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June 25, 2010

DOCKET
09-AFC-8

DATE JUN 25 2010

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California Energy Commission
Attn Docket No. 09-AFC-8
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

Re: Genesis Solar Energy Project; 09-AFC-8

Dear Docket Clerk:

Enclosed are an original and one copy of **REBUTTAL TESTIMONY OF SCOTT CASHEN ON BEHALF OF THE CALIFORNIA UNIONS FOR RELIABLE ENERGY ON BIOLOGICAL RESOURCES FOR THE GENESIS SOLAR ENERGY PROJECT**. Please docket the original, conform the copy and return the copy in the envelope provided.

Thank you for your assistance.

Sincerely,

/S/

Rachael E. Koss

REK:bh
Enclosures

2364-087a

STATE OF CALIFORNIA

**Energy Resources Conservation
and Development Commission**

In the Matter of:

The Application for Certification for the
GENESIS SOLAR ENERGY PROJECT

Docket No. 09-AFC-8

**REBUTTAL TESTIMONY OF SCOTT CASHEN
ON BEHALF OF THE CALIFORNIA UNIONS FOR RELIABLE
ENERGY ON BIOLOGICAL RESOURCES FOR
THE GENESIS SOLAR ENERGY PROJECT**

June 25, 2010

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I. INTRODUCTION

I have been working for the California Unions for Reliable Energy (“CURE”) as a consultant on the Application for Certification (“AFC”) for the Genesis Solar Energy Project (“Project”) since the data adequacy phase. I have reviewed numerous documents and have conducted my own investigations and analyses regarding the Project’s potential environmental impacts and alternatives.

I have a Master’s of Science Degree in Wildlife and Fisheries Science from the Pennsylvania State University, University Park. The degree program included coursework in Landscape Ecology, Biometrics, Statistics, Conservation Biology, and Wetland Ecology. For my thesis, I conducted seven seasons of independent research on avian use of restored wetlands. The U.S. Fish and Wildlife Service subsequently used my technical report as a model for other habitat restoration monitoring projects in Pennsylvania.

My employment experience has included work in the fields of wildlife biology, forestry, and natural resource consulting. Much of my work over the past two and a half years has involved review of environmental documents associated with development of large-scale solar energy facilities. To date, I have served as an expert on 12 different solar projects, 9 of which are being sited in the Mojave or Sonoran Desert. I am currently concluding a two-year contract I hold with the State of California to conduct surveys for the Peninsular bighorn sheep near Anza-Borrego Desert State Park. I serve as a member of the scientific review team responsible for assessing the effectiveness of the U.S. Forest Service’s implementation of the Herger-Feinstein Quincy Library Group Act.

For the past two and a half years I have operated my own consulting business. I previously served as a Senior Biologist for TSS Consultants and ECORP Consulting. Other positions I have held have included conducting wildlife research for the National Park Service, the Point Reyes Bird Observatory, and the University of California. While in graduate school I served as an instructor of Wildlife Management and as a teaching assistant for a course on ornithology.

My testimony is based on the activities described above, the Applicant’s Revised Opening Testimony dated June 18, 2010, and the knowledge and experience I have acquired during more than 18 years of working in the field of natural resources management.

II. IMPACTS TO WILDLIFE FROM PROJECT NOISE

The Applicant has proposed modifications to noise mitigation measures such that loud noises would be avoided from February 15 to April 15 when the Project would result in noise levels over 60 dBA in nesting habitat “*within 250 feet of the site’s borders, to avoid impacts to breeding birds immediately outside the Project area.*”¹ In addition, the Applicant has proposed scenarios under which it would **not** be required to provide mitigation for Project noise. These include:

- a. if these same noise levels and types began prior to Feb 15, in which case it would be assumed that birds had become habituated to the noise prior to nesting;
- b. if nesting bird surveys confirm that no birds are nesting within 250 feet of the Project border, or have completed nesting; and
- c. if nest monitoring confirms that birds do not alter their nesting behavior in response to the noise.²

The Applicant’s proposed changes would undermine the effectiveness of Staff’s proposed mitigation. The Applicant did not perform full noise modeling for Project operation.³ However, Staff has estimated that at a distance of five miles from the Project site, steam blows would attenuate to about 82 dBA and noise from pile driving would attenuate to 47 dBA.⁴ Based on his literature review, Kaseloo (2006) reported that breeding bird densities decreased when nesting birds were exposed to noise levels ranging from 36 to 58 decibels (depending on the species).⁵ Research conducted by Reijnen et al. (1997) led the researchers to conclude that sound levels above 50 dBA could be considered potentially deleterious to breeding birds.⁶ These conclusions—which are based on scientific research—indicate that habitat within several miles of the Project would be subject to noise disturbance, and that without appropriate mitigation, some species would be adversely affected. The Applicant’s proposal to consider mitigation only for areas within 250 feet of the Project border ignores the majority of land (and thousands of acres) susceptible to adverse Project noise effects. It also focuses on land where many bird species will have already abandoned their territories due to the Project’s “edge effect.”

¹ Applicant’s Revised Opening Testimony, p. 7.

² Id.

³ RSA, p. C.7-9.

⁴ Id, p. C.7-8.

⁵ Id.

⁶ Reijnen R, R Foppen, G Veenbaas. 1997. Disturbance by traffic of breeding birds: evaluation of the effect and planning and managing road corridors. *Biodiversity and Conservation* 6: 567-581.

A. The Applicant Has No Basis to Presume Habituation

The Applicant's presumption that birds would become habituated if these "same" noise levels and types began prior to February 15 relies on the assumption that the species of interest would be present both before and after nesting is initiated. However, it does not account for the fate of birds that arrive on the breeding grounds after Project noise has begun. Exclusion of wildlife from suitable habitat via disturbance is often equivalent to human-caused mortality.⁷ Project noise would deter many species from nesting in the Project region, particularly if alternative sites are not readily available. Demonstrating alternative sites are available requires more than a cursory examination of other nearby habitats that would not be exposed to Project noise; it would require data indicating the availability of an unoccupied territory for each bird that is displaced by Project noise. Obtaining such data would require rigorous scientific study, which has not been attempted by the Applicant.

