWHA nests are unknown in these habitat types, both the helicopter surveyors and Dave Phillips (CH2M HILL senior biologist and, CDFG-approved SWHA surveyor) have documented many SWHA nests during aerial surveys completed in other parts of the species' range prior to leaf-out from both helicopters and fixed-wing aircraft, suggesting that it is an effective technique to detect nests, if present. AWD's use of this technique to compensate for the limited private land access is a prudent and conservative adaptation of the CEC and CDFG recommended ground-based protocol to identify SWHA nests.

The CEC and CDFG protocol recommends that at least two survey periods be evaluated using the ground-based survey method. However, due to the repeated negative survey results on four separate aerial surveys and the three Period II ground-based protocol surveys completed for this project, it is highly unlikely that nesting SWHAs are present in or near the project area. Although additional surveys completed during Period III (egg laying/incubation) or Period IV (fledging) would strengthen conclusions of absence, it is improbable that nesting birds are present in the project area. The survey area contains some habitat features that could be conducive to nesting; however, historical records and these survey results indicate that nesting SWHAs are highly unlikely to be present in or near the project site and therefore no impact on nesting SWHAs is expected to occur from project construction or operation.

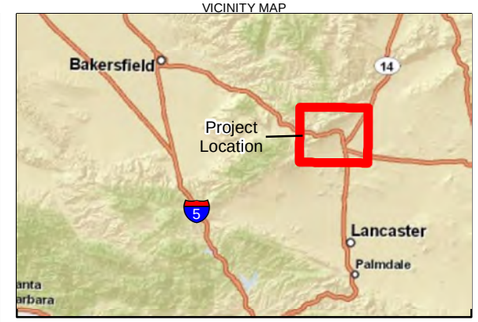
In summary, based on the results of four aerial nest surveys and the recently completed Period II ground-based protocol surveys, the project is unlikely to affect SWHAs or their nests and no mitigation or take permitting associated with impacts to SWHAs or their nests in proximity to the project site would be necessary.

References

California Energy Commission [CEC] and California Department of Fish and Game [CDFG]. 2010. Swainson's hawk survey protocols, impact avoidance, and minimization measures for renewable energy projects in the Antelope Valley of Los Angeles and Kern Counties, California. June 2. Available online at: http://www.dfg.ca.gov/wildlife/nongame/docs/SwainsonsHawkProtocol6-2-10.pdf

Woodbridge, B. 1998. Swainson's Hawk (*Buteo swainsoni*). *In* The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. Available online at: http://www.prbo.org/calpif/htmldocs/riparian_v-2.html

VICINITY MAP



LEGEND

- Kern County Roads
- Alta East Wind Project Area
- 5-Mile Survey Area Buffer
- Potentially Suitable Nesting Habitat

Land Management

- BLM
- Private
- State

N

0 0.25 0.5 1 1.5

Miles

1:92,870

FIGURE 1
Swainson's Hawk Nest Survey
Alta East Wind Energy Project
Kern County, California