STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of:	)	Docket No. 08-AFC-13
	)	
Application for Certification for the Calico Solar Project (formerly known as SES Solar One)	)	August 23, 2010

Staff's Calico Brief

INTRODUCTION

On August 4 – 6, 2010, the Committee assigned to the Calico Solar Project (Calico project) held evidentiary hearings to establish a record upon which to base findings and conclusions for the Presiding Member's Proposed Decision (PMPD). The PMPD will address whether to certify the Calico project and, if so, under what conditions. It will be presented to the full Energy Commission for consideration later this year. At the conclusion of the evidentiary hearings, the parties agreed to a filing date of August 20 for Opening Briefs, and at the August 18, 2010 evidentiary hearing, the parties agreed to postpone that date until August 23, 2010. No Reply Briefs will be required. This is staff's Opening Brief, addressing those issues that require resolution by the Committee or have resulted in deleted, modified, or new conditions of certification.

Air Quality

The only issue that has been raised with respect to air quality is the applicant's identification in its July 21, 2010 rebuttal testimony of its proposed use of one 75 kW generator and one 500 kW generator to provide construction power at the project site. (Exh. 82, p.3.) The applicant also provided testimony that the use of the generators would not exceed the federal conformity threshold. (Exh. 83, p. 3.) On the first day of evidentiary hearings, staff testified that without the underlying calculations, it could not conclude that

the project would comply with the state NO_2 standard, nor that the federal conformity threshold would not be exceeded. (August 4, 2010, RT 103:1-13 (Walters).)

The applicant subsequently provided the additional calculations, which were docketed on August 4, 2010.[1] Staff reviewed the applicant's revised emission estimates and performed its own 1-hour NO_2 modeling analysis. After reviewing the applicant's revised emissions estimate, staff determined that the emission estimate revisions are correct. Therefore, staff is in agreement with the applicant's testimony that the project's estimated annual NOx and PM10 emissions during construction would remain below General Conformity applicability thresholds. The applicant did not provide a revised modeling analysis to determine the potential for impacts to the State 1-hour NO_2 standard (the one standard of concern for this engine proposal). Staff completed its own modeling assessment that considered the engines to be located at various locations within the site, including the likely location of the central service area. Staff found that the maximum impacts, adding the new engine impacts to the previously modeled worst case construction impacts and worst-case background are under the State 1-hour NO_2 standard of 339 $\mu g/m^3$. Staff's modeling analysis indicated that if the engines were located at the central service area, essentially where the emergency engine generator will be located during operation, that the worst-case combined 1-hour NO_2 impacts were 292.1 $\mu g/m^3$, and that if the engines were located at other locations around the site the worst-case impacts could be as high as 337.7 $\mu g/m^3$, both below the State 1-hour standard. Staff determined that the condition of certification AQ-SC9 is necessary to ensure that these engines will comply with the applicant's proposal and staff's impact assessment and not create significant NO_2 impacts or exceed General Conformity applicability thresholds. Staff distributed this condition as Exhibit 307. When the Hearing Office asked whether any party had issue with the condition, only the applicant spoke, indicting its concurrence. (August 6, 2010, RT 226:11-18 (Kramer, Foley-Gannon).)

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[1] Staff is not certain whether this was provided an Exhibit number.

Biological Resources

Impacts to the desert tortoise will be fully mitigated as required by the California Endangered Species Act (CESA) if staff's recommended conditions are adopted.