Evidence is accumulating that impulse noise and continuous noise differ both in their potential physical effects, namely hearing damage, and in their sensory-mediated physiological and behavioral effects.⁸ Context, including acoustic context, is an important influence on habituation and other learning (Shalter 1984), as is illustrated in a series of laboratory experiments on sensitization (which is the reverse of habituation).⁹ Davis (1974) presented albino rats with sudden-onset loud tones (110-120 dB) in the presence of a background of continuous white noise.¹⁰ When the background noise was moderate (60 dB), the rats' startle response diminished after a few presentations of the tone, showing habituation.¹¹ However, with only 20 dB louder background noise, the rats showed successively stronger startle responses, or sensitization.¹² The Applicant's presumption that birds would become habituated to Project noise ignores the context of noise exposure, including the various environmental variables (e.g., weather) that would affect noise levels at various times (e.g., before and after nesting is initiated).

⁷ National Park Service. 1994. Report to Congress: Report on effects of aircraft overflights on the National Park System; Larkin R. 1996. Effects of military noise on wildlife: A literature review. USA CERL Technical Report [internet; cited 22 Jun 2010]. Available from: http://nhsbig.inhs.uiuc.edu/bioacoustics/noise_and_wildlife.pdf

⁸ Id.

⁹ Id.

¹⁰ Id.

¹¹ Id.

¹² Id.

B. The Absence of Bird Nests Cannot Be Confirmed and is Not an Appropriate Metric to Conclude No Impact

Bird nests are difficult to detect. As a result, the Applicant has no scientific basis to conclude it would be able to confirm that no birds are nesting within 250 feet of the Project border (especially through the two surveys proposed by Staff). Furthermore, even if a bird is not nesting within 250 feet of the Project border, it may be using the area (within 250 feet) for foraging and communication (e.g., territory defense). The Applicant's proposal ignores these functions, which are essential to nesting success and survival.

C. The Applicant Has Not Provided Techniques for Nest Monitoring

The Applicant's proposal to eliminate mitigation if nest monitoring confirms that birds do not alter their nesting behavior in response to the noise lacks support. Specifically, the Applicant has not provided any information on how it would conduct monitoring, or how it would determine birds are not altering their nesting behavior.

Wildlife may be adversely affected by noise, yet exhibit no visual cues of disturbance.¹³ For example, there have been several studies that have demonstrated increased stress hormones (but no visual response) in animals exposed to noise.¹⁴ Elevation of these hormones can reduce reproductive output and result in numerous physiological ailments.¹⁵ Psychological tests on humans clearly indicate that noise affects performance on tasks conducted after the noise ceases.¹⁶ This occurs even if no effects appear during the noise. Such behavioral after-effects of noise are well documented for both steady and time-varying noises (Cohen 1980, Glass and Singer 1972).¹⁷ Even when habituation to a stimulus has occurred, significant physiological effects may nevertheless be taking place.¹⁸

¹³ Id.

¹⁴ Mancini KM, DN Gladwin, R Vilella, MG Cavendish. 1988. Effects of aircraft noise and sonic booms on domestic animals and wildlife: a literature synthesis. National Ecology Research Center Report # NERC-88/29.

¹⁵ Id.

¹⁶ National Park Service. 1994. Report to Congress: Report on effects of aircraft overflights on the National Park System; Larkin R. 1996. Effects of military noise on wildlife: A literature review. USA CERL Technical Report [internet; cited 22 Jun 2010]. Available from: http://nhsbig.inhs.uiuc.edu/bioacoustics/noise_and_wildlife.pdf

¹⁷ Id.

¹⁸ Id.

Monitoring avian response to Project noise represents a *reactive* measure (i.e., implemented after disturbance has occurred). Given the numerous, significant consequences noise can have on wildlife, and given most bird species are protected by the Migratory Bird Treaty Act, the Applicant’s mitigation measures should be *proactive* (i.e., designed to avoid a disturbance).

D. The Applicant’s Rationale is Not Supported by Scientific Literature

In its testimony, the Applicant states “[t]he purpose of minimizing noise impacts is to *insure* that wildlife outside the project disturbance area, especially nesting birds, are not adversely affected by construction noise.”¹⁹ If the purpose is to insure wildlife are not adversely affected, noise mitigation measures should be strengthened—not weakened.

The Applicant claims a buffer distance of 250 feet is mandated for nesting burrowing owls “so it [250 feet] is used as the benchmark for species that have a lesser legal status or none.”²⁰ The Applicant’s statement is misleading. First, the Migratory Bird Treaty Act (Act) provides legal protection to almost all of the bird species that may nest within the Project region. The Act makes it unlawful to cause a “take” to any covered bird species, and individuals have been successfully prosecuted for violating the Act, even when take was unintentional. Second, 250 feet is *not* used as a benchmark for other species with similar legal status. For example, Suter and Jones (1981) recommended keeping construction and similar noisy activities at least one kilometer (3,280 feet) away from golden eagle, prairie falcon, and ferruginous hawk nest sites to avoid nest abandonment.^{21, 22} As I discussed in my opening testimony, there is considerable intra and inter-species variation in wildlife response to noise disturbance. If such variation is ignored, conservation strategies and biological descriptions will be inaccurate and rarely effective. As a result, noise buffers should be based on the ecology of the various target species, not the buffer distance recommended for burrowing owls.

Scientific literature suggests burrowing owls are more tolerant of noise disturbance than many other species. Miller (2003) reported that burrowing owls can tolerate a certain amount of non-threatening human activity, noise,

¹⁹ Applicant’s Revised Opening Testimony, p. 7. [emphasis added].

²⁰ Id.

²¹ Suter GW II, JL Jones. 1981. Criteria for golden eagle, ferruginous hawk, and prairie falcon nest site protection. Raptor Research 15(1):12-18.

²² Ferruginous hawk and prairie falcon have legal status comparable to the burrowing owl, although ferruginous hawks do not breed in California. Although the golden eagle is not a “listed” species, it is protected under the Bald and Golden Eagle Protection Act.

and disturbance as long as other habitat requirements are met.²³ Plumpton and Lutz (1993) found that burrowing owls largely ignored road traffic.²⁴ Other bird species (including other special-status species) are much less tolerant of noise disturbance. Therefore, to insure that *all* wildlife outside the project disturbance area are not adversely affected by Project noise, the Applicant should establish a buffer that is based on the requirements of the most sensitive species, not one of the least sensitive ones.