The Calico project would be located on land occupied by desert tortoise, a species that is listed as "threatened" under both the federal and state Endangered Species Acts. Approximately 2,140 acres of the project site (that portion located south of the BNSF railroad line) is considered lower-quality tortoise habitat because of past disturbance, including from the construction of pipelines, and the presence of roads and railroad tracks that isolate the area from surrounding habitat. (Exh. 300, p. C.2-33; Exh. 310, p. 6.) Two of the 57 desert tortoises that were located on the project site during surveys were in this southern area, and staff has concluded that impacts in this area can be mitigated through the acquisition, protection and management of compensation lands at a 1:1 mitigation-to-impact ratio. (Exh. 300, p. C.2-33; Exh. 310, p. 6.) The remaining 4,075 acres of the project site, consisting of the entire portion of the project site lying north of the railroad tracks, supports a higher density of tortoises, is less degraded from previous activities, and has better connectivity to surrounding natural lands. (*Ibid*..) Staff consulted with the Department of Fish and Game (DFG) and U.S. Fish and Wildlife Service (FWS) as it assessed the site's and the mitigation required for desert tortoise (*Ibid*.), and determined that requiring 3:1 compensation (i.e. acquisition of three acres of tortoise habitat for every acre of habitat lost to the project) in this area would be consistent both with mitigation ratios applied previously by the Energy Commission and by DFG when issuing CESA take permits involving high-quality habitat. (Exh. 310, p. 16.)

In testimony on August 5, 2010, DFG's representative noted that the Supplemental Staff Assessment lacked enough information about project impacts on desert tortoise for DFG to state whether the conditions proposed by staff would fully mitigate project impacts as required by CESA. (August 5, 2010, RT 134:21-135:1 (Moore).) In particular, DFG indicated the SSA needed to include an extrapolation of the number of tortoises found on the project site to account for tortoises that were likely undetected during the survey[2] and

[2] The Supplemental Staff Assessment (Exhibit 300) included projections to account for undetected tortoises within the original project footprint, estimating that with 104 tortoises detected within the project site as originally proposed, 176 tortoises might have to be translocated. (Exh. 300, p. 2-71.) But the report omitted similar calculations for the reduced project footprint, in which 57 of the detected tortoises were found.

to also include information about the draft tortoise translocation plan.[3] (*Id*. at 154:2-7 and 12-13.)

Staff subsequently developed revisions to its desert tortoise analysis to include projections of undetected adult and subadult tortoises on the project site as well as juvenile tortoises that are most often undetected and likely to be killed. (Exh. 310, pp 1-26, 57-62.) Based on the use of the USFWS formula to calculate tortoise densities on the project site and BLM data for adjacent areas, the new analysis estimated that approximately 93 adult tortoises and up to 96 juvenile tortoises are expected to occur on the proposed project site. In addition 436 eggs may be present in the project footprint. Given the likelihood that all of the eggs will be lost and assuming approximately 85 percent of the juveniles will be overlooked, staff concluded that 35-82 juvenile tortoises (i.e., 85 percent of 41-96) and 436 eggs would be lost. Staff estimates that the total number of tortoises that require translocation would be 107 tortoises (93 adults and subadults, and 14 juveniles). This projects to an estimated 321 tortoises (93 adults + 14 juveniles*3) that would require handling, radio tagging, and long term monitoring. This number is based on the assumption that for every one tortoise translocated, one tortoise is handled at the translocation and control site. *(Ibid.)*

These projections are generally consistent with figures in the draft translocation plan and the BLM's Final Environmental Impact Statement, except that the other documents contain a calculation error that resulted in an underestimation of the number of juvenile tortoises likely to be on site, and will be need to be corrected to more closely match staff's analysis. revised to more closely reflect the juvenile tortoise estimates by staff. (August 18, 2010, RT 273:1-17 (Huntley), 351:14-16 (Blackford).)

At the August 18 hearing, a representative for DFG testified that the project would result in the take of more tortoises than DFG had ever authorized for any single project through its incidental take permitting process. (August 18, 2010, RT 265:18-266:2 (Moore).) She also indicated that despite staff's additions to its desert tortoise analysis in Exhibit 310 DFG could not say whether the project's impacts on desert tortoises were fully mitigated with staff's proposed conditions. (*Id*. at 266:7-10 (Moore).) was According to DFG, there

[3] The draft translocation plan was prepared by the applicant and submitted for BLM review, and provided to staff and other parties on August 4, 2010.

were unresolved issues involving the host sites that will receive tortoises from the project site and calculations of the number of tortoises that would be translocated from the project site. (*Id.* at 266:22-267:3, 268:18-269:5, 271:17-24 (Moore).) DFG proposed that because of the high density of tortoises on the northern side of the project, the project's impact on desert tortoises and tortoise habitat re mitigated further than previously proposed by bumping the mitigation ratio over a portion of the site north of the railroad tracks from 3:1 to 5:1. (*Id*. at 270:10-16.)

Staff decided to support DFG's proposal for a new 5:1 mitigation ratio for a portion of the project in light of DFG's testimony on August 18. As described by a Deputy Director:

> [T]he energy commission staff has worked cooperatively and closely with the other renewable action team agencies, the Bureau of Land Management, U.S. Fish & Wildlife Service, and California Department of Fish & Game on this project and all the ARRA projects in front of us, both on biology on the other technical areas. . . . [T]o the extent that Fish & Game believes that under the California Endangered Species Act, CESA, that additional mitigation is needed to fully mitigate this project, the Energy Commission staff accepts those comments and those recommendations from the Department of Fish & Game and would be supportive of that.

(August 18, 2010, RT 275:11-276:1 (O'Brien)). Staff's position supporting DFG's proposal for a new, higher mitigation ratio for the lands that support the highest tortoise densities is reasonable given DFG's experience administering CESA and determining what constitutes full mitigation of impacts to desert tortoises for purpose of authorizing incidental take of the species. Energy Commission rules provide that the "[c]omments and recommendations by a interested agency on matters within that agency's jurisdiction shall be given due deference by Energy Commission staff" (Cal.Code Regs., tit. 20, § 1744(e)), and staff in this instance has determined to follow DFG's advice in recommending the Energy Commission require the applicant to provide 5:1 compensation habitat requirement over the site. Staff believes the recommended mitigation measures, including the 5:1 ratio, meets the requirements for full mitigation under CESA.

Leaving certain details of a tortoise translocation requirement to be addressed in a translocation plan that will be approved later by the Energy Commission's's compliance project manager (CPM) is consistent with CEQA requirements.

CEQA does not prohibit an agency from adopting a mitigation a measure that requires further study to resolve details of the mitigation plan, provided the agency sets forth specific criteria for the plan and commits funding for its implementation. In *Sacramento Old City Association v. City Council of Sacramento* (1991), 229 Cal.App.3d [SOCA], plaintiffs challenged an EIR where they argued that the spectrum of mitigation measures that the city left open to mitigate parking impacts was analogous to the impermissible deferral of the formulation of mitigation measures held invalid in *Sundstrom v. County of Mendocino* (1988), 202 Cal.App.3d 296, 307. The city had adopted mitigation measures that required it to develop a transportation management plan pursuant to a study on the parking issues and that set out specific criteria for that transportation management plan. The City had already committed funds to the study. The court upheld the EIR, finding that the city adopted specific criteria for a transportation management plan that would be developed in the future and committed funds to the study. (*SOCA, supra,* at pp 1028-1029.)

As summarized by another court, "[d]eferral of the specifics of mitigation is permissible where the local entity commits itself to mitigation and lists the alternatives to be considered, analyzed and possibly incorporated in the mitigation plan. [(*SOCA, supra*, at pp 1028-1030.)] On the other hand, an agency goes too far when it simply requires a project applicant to obtain a biological report and then comply with any recommendations that may be made in the report. [(*Gentry v. City of Murrieta* (1995), 36 Cal.App.4th 1359, 1396-1397.)]" (*Defend the Bay v. City of Irvine* (2004), 119 Cal.App.4th 1261, 1275.)