III. SELECTION CRITERIA FOR COMPENSATION LANDS

The Applicant has proposed modifying the selection criteria for compensation lands. Specifically, the Applicant has proposed that (a) the quality and function of the compensation lands selected for acquisition be equal to or better than the quality and function of the habitat impacted; and (b) compensation lands need not be occupied by desert tortoise.²⁵

Establishing the “quality and function” of habitat is a complicated endeavor. For it to be a useful measure, habitat quality must be explicitly linked with demographic features.²⁶ Thus, habitat quality should not be based on the number of organisms, but on the demographics of individual populations.²⁷ Both biotic and abiotic factors contribute to land “functions.” For example, soils (abiotic) enhance water quality, whereas bats (biotic) prevent insect outbreaks. Thus, understanding the ecological roles of a species is essential to establishing “functions.”²⁸

The Applicant has not established the “quality and functions” of the Project site, nor has it established how it would measure them at the compensation lands. Furthermore, the absence of desert tortoise on the compensation land (as proposed by the Applicant) inherently reduces its functions, and may indicate that it is lower quality. As a result, the Applicant’s proposed changes to the selection criteria should be rejected.

²³ Miller J. 2003. Petition to the State of California Fish and Game Commission and supporting information for listing the California population of the Western Burrowing Owl (*Athene cunicularia hypugaea*) as an endangered or threatened species under the California Endangered Species Act. Available from Ctr. Biol. Diversity, 1095 Market St., Suite 511, San Francisco, CA 94103.

²⁴ Plumpton DL, RS Lutz. 1993. Influence of vehicular traffic on time budgets of nesting burrowing owls. *Journal of Wildlife Management* 57:612-616.

²⁵ Applicant’s Revised Opening Testimony, pp. 9,10.

²⁶ Morrison ML. 2002. *Wildlife restoration: techniques for habitat analysis and animal monitoring*. Washington (DC): Island Press.

²⁷ Id.

²⁸ Id.

IV. MITIGATION FOR BURROWING OWLS

The Applicant's proposed changes to Staff's recommended mitigation for Project impacts to burrowing owls include conducting surveys "in areas where burrowing owls or burrows showing owl use were observed during desert tortoise clearance surveys."²⁹ The measures that have been proposed to mitigate Project impacts to burrowing owls remain vague. Consequently, additional information is required before Staff can conclude the measures might be effective. I outline the basis for this assertion in the subsequent testimony.

First, although the methods used for pre-construction burrowing owl surveys were not provided in the RSA, the Applicant's testimony suggests desert tortoise clearance surveys will be the primary means of detecting owls. Desert tortoise clearance surveys involve implementing linear transects throughout the Project area.³⁰ Scientific research suggests linear transects are an ineffective method for surveying burrowing owls. Conway and Simon (2003) studied the detection probability associated with burrowing owl survey methods. The researchers concluded "[w]alking line-transect surveys proved ineffective and inefficient for monitoring burrowing owls at large (statewide) scales."³¹ Additional research by Conway and others (2008) concluded a significant ($P < 0.025$) relationship between detection probability and nestling period, ambient temperature, and the interactions among the other five factors that were examined (i.e., study area, time of day, timing within the breeding season, wind speed, % cloud cover).³² The proposed pre-construction surveys for burrowing owls do not appear to consider any of these variables except perhaps time of day (the Applicant did not specify whether desert tortoise clearance surveys would adhere to the time of day restrictions identified for burrowing owl surveys).³³

Based on their research, Conway and others recommended three surveys (one during the egg laying and incubation phase, another when most owls have young nestlings, and a third when most nestlings will be spending time above ground).³⁴ They further recommended conducting surveys when

²⁹ Applicant's Revised Opening Testimony, p. 19.

³⁰ RSA, p. C.2-227.

³¹ Conway CJ, JC Simon. 2003. Comparison of detection probability associated with burrowing owl survey methods. *Journal of Wildlife Management* 67(3):501-511.

³² Conway CJ, V Garcia, MD Smith, K Hughes. 2008. Factors affecting detection of burrowing owl nests during standardized surveys. *Journal of Wildlife Management* 72(3):688-696.

³³ See RSA, p. C.2-244.

³⁴ Conway CJ, V Garcia, MD Smith, K Hughes. 2008. Factors affecting detection of burrowing owl nests during standardized surveys. *Journal of Wildlife Management* 72(3):688-696.

ambient temperature is $> 20^{\circ}$ C, and wind speed is < 12 km per hour.³⁵ Lastly, call-broadcast surveys were shown to significantly increase the number of owls detected ($P < 0.001$). These recommendations and findings should be incorporated into the Applicant's pre-construction owl surveys.³⁶

Second, the Applicant has proposed maintaining the functionality of replacement burrows "for a maximum of two years"³⁷ (the RSA recommends five years).³⁸ The Applicant has not identified the appropriate variable of interest, which is the *minimum* length of time burrows would be maintained. The Applicant's stated rationale for reducing the maintenance period is "[i]f owls do not use the burrows for two years, then it is assumed that the relocated owls have chosen other nest burrows."³⁹ However, equally valid assumptions are that the Applicant did not provide appropriate replacement burrows, or that it did not maintain their functionality. Both of the latter assumptions would suggest the need to implement adaptive management and additional monitoring—not relinquishment of responsibility.

The Applicant's testimony states "[i]f owls are using the burrows, then the burrows should not be disturbed."⁴⁰ Presumably this means the Applicant will not be disturbing occupied burrows to construct the Project (the RSA suggests potential for passive relocation).⁴¹

Third, the Applicant has proposed eliminating the RSA's requirement for weed control at the burrowing owl relocation area. The Applicant's stated rationale is that "[w]eeds are already present throughout the Project Vicinity. The relocation area will not be in an area with unusually high concentrations of weeds."⁴² The Applicant's rationale does not support its position. If weeds are already present in the vicinity, and if the relocation area will not be an area with unusually high concentrations of weeds, then it is the exact type of area where weed control *should be* implemented (i.e., to prevent conversion from non-infested to infested). Furthermore, the Applicant's testimony fails to explain how it was able to conclude the relocation area will not be in an area with unusually high concentrations of weeds because the relocation area has not been identified.

³⁵ Id.

³⁶ Id.

³⁷ Applicant's Revised Opening Testimony, p. 21.

³⁸ RSA, p. C.2-248.

³⁹ Applicant's Revised Opening Testimony, p. 21.

⁴⁰ Id.

⁴¹ See RSA, p. C.2-245.

⁴² Applicant's Revised Opening Testimony, p. 21.