In the case of the translocation of desert tortoises, staff's recommended condition of certification includes standards and criteria that must be met in developing a Desert Tortoise Translocation Plan that will guide tortoise translocation from the project site. (Exh. 310, p. 61.) The translocation plan, which was recently released in draft form, must comply with standards and guidelines in the *Translocation of Desert Tortoises (Mojave Population) from Project Sites: Plan Development Guidance* issued by FWS in 2010. (*Ibid*.) The staff's proposed condition also requires that the plan be approved by the CPM, DFG, FWS and BLM, and that it include a number of specific elements in addition to those identified in FWS's guidance. (*Ibid*.) Because the plan is available in draft form and available for

public comment, members of the public who perceive deficiencies in the plan can seek revisions.

Use of the translocation plan to determine the details of the translocation effort is analogous to an agency like DFG or the Energy Commission requiring acquisition of compensation lands but leaving identification of specific parcels that will be acquired to a time that may be a number of months after project approval. Such an arrangement helps to make the mitigation requirement feasible, but compliance with specific criteria is assured as part of the condition of certification. In the case of the Calico project, the specific criteria that must be met in selecting desert tortoise compensation lands is found in BIO-17. (Exh. 303 pp 8-9.)

Geology and Paleontology

Staff does not oppose the applicant's proposed timing change for GEO-1. (Exh. 82, Attachment A, p. 18.)

Hazardous Materials Management

There was limited live testimony on Hazardous Materials Management presented at the evidentiary hearings, and the applicant proposed changes to various conditions of certification in Attachment A to Exhibit 82. This section of the brief contains staff's responses to the discussion and the proposed changes. The change to the verification for HAZ-2 is acceptable, and staff also supports Hearing Officer Kramer's suggestion that the words "or generating" be added to the first sentence of the verification. (August 6, 2010, RT 222:10-15 (Kramer).) The change to HAZ-5 is not acceptable because *all* employees will be working in and around the various components of the hydrogen system. In other words, not only those employees whose responsibilities include handling of hydrogen will have access to the hydrogen system and have the opportunity to instigate considerable damage to equipment and employees. The change to HAZ-7 is acceptable.

At the August 18, 2010 hearing, staff learned for the first time of the applicant's proposal to include a perimeter road around portions of the site. To address the safety and security risks to the public and the facility, staff has proposed a revision to HAZ-5, which is found in Appendix A to this brief.

Hydrology and Water Supply

1. Flooding, Sedimentation, and Hydrology

In the SSA, staff raised concerns about the lack of detail provided to date for ensuring that erosion and sedimentation impacts associated with flooding are mitigated. (Exh. 300, p. C.7-1.) The applicant's plans for addressing site drainage have changed throughout the application process, beginning with a proposal to use six large pits along the northern site boundary to retain the entire 100-year flood, which are shown on maps presented as recently as May, 2010. (Exh. 56, Appendix B, Figure 2.) On June 11, 2010, the applicant modified its proposal, identifying bermed impoundments as detention basins, but also cautioning that the design is preliminary and will be refined after a final drainage report is prepared. (Exh. 59, response on 7th page. [no page numbers are provided.]) The lack of design information led to a staff request for additional detail. On June 16, the applicant provided more information, which indicated, in part, that it was planning to construct 15' dams across the end of the detention basins. (Exh. 60, Typical Basin Section [profile view].) In response, staff added proposed conditions of certification GEO-2 and -3, and SOIL & WATER-8 in the SSA. These conditions contain performance standards to ensure that no adverse impacts due to flooding will occur. Specifically, GEO-2 and GEO-3 require any dams (as defined in California Water Code section 60002) to meet requirements that would be applicable but for the Energy Commission's exclusive siting jurisdiction (Pub. Resources Code, section 25500.)[4] (Exh. 300, p. C.4-29 – 30.) SOIL & WATER-8 requires detailed information at each of 3 different phases of development of the grading and drainage facilities, and specifies detailed performance standards for the design of the detention basin and drainage facilities. (*Id*. at C.7-73.)

Initially, the applicant recommended deletion of GEO-2 and GEO-3, stating that its project would not involve any dams (Exh. 86, Question and Response 4.) In addition, the applicant opposed SOIL & WATER-8, and recommended changes to SOIL & WATER-2 and -3. However, at the hearing, the applicant indicated its willingness to accept SOIL&WATER-3 and -8 (August 6, 2010, RT 49:4-5, 50:2-3 (Foley-Gannon).) Staff agreed that the applicant's proposed changes to SOIL & WATER-2 are appropriate. (August 6, 2010, RT 49:17-20 (Weaver).) Although staff does not have reason to dispute applicant's

[4] Staff notes that the version of GEO-3 that was included in the SSA does not reflect the Energy Commission's exclusive jurisdiction. A revised GEO-3 was included in staff's August 16, 2010 filing.

contention that it will not build dams, we nonetheless recommend that GEO-2 and GEO-3 (as amended to reflect the Energy Commission's exclusive jurisdiction) be retained, as they would be needed if the applicant's plans change. Given the preliminary nature of the engineering work that has been completed for the detention basins and drainage facilities, staff believes this is a reasonable request.

CURE raised also raised concerns about the lack of detailed engineering information about the detention basins and drainage facilities. CURE witness Dr. Poff testified that the presence of desert pavement and cyptobiotic crusts, as well as changes in impervious cover, will affect the drainage characteristics of the site and could lead to erosion and sedimentation impacts. CURE is also concerned about the potential for hydro-modification, given the highly dynamic nature of the alluvial fan system at the project site. (Exh. 405, p. 3-4.) Staff shares CURE's concerns but believes that SOIL&WATER-8, in combination with SOIL&WATER-1,-2, and -3 are sufficient to prevent impacts. SOIL & WATER-1 requires a site-specific drainage, erosion, and sediment control plan, and contains extensive requirements for minimizing erosion and sedimentation impacts. (Exh. 300, p. C.7-65 – 68.) Staff testified that the types of best management practices required by SOIL&WATER-1 are effective in preventing significant adverse impacts. (*Id*. at p. C.7-24.) In addition, because of the size of the project, and the fact that it will be constructed on active alluvial fans, staff identified additional mitigation. SOIL & WATER-3 requires a stability report on the Suncatcher pole foundations to be prepared by a professional engineer. (*Id*. at C.7-69.) This will address potential impacts associated with surface erosion and/or channel migration. In addition, this condition requires monitoring of the Suncatcher pole foundations, fencing, and drainage and diversion channels before the first storm of each season, and after every storm event, as well as providing both short-term and long-term response measures. (*Id.* at C.7-69 -70.) In fact, although the applicant has requested that SOIL & WATER-3 be modified to remove the requirement for the stability report and to limit monitoring to ten-year storm events, staff continues to believe that these are important components of SOIL& WATER-3

SOIL & WATER-8 requires design drawings for the grading and detention facilities at the 30%, 60%, and 90% completion stage, along with design reports so that the compliance project manager can ensure that they are appropriately designed. (*Id*. at C.7-

73.) Extensive performance criteria are also included in SOIL & WATER-8.[5] Finally, SOIL & WATER-2 requires compliance with a comprehensive set of waste discharge requirements that have been developed in coordination with the Lahontan Regional Water Quality Control Board (Lahontan). (*Id*. at p. C.7-68.) These requirements apply to storm water discharge and will ensure no stormwater-related water quality impacts occur as a result of project construction and operation. In its August 16, 2010 filing, staff included modified waste discharge requirements in response to additional information provided by Lahontan.

Although the level of detail provided for the Calico project detention basins and drainage facilities is less than is typically provided, the conditions of certification are sufficient to ensure that no adverse impacts will occur. In fact, the specificity of the mitigation identified by staff goes far beyond that deemed sufficient by the Court in *Dry Creek Citizens Coalition v. County of Tulare* (1999) 70 Cal.App.4th 20 [82 Cal.Rptr. 2d 398}. While additional design information would lessen the compliance workload of staff, it is not needed in order to meet the requirements of the California Environmental Quality Act.