V. MITIGATION FOR PROJECT IMPACTS TO MOJAVE FRINGE-TOED LIZARD

In its Revised Opening Testimony, the Applicant states it does not believe the Project will have indirect impacts to sand transport, and thus it has eliminated Staff's proposed mitigation for what the Applicant calls "non-existent indirect effects."⁴³ I cannot comment on the validity of the Applicant's argument about sand transport. However, I have reviewed the testimony of Dr. Greg Okin, whose research was cited in the RSA. Dr. Okin testified that "[r]emoval or disturbance of the pavement clasts that protect the [Project] surface can be expected to have major impacts on the availability and transport of wind-borne material."⁴⁴ Dr. Okin further testified "Qal and Qsr surfaces, while stable in the absence of a disturbance, have the potential to become significant sources of offsite impacts in terms of both biological resources (e.g., vegetation and fauna in the downwind area) and air resources (e.g., dust). The potential for these surfaces to yield significant offsite impacts appears to have been inadequately evaluated in the RSA."⁴⁵

In addition to sand transport, the RSA identified numerous other indirect Project impacts that are expected to adversely affect Mojave fringe-toed lizards. These include the introduction and spread of invasive plants; erosion and sedimentation of disturbed soils; fragmentation and degradation of remaining habitat; increased road kill hazard from construction and operations traffic; and harm from accidental spraying/drift of herbicides and dust suppression chemicals.⁴⁶ These are not "non-existent indirect effects" as suggested by the Applicant.⁴⁷ Therefore, I concur with Staff's conclusion that compensatory mitigation should be provided for indirect Project impacts to Mojave fringe-toed lizards. However, as stated in my opening testimony and in the testimony provided by the Center for Biological Diversity, effectively offsetting Project impacts requires a higher mitigation ratio than the 0.5:1 ratio currently proposed by Staff.⁴⁸

⁴³ Applicant's Revised Opening Testimony, pp. 45,46.

⁴⁴ Testimony of Dr. Greg Okin, p. 3.

⁴⁵ Id., p. 4.

⁴⁶ RSA, p. C.2-65.

⁴⁷ Applicant's Revised Opening Testimony, p. 46.

⁴⁸ Testimony of Ilene Anderson, Center for Biological Diversity, p. 4.

VI. MITIGATION MEASURES FOR EVAPORATION PONDS

A. Deterrent Methods

The Applicant has requested that a variety of deterrent methods, including but not limited to netting, be considered as mitigation for the potentially significant impacts associated with the proposed evaporation ponds.⁴⁹ Specifically, the Applicant proposes to investigate feasible and effective technologies by monitoring and analyzing the effectiveness of each technology that it implements.⁵⁰ The Applicant's proposed changes to Staff's recommended mitigation should be rejected for the following reasons.

First, the Applicant's proposal significantly undermines CEQA's goals of full disclosure and informed decision making. The Applicant has not provided **any** information on the technologies that would be implemented or data that substantiate other technologies are effective deterrents for the species of concern. In contrast, complete screening or netting has been demonstrated to be effective in excluding birds and it has been adopted by many state and federal fish hatcheries.⁵¹

Second, the Applicant has not provided **any** information on how it would monitor and analyze each technology, including the data that would be collected, the methods for collecting these data, and whether statistical procedures would be used to support its analyses.

Third, many visual and sound-making devices are commercially available for frightening birds. However, the value of these devices is usually limited to short-term control.⁵² Because of all the variables involved, the success of a frightening program is dependent on the skill and motivation of the operator.⁵³ Gorenzal et al. (1994) reports that frightening devices are not effective unless used aggressively in a carefully planned program.⁵⁴ The Applicant has not provided a carefully planned program.

Fourth, sound-making devices that are used as deterrents have the potential to exacerbate unmitigated Project noise (e.g., steam blows). If the Applicant proposes use of such devices, it needs to provide an analysis of their contribution to adverse noise impacts.

⁴⁹ Applicant's Revised Opening Testimony, p. 48.

⁵⁰ *Id.*, p. 48.

⁵¹ Gorenzal WP, FS Conte, TP Salmon. 1994. Bird Damage at Aquaculture Facilities in Hygnstrom SE, RM Timm, GE Larson, editors. Prevention and Control of Wildlife Damage. University of Nebraska, Lincoln.

⁵² *Id.*

⁵³ *Id.*

⁵⁴ *Id.*

B. Pond Monitoring

The Applicant has modified Staff's recommended mitigation, such that it now states: "[i]f dead or entangled birds are detected, the Designated Biologist shall take immediate action *to assess the situation and* to correct the source of mortality or entanglement, *if appropriate*."⁵⁵ The Applicant needs to provide additional information before its proposed modification to the condition is considered. Specifically, the Applicant needs to clarify how it will "assess the situation." In most instances, a necropsy would be the most accurate way to assess the situation and correct the source of mortality. I recommend a necropsy be required for any dead birds found not only at the evaporation ponds, but anywhere within the Project site where cause of death cannot be readily identified.

Further, the clause "if appropriate" appears to introduce a large element of subjectivity into the monitoring program and it eliminates identifiable triggers for remediation. As a result, it should be rejected.

VII. MITIGATION FOR SPECIAL-STATUS PLANT SPECIES

A. Avoidance and Minimization Measures

The RSA concluded that the avoidance, minimization and compensation measures described in Condition of Certification BIO-19 (special-status plant mitigation) would minimize the impacts to Harwood's eriastrum, Harwood's milk-vetch, and any other special status plant species to a level less than significant.⁵⁶ The conclusion presented in the RSA was based on Staff's recommended avoidance and minimization measures being applied to all special-status plants.⁵⁷

In its Revised Opening Testimony, the Applicant stated that onsite avoidance will not be possible "where 100% site grading and surface disruption is necessary to construct and operate the Project, or on any area that has been cleared during construction."⁵⁸ The RSA indicates grading activities will occur over an extensive portion of the site (including the Colorado River Substation).⁵⁹ Staff's conclusion on significance was based on the presumption that the Applicant would implement the recommended avoidance and mitigation measures. Because the Applicant is unable to

⁵⁵ Applicant's Revised Opening Testimony, p. 48.

⁵⁶ RSA, p. C.2-70.

⁵⁷ Id., p. C.2-102.

⁵⁸ Applicant's Revised Opening Testimony, p. 23.

⁵⁹ RSA, pp. B.1-19,21.

implement these measures, the Project would result in unmitigated significant impacts to special-status plants.

The Applicant has proposed eliminating the need to prepare a Special-Status Plant Impact Avoidance and Minimization Plan (“Plan”).⁶⁰ The Applicant’s rationale for eliminating the Plan includes the statement that “[n]o listed, special-status plants have been observed at Genesis; nor are they expected to be found during Fall 2010 surveys, and therefore a separate Plan is not necessary.”⁶¹ The Applicant’s statement is misleading and lacks foundation.

First, it needs to be clear that the Applicant’s use of the term “listed” incorporates only those species that are listed under the State or Federal Endangered Species Act (CESA and ESA, respectively); it does not incorporate the rare and/or sensitive species listed by the California Native Plant Society (CNPS), Bureau of Land Management, California Department of Fish and Game, U.S. Forest Service, and U.S. Fish and Wildlife Service. In some cases, species that are not covered by CESA or ESA face greater risk of extinction (or extirpation) than those that are covered. California Department of Fish and Game guidelines explicitly state that a species may meet the definition of rare or endangered if it: (a) is on CNPS Lists 1A, 1B, or 2; (b) has local significance; or (c) is listed in the California Natural Diversity Database (CNDDB).⁶² The RSA notes that very rare and critically imperiled species may occur on the Project site, and for these species, the Project owner would be required to incorporate site design modifications to minimize impacts and meet the avoidance standard.⁶³

Second, the RSA indicates “listed” plant species have the potential to occur in the Project study area.⁶⁴ Whereas the Applicant may not expect to be find listed plant species during the fall 2010 surveys, listed plant species may be present.

Finally, mitigation for the Project should not be decided by expectations of survey results for surveys that have not yet been conducted. Such a presumption is unrealistic for two reasons. First, it is difficult to predict the outcomes of surveys due to the new and unexpected plant discoveries that have been occurring in the desert. Second, the flora of the Desert Floristic Province is poorly understood and therefore surveys may

⁶⁰ Applicant’s Revised Opening Testimony, p. 24.

⁶¹ Id.

⁶² CDFG. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. Available at: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html#Plants.

⁶³ RSA, p. C.2-113.

⁶⁴ Id., Biological Resources Table 3, p. C.2-22.

yield completely unexpected results. These rationalizations are supported throughout the RSA, and are best exemplified by the RSA's discussion of a potentially *new taxon* of saltbush (*Atriplex*) that was discovered on the margins of Palen Dry Lake last year.⁶⁵ The RSA also discusses the "unpredictability of the region's rare plant flora,"⁶⁶ and indicates "rare plants have very specific microhabitat requirements that are often poorly understood."⁶⁷

B. Triggers

The Applicant proposes to eliminate triggers for implementation of mitigation. Triggers for remedial measures, as well as specific and mandatory performance standards are essential to an effective mitigation program. As a result, the Applicant's proposal to eliminate triggers should be rejected.

C. Considerations for Increased Protection

The RSA requires additional protection for plant populations that represent a significant range extension or disjunct occurrence (e.g., is located outside of the 9-quad region centered on the nearest known occurrence). The Applicant proposes to modify this consideration with the clause "that is not likely solely the result of a lack of surveys."⁶⁸ Conclusions reached through the Applicant's clause would be totally subjective. As a result, the Applicant's proposed modification should be rejected.

The Applicant states "[s]pecies that are largely on private lands already generally have a higher CNPS listing or sensitivity ranking than other species. A new threats analysis for each species, based on these factors, is not warranted."⁶⁹ The Applicant's statement is unsubstantiated, and at best represents an inappropriate generalization. As a result, it has not provided a sufficient basis to eliminate threats analysis.

D. Compensation Ratios

The Applicant has proposed reducing each of the various compensation ratios recommended in the RSA. The Applicant's stated rationale for doing so is that "[t]here are no listed species."⁷⁰ Surveys to document rare plant

⁶⁵ Id., p. C.2-30.

⁶⁶ Id., p. C.2-112.

⁶⁷ Id., p. C.2-169.

⁶⁸ Applicant's revised opening testimony, p. 33.

⁶⁹ Id.

⁷⁰ Id, pp. 38, 40.

species on the Project site *have not been completed*. Therefore, the Applicant's rationale lacks any merit and the RSA's proposed compensation ratios should be maintained (or increased).

E. Alternatives to Compensation

In lieu of acquiring lands or undertaking habitat enhancements, the Applicant has proposed seed collection.⁷¹ Collected seeds would be stored and made available for contingency efforts.⁷² There is no conceivable way that the Applicant's proposed seed collection measures could be considered adequate replacement for acquiring lands or undertaking habitat enhancements.

First, CNPS guidance explicitly states losses of plant populations considered "significant" under CEQA cannot be mitigated to less-than-significant levels using *ex situ* conservation techniques (e.g., propagation and transplantation).⁷³ Second, the Applicant does not identify or discuss any of the variables associated with the mitigation proposal. These include (a) the location of lands for seed dispersal, and a mechanism for the conservation and management of these lands; (b) the success criteria associated with the mitigation program, and triggers for remedial measures if success criteria are not achieved; (c) the means for assessing and preventing genetic contamination at the receiving site; and (d) the monitoring that will be conducted to evaluate success of the proposed mitigation. Each of these variables is likely critical to the potential for the proposed mitigation to succeed.

Although seed collection and dispersal might have some merits, I reiterate that it cannot be considered an effective means of mitigating impacts. Fiedler (1991) conducted a thorough review of mitigation-related transplantation, relocation and reintroduction attempts involving special-status plants in California.⁷⁴ The author reported only 8 of the 53, or 15 percent of the 53 attempts reviewed in her study should be considered fully successful.⁷⁵ Although Fiedler reported several causes for the failed attempts, the common result was that the plants died.

⁷¹ Applicant's revised opening testimony, p. 43.

⁷² *Id.*

⁷³ California Native Plant Society. 1992. Policy on appropriate application of *ex situ* conservation techniques. Available from: http://www.cnps.org/cnps/archive/ex_situ.pdf

⁷⁴ Fiedler PL. 1991. Mitigation-related transplantation, relocation and reintroduction projects involving endangered and threatened, and rare plant species in California. Final Report. Available at: nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3173.

⁷⁵ *Id.*

VIII. METHODS FOR SPECIAL-STATUS PLANT SURVEYS

The Applicant proposes to “[d]etermine locations of special-status plant populations during preconstruction surveys, if those surveys can be conducted when plants would be present and identifiable.”⁷⁶ Presumably this means the Applicant would conduct plant surveys while conducting clearance surveys for desert tortoise and other taxa. The “catch-all” survey approach is not reliable. The Staff Assessment for the Imperial Valley Solar Project concluded plant survey results were not adequate because surveyors were distracted by looking for certain special-status wildlife species.⁷⁷

A. Documenting Occurrence

The Applicant proposes to document the full extent of special-status plant species populations, both onsite and offsite, “as practical.”⁷⁸ The Applicant has not defined what it considers “practical.” Consequently, the need to document existing conditions is at the sole discretion of the Applicant, and is therefore unenforceable.