Initially, the applicant requested changes to staff's proposed conditions of certification SOIL & WATER-7 and SOIL & WATER-9. However, when staff provided additional information about the why the specific language regarding the Lower Mojave groundwater basin was included in the condition and the identification of specific wells was not included in the verification, applicant agreed to a clarified version of staff's condition. (August 6, 2010 RT 110:7-12 (Foley-Gannon).) Similarly, after staff explained the rationale for the proposed language in SOIL & WATER-9, the applicant agreed to a clarified version of that condition as well. (*Id*. at 111:4.) Staff filed revised SOIL & WATER-7 and SOIL & WATER-9 on August 16, 2010.

CURE also raised concerns about water supply issues. Specifically, Dr. Poff testified that there are serious questions about the reliability of the project water supply. (Exh. 405, p. 7.) However, Dr. Poff indicated that this issue could be satisfactorily addressed by staff's proposed SOIL & WATER-9, which the applicant agreed to at the hearing. (*Ibid*.; August 6, 2010, RT 111:4 (Foley-Gannon).) Dr. Poff also challenged staff's estimate of recharge and staff's failure to explicitly identify the effects of climate change on project water supply.

[5] As with GEO-3, staff has provided a revised SOIL & WATER-8 that reflects the Energy Commission's exclusive jurisdiction.

(Exh.405, p. 7.) However, staff explained at the evidentiary hearing that staff's estimate is based on recent research and that the method recommended by CURE is simplistic and doesn't take into account features present in this groundwater basin. (August 6, 2010, RT 104 – 106 (Yates).) Similarly, the staff witness explained why climate change wouldn't necessarily lead to a change in recharge in this groundwater basin. (*Id*. at pp. 107 – 108.) In sum, staff believes that CURE's testimony does not demonstrate that staff's analysis incomplete or that the conditions of certification are insufficient to prevent significant adverse impacts.

Land Use

In the Supplemental Staff Assessment (SSA or Exhibit 300), staff identified the project's contribution to the reduction of scenic values of wilderness area and recreation resources in the Mojave Desert and southern California desert region as a significant cumulative impact. The applicant did not challenge this conclusion, but did testify that the project was in compliance with all applicable laws, ordinances, regulations, and standards (LORS). (Exhibit 71, Question and Answer 11.) However, staff's testimony indicates that the project does not conform to federal policy. At issue is Instruction Memorandum NO. CA-2009-020CH1, issued by the Bureau of Land Management (BLM) and entitled *Interim Policy on Management of Donated Lands and Lands Acquired with Land and Water Conservation Funds (LWCF)*.[6] This policy, issued on May 28, 2009, indicates that lands acquired as mitigation or with Land and Water Conservation Funds are to be managed as avoidance/exclusion areas for land use authorizations that could result in surface disturbing activities. It also provides that BLM land managers can provide details on how to mitigate the project in a manner consistent with the values of the lands. The parties agree that such lands constitute part of the project site. Although BLM has not formally indicated that mitigation that has been proposed for the project, Staff agrees with the applicant that should BLM approve the project, such approval is evidence that the project is in compliance with the *Interim Policy*. (August 4, 2010, RT 131:11-22 (Vahidi).) However, at the time that staff filed the SSA, and at the time of this brief, there is no such approval, and staff therefore cannot find that the project conforms to this federal policy.

[6] This document was not identified as an Exhibit, but the relevant portions were incorporated verbatim in staff testimony. (Exh. 300, p. C.8-20).

Noise

The applicant requested changes to staff's proposed condition of certification NOISE-6. After some discussion about these changes, as well as about the difficulties associated with incorporating a variance process, staff proposed changes to conditions of certification NOISE-1 and NOISE-6. These were included in Exhibit 308, and when the Hearing Office asked whether any party had issue with the condition, only the applicant spoke, indicting its concurrence. (August 6, 2010, RT 227:14-17 (Kramer, Foley-Gannon).)