The Applicant states the full extent of “commonly occurring” special-status species, and species that are “dense within the population,” need not be documented.⁷⁹ For these species, the Applicant proposes to identify the part of the plant population that may be affected by Project activities.⁸⁰ It is well established that there are numerous indirect impacts of the Project, and that many of these impacts are likely to affect plants occurring offsite. As a result, the Applicant should be required to document all special-status species occurring within one mile of the Project footprint.

IX. BUFFERS FOR ENVIRONMENTALLY SENSITIVE AREAS

The RSA discusses the need to establish buffers around environmentally sensitive areas (ESAs). ESAs would be established for protected plant species occurrences, and they would be a minimum of 20 feet from the uphill side of the occurrence and 10 feet from the downhill side.⁸¹ The Applicant proposes establishment of ESAs “as much as feasible,” and where establishment of a buffer is not practical, the Applicant would install

⁷⁶ Applicant’s Revised Opening Testimony, p. 25.

⁷⁷ Staff Assessment for the Imperial Valley Solar Project, p. C.2-3.

⁷⁸ Applicant’s revised opening testimony, p. 29.

⁷⁹ Id.

⁸⁰ Id.

⁸¹ RSA, p. C.2-249.

other barriers such as coirs or drift fences.⁸² The Applicant has not defined what is considered “feasible.” Consequently, implementation of ESAs is at the sole discretion of the Applicant, and is therefore unenforceable.

Moreover, scientific knowledge further dictates the proposed protection measures would be ineffective. Protection measures (including buffer size) need to be based on a plant’s ecological requirements (e.g., sunlight; moisture; shade tolerance; edaphic, physical, and chemical characteristics) and the threats to its viability (including adjacent land use). Staff presented this very conclusion in the Staff Assessments prepared for the Ivanpah Solar Electric, Imperial Valley Solar, and Calico Solar projects (among others). Staff on the Calico Solar project concluded a 250-foot buffer would be needed for on-site plant protection.⁸³ There is no basis to conclude a buffer roughly 1/12th the size of that recommended for the Calico Solar Project would provide sufficient protection at the Genesis Project site, especially when considering the technology associated with the Calico Solar Project would cause considerably *less* of a threat to ESAs.⁸⁴

The ecological requirements of most plant species are poorly understood. However, scientific knowledge supports the inference that a project of this size (i.e., approximately 1,800 acres) will disrupt the ecological processes (e.g., seed dispersal, pollination, and gene flow) that may be necessary to maintain viable populations. The RSA lists at least 10 distinct, indirect impacts that Staff anticipates will affect special-status plants.⁸⁵ I cannot envision a scenario in which a buffer of 10 feet would be likely to protect a plant from these impacts. The Energy Commission Staff that evaluated the Ivanpah Solar Electric Project derived a verdict. Specifically, Staff concluded mitigation that relied on maintaining islands of protected plants within a disturbance matrix was “infeasible to protect the special-status plants from significant indirect impacts (i.e., from introduction and spread of non-native plants, alterations of the local hydrology, higher than normal dust levels, etc.)”⁸⁶ A similar conclusion is warranted for special-status species within the Project site, regardless of the buffer size, and irrespective of the Applicant’s proposed changes to the condition of certification.

⁸² Applicant’s Revised Opening Testimony, p. 25.

⁸³ Calico Solar Project SA/DEIS, p. C.2-175.

⁸⁴ The SunCatcher technology does not require mass-grading, uses less water (including for mirror washing), and may generate less shade. See Calico Solar Project SA/DEIS, Section C.2.

⁸⁵ RSA, p. C.2-111.

⁸⁶ Energy Commission Staff’s Rebuttal Testimony, Ivanpah Solar Electric Generating System. p. 28.

X. MONITORING OF ENVIRONMENTALLY SENSITIVE AREAS

The RSA recommended monitoring of the ESAs for the duration of Project construction, and for the life of the Project. The Applicant has proposed eliminating this monitoring. The Applicant's stated rationale is: "[t]he purpose of the ESA is to avoid impacts to special status plants. Once the potential for impacts in the vicinity of the ESA is no longer present, monitoring of the ESA is no longer necessary."⁸⁷ The Applicant's rationale lacks any merit and its proposed changes should be rejected. As I discussed in the previous section, Staff expects the Project to generate at least 10 types of indirect impacts that are expected to affect special-status plants.⁸⁸ Most of these impacts would pose a threat for the life of the Project (and after).

The RSA requires the Applicant to submit a monitoring report every year for the life of the Project.⁸⁹ The stated intent of the monitoring report is to monitor the effectiveness of protection measures for all avoided special-status plants. According to the RSA, the monitoring report shall include "a description of the remedial action, if warranted and planned for the upcoming year."⁹⁰ However, the RSA does not provide the triggers for remedial action or a means of enforcing it. As a result, the proposed mitigation lacks assurance that potentially significant Project impacts will be mitigated.

XI. GROUNDWATER-DEPENDENT VEGETATION SPECIES WITHIN THE PROJECT VICINITY

The Applicant's Revised Opening Testimony states, "Genesis has demonstrated that there are no groundwater dependent communities or vegetation within the Project Disturbance area or vicinity, including Ford Dry Lake."⁹¹ This is not an accurate statement.

The Applicant's statement is not supported by its own data. Desert dry wash woodland communities occur in the Project vicinity.⁹² According to the California Department of Fish and Game, desert dry wash woodland typically contains species such as "blue leaf palo verde, littleleaf palo verde, [and] desert ironwood."⁹³ In its "Survey for Jurisdictional Waters and Wetlands" report, the Applicant states, "the larger washes (typically over 6 feet) that contain sandy, gravely substrate and well-defined banks typically

⁸⁷ Applicant's Revised Opening Testimony, p. 26.

⁸⁸ RSA, p. C.2-111.

⁸⁹ RSA, p. C.2-262.

⁹⁰ Id.

⁹¹ Applicant's Revised Opening Testimony, p. 51.

⁹² AFC, Bio Tech Report, p. ES-1; RSA, Figure 11-B.

⁹³ Laudenslayer WF Jr. 1988. Desert Wash Vegetation In A Guide to Wildlife Habitats of California. State of California, Resources Agency, Department of Fish and Game.

include scattered desert wash tree species such as ironwood [and] palo verde.”⁹⁴ Within the survey area⁹⁵ alone, the Applicant estimated ironwood trees were associated with four different ephemeral washes and palo verdes with at least six washes.⁹⁶ Large communities of between 740 and 832 trees were estimated present in washes 24, 25, and 26.⁹⁷ Varieties of palo verde as well as ironwood are characterized as groundwater-dependent species throughout the scientific literature.⁹⁸

Furthermore, the Applicant’s assertion that no groundwater-dependent communities or vegetation exist within the Project vicinity contradicts information presented in the NECO Plan and the conclusions made by Staff in the RSA. According to the NECO Plan, “[l]arge nonsucculent perennials [in the plan area] are able to survive using moisture **deep in the soils**” (i.e., by using groundwater).⁹⁹ The RSA provides extensive discussion of groundwater-dependent vegetation in the Project area, and it sufficiently justifies its presence.¹⁰⁰

XII. INACCURATE CLASSIFICATION OF PHREATOPHYTES WITHIN THE PROJECT VICINITY

The Applicant has testified that phreatophytes¹⁰¹ **are** located within the Project area.¹⁰² This is in direct contradiction to its claim that no groundwater-dependent species exist within the Project area and vicinity.

⁹⁴ TetraTech EC, Inc. 2009 Aug. Survey for Jurisdictional Waters and Wetlands at the Genesis Solar Energy Project, Eastern Riverside County, California. p. 7.

⁹⁵ Defined by the Applicant as the proposed disturbance area, as well as a 500-foot buffer corridor for the linear facility routes. See TetraTech EC, Inc. 2009 Aug. Survey for Jurisdictional Waters and Wetlands at the Genesis Solar Energy Project, Eastern Riverside County, California.

⁹⁶ TetraTech EC, Inc. 2009 Aug. Survey for Jurisdictional Waters and Wetlands at the Genesis Solar Energy Project, Eastern Riverside County, California.

⁹⁷ Id, p. C-1; TetraTech EC, Inc., 2010. Revisions to Jurisdictional Waters for the Genesis Solar Energy Project.

⁹⁸ Nilsen, Erik Tallak, M. Rasoul Sharifi, and Philip W. Rundel. 1984. Comparative Water Relations of Phreatophytes in the Sonoran Desert of California. *Ecology*, 65(3), pp. 767-778.; Solbrig and Orians (1977) as cited in Barbour, Michael G., Todd Keeler-Wolf, and Allan A. Schoenherr. 2007. *Terrestrial Vegetation of California*, Third Edition, University of California Press.

⁹⁹ BLM and CDFG. 2002. Final Environmental Impact Statement. Proposed Northern & Eastern Colorado Desert Coordinated Management Plan. Bureau of Land Management, California Desert, Riverside, CA. p. 3-3. [emphasis added].

¹⁰⁰ See C.2-18,19.

¹⁰¹ Defined as a deep-rooted plant that obtains a significant portion of the water that it needs from the zone of saturation or the capillary fringe above the zone of saturation. Wikipedia contributors. Phreatophyte [Internet]. Wikipedia, The Free Encyclopedia; 2009 Jun 8, 21:45 UTC [cited 2010 Jun 18]. Available from: <http://en.wikipedia.org/wiki/Phreatophyte>.

¹⁰² Applicant’s Revised Opening Testimony, p. 51.

The Applicant's assertion that these plant species are facultative phreatophytes (as opposed to obligate) is used to defend the claim that groundwater pumping for Project activities will not impact the plant communities because the plants can rely on surface water alone. Specifically, the Applicant's testimony states: "[n]o obligate phreatophytes occur within the 10-mile pumping centroid of the Project wells. All tree and shrub species that occur in this zone and *could be considered* facultative phreatophytes (ironwood, bush seepweed, palo verde) are dependent on surface water, not groundwater, even considering capillary rise."¹⁰³ This statement cannot be substantiated by the scientific literature.

On the contrary, palo verde has been documented to have root systems that extend up to 80 meters in depth.¹⁰⁴ There is no consensus within the scientific community on whether ironwood or palo verde can be considered solely facultative phreatophytes, nor is there consensus on how regional variations in climatic conditions influence their groundwater requirements. With the combined effects of drought events and potential climate change impacts on precipitation levels in the Sonoran Desert, phreatophytes may increasingly rely on groundwater resources for survival. The assumption made by the Applicant that these vegetation communities are facultative (after denying their existence in the first place), and therefore unaffected by groundwater pumping, is indefensible and unreliable. The Applicant would have had to conduct site-specific evaluations to make this claim, which were not performed.

XIII. THE GROUNDWATER-DEPENDENT VEGETATION MONITORING PLAN ("BIO-25")

The Applicant proposed deleting the Groundwater-Dependent Vegetation Monitoring Program ("BIO-25") as a mitigation measure. In addition to the inaccurate and unfounded statements discussed above, the Applicant cites the survival of a honey mesquite community northwest of Palen Lake during record groundwater drawdowns throughout the 1980s and 1990s as proof that predicted minimal groundwater drawdowns from Project activities would have no effect on phreatophytes in the Project vicinity.

It is illogical to base a scientific claim regarding the drought response of unrelated species within a 10-mile radius on the observations of an isolated honey mesquite community, especially based on historical aerial imagery and not field data. Every desert plant species responds differently to drought and

¹⁰³ Id. [emphasis added].

¹⁰⁴ Solbrig and Orians. 1977. Cited in Barbour, Michael G., Todd Keeler-Wolf, and Allan A. Schoenherr. 2007. *Terrestrial Vegetation of California*, Third Edition, University of California Press.

water stress¹⁰⁵ and cannot be generalized through the aerial image data of one community of a different species. Furthermore, the Groundwater Resources Cumulative Impact Analysis Technical Memorandum that emphasizes the survival of the honey mesquite community clearly states that the western portion of the basin (in which the honey mesquite community is located) “may be expected to respond differently than the eastern portion of the basin during pumping.”¹⁰⁶ The Genesis Project Area is located within the eastern portion of the basin, and Project groundwater pumping may therefore impact groundwater-dependent vegetation in this region very differently. The survival of the honey mesquite community on the western portion of the basin cannot be used as an indicator that Project groundwater pumping will have no impact on groundwater-dependent plant species in the Project area.

The Applicant’s proposal to reject the vegetation monitoring plan (“Plan”) would prevent timely awareness of potentially significant adverse Project affects on groundwater-dependent vegetation communities. The Plan was explicitly created to monitor the unresolved uncertainties in the Project’s impacts on these plant communities. The expert testimony of Dr. Tom Meyers (on behalf of intervenor Center for Biological Diversity) underscores the substantial level of uncertainty within the Applicant’s groundwater impact analysis and the RSA. Dr. Meyers testified “[t]he SA and Revised SA and the hydrology reports from the applicant’s contractor vastly underestimate the impacts the proposed project will have on the groundwater balance and flow systems of Chuckwalla Valley and the nearby Colorado River.”¹⁰⁷

The Applicant also proposed deleting Condition of Certification BIO-26,¹⁰⁸ which requires remedial action for adverse effects to groundwater-dependent vegetation. Elimination of the remedial actions required through Condition of Certification “BIO-26” could result in long-term and potentially irreparable landscape-wide ecological consequences.

The potentially significant adverse impacts of Project water pumping on groundwater resources and groundwater-dependent vegetation were discussed extensively in the RSA. My opening testimony and the testimony of CBD intervenor Tom Meyers support the RSA’s conclusion that the

¹⁰⁵ Nilsen, Erik Tallak, M. Rasoul Sharifi, and Philip W. Rundel (1984). Comparative Water Relations of Phreatophytes in the Sonoran Desert of California. *Ecology*, 65(3), pp. 767-778.

¹⁰⁶ WorleyParsons. 2009. Technical Memorandum-Groundwater Resources Cumulative Impact Analysis for the Genesis Solar Power Project, Riverside County, CA. p. 6.

¹⁰⁷ Meyers, Tom. 2010. Testimony of Tom Meyers, Re: Impacts to Water Resources from the Proposed Genesis Solar Energy Project Docket No. (09-AFC-8), Intervenor Center for Biological Diversity.

¹⁰⁸ Applicant’s Revised Opening Testimony, p. 52.

Applicant must prepare mitigation and remedial action strategies for potential impacts to groundwater-dependent vegetation.

XIV. THE DECOMMISSIONING AND CLOSURE PLAN (“BIO-23”)

Staff’s proposed Condition of Certification “BIO-23” requires the Applicant to develop a Decommissioning and Closure Plan and cost estimate that meets the requirements of BLM’s guidelines in 43 CFR 3809.550 et seq., subject to review and revisions from the CPM in consultation with BLM, USFWS and CDFG.¹⁰⁹ The Applicant proposes to delete “BIO-23” in its entirety on the grounds that “[t]he full disturbance area will have been mitigated by Conditions of Certification and therefore the only requirement for such a plan is BLM administering regulations.”¹¹⁰ The Applicant also states the condition “is not necessary to mitigate any significant environmental impact nor is it necessary to comply with any LORS over which the Commission has jurisdiction.”¹¹¹

The development of mitigation strategies at the beginning of the Project does not preclude the need for a comprehensive and agency-reviewed Decommissioning and Closure Plan. I concur with Staff’s conclusion that a comprehensive Decommissioning and Closure Plan needs to be developed and cannot be deferred.¹¹² I also agree with expert Ilene Anderson (on behalf of intervenor Center for Biological Diversity) who testified,

[t]he Draft Decommissioning and Closure Plan is woefully inadequate in proposing how the almost 3 square miles is to be revegetated. The Draft Revegetation Plan appears to only address the 59.8 acres of temporary construction impacts due to project and transmission line construction. Clearly a more comprehensive revegetation strategy needs to be developed for the entire site of approximately 1800 acres.¹¹³

XV. THE APPLICANT’S UNSUPPORTED REVISIONS OF THE DECOMMISSIONING AND CLOSURE PLAN CONDITION OF CERTIFICATION, “BIO-23”

In the event that the Commission does not delete “BIO-23” from the Conditions of Certification and instead requires the Applicant to include a Decommissioning and Closure Plan for biological resources, the Applicant recommended a variety of unsupported modifications to the RSA. Specifically, the Applicant removed the requirement to prepare a cost

¹⁰⁹ RSA, p. C.2-270.

¹¹⁰ Applicant’s Revised Opening Testimony, p. 51.

¹¹¹ Id.

¹¹² RSA, pp. C.2-123, 124.

¹¹³ Testimony of Ilene Anderson, Center for Biological Diversity, p. 7.

estimate for “BIO-23” according to the guidelines set forth in BLM’s 43 Code of Federal Regulations (CFR) 3809.550 et seq. The Applicant also removed the requirement set forth in the RSA and mandated by BLM’S guidelines that the Project owner must provide financial assurances to guarantee an adequate level of funding to implement and complete the Decommissioning and Closure Plan. The Applicant’s proposed changes lack foundation and should be rejected.

**Declaration of Scott Cashen
Genesis Solar Energy Project**

Docket 09-AFC-8

I, Scott Cashen, declare as follows:

- 1) I am an independent biological resources consultant. I have been operating my own consulting business for the past three years. Prior to starting my own business I was the Senior Biologist for TSS Consultants.
- 2) I hold a Master's degree in Wildlife and Fisheries Science. My relevant professional qualifications and experience are set forth in the attached testimony and are incorporated herein by reference.
- 3) I prepared the testimony attached hereto and incorporated herein by reference, relating to the biological resource impacts of the Genesis Solar Energy Project.
- 5) It is my professional opinion that the attached testimony and maps contained therein are true and accurate with respect to the issues that they address.
- 6) I am personally familiar with the facts and conclusions described within the attached testimony and maps, and if called as a witness, I could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 6/24/10

Signed: 

At: Walnut Creek, CA

PROOF OF SERVICE

I, Bonnie Heeley, declare that on June 25, 2010 I served and filed copies of the attached **REBUTTAL Testimony of Scott Cashen on Behalf of the California Unions for Reliable Energy on Biological Resources for the Genesis Solar Energy Project**. 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/genesis. The document has 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 electronically to all email addresses on the Proof of Service list and by depositing in the U.S. Mail at South San Francisco, CA with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list to those addresses NOT marked “email preferred.” I also sent a copy via email and an original and one copy via U.S. mail to the California Energy Commission Docket Office.

I declare under penalty of perjury that the foregoing is true and correct. Executed at South San Francisco, CA on June 25, 2010.

_____/S/_____
Bonnie Heeley

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