Reliability

Staff remains concerned about the long-term reliability of the Suncatcher technology. Although the recent information provided by the applicant from the Maricopa facility appears promising, staff notes that there appears to be an extremely high level of maintenance that is inherent in the operation of the facility. For example, although the applicant has not yet decided how many spare engines they will need, requirements proportional to the Maricopa facility would result in needing 1,700 spare engines available for change-out at all times. (The applicant testified that there are 3 spare engines for 60 Suncatchers at Maricopa [August 4, 2010, RT 163:1-5 (Votaw).]) In addition, the lack of detailed information about the types and frequencies of failures is a cause for concern. (*See. e.g*, August 4, 2010 RT, R165:8-25 (Votaw).) As a result, staff recommends a condition of certification that would require the provision of updated information about the performance of the Maricopa facility during the construction of the Calico project, and the first two years of Calico operation. Staff distributed such a condition as part of Exhibit 308, and the applicant does not contest its inclusion in the PMPD. (August 6, 2010, RT (230:4-5 (Foley-Gannon).)

Transmission Line Safety and Nuisance

Due to the fact that the Burlington Northern Santa Fe (BNSF) railway line bisects the project site, BNSF requested that staff modify condition of certification TLSN-4 to require a minimum clearance of 300 feet between the proposed transmission lines that the edge of the right-of-way for the BNSF tracks. Staff agreed, and included such a condition in Exhibit 308. BNSF subsequently requested that the TLNS condition also be clarified to indicate that to the extent transmission lines cross the tracks, they be required to do so in a perpendicular manner. (August 6, 2010, RT 224:13-18 (Lamb).) Staff agrees that this is a

reasonable request and recommends its incorporation into the final conditions of certification.

Transmission System Engineering

Intervener California Unions for Reliable Energy (CURE) raised concerns in its testimony about possible transmission upgrades that may be required for the Calico project to operate. (Exh. 400, p. 2.) Staff identified and analyzed a number of possible upgrades in the Staff Assessment/Draft Environmental Impact Statement. CURE asserts that the upgrades are not identified or analyzed in sufficient detail. (*Ibid*.)

Staff effectively refuted CURE's assertions one by one at the evidentiary hearing. With respect to the transmission upgrades identified in the Staff Assessment/Draft Environmental Impact Statement, staff pointed out that the studies on which identification of those upgrades is base are forecasts and inherently imprecise. Staff pointed out that studying potential upgrades is governed by a series of requirements established by the Independent System Operator and that the requirements were met for the studies performed for this project. (August 4, 2010, RT 244:1-20 (Hesters).) Staff -- and the Energy Commission -- are not required to speculate about the unknowable. (Cal.Code Regs., tit. 14 § 15145.)

With respect to dynamic reactive support facilities, staff said that the needed facilities are still under review, but in any event would be built within the Pisgah substation footprint. (August 4, 2010, RT 246:19-25; 247:1-9; 247:2-6 (Edirisuriya, Hesters).) The applicant has identified the static reactive support facilities, which would be included within the footprint of the Calico substation. (August 4, 2010, RT 247:12-18.) (Edirisuriya).) The SSA includes an analysis of the environmental impacts of both the Calico substation and the Pisgah substation expansion.

CURE also stated that the SSA does not include environmental analysis of the certain specific upgrades needed to operate the Calico project at full capacity. CURE specifically refers to the Pisgah substation expansion, new 220 kV structures, telecommunication facilities, and replacement of a 67-mile 220 kV line with a new 500 kV line. (Exhibit 400, p. 3.) CURE is wrong. In fact, the SSA includes an analysis of the information that is currently available about the environmental impacts of the upgrades in

each of the twenty technical analyses contained in the SSA. Staff has used best efforts to find out, analyze, and disclose all that it reasonably can. (Cal. Code Regs., tit. 14 § 15144.)

With respect to CURE's recommendation that the conditions of certification be modified to require the provision of reactive power resources, staff agreed that such a modification is reasonable. Staff testified that most large thermal generating plants are able to supply reactive power to the transmission network and that it is unusual for a thermal plant to actually consume reactive power as the proposed Calico project would. (August 4, 2010, RT 257:7-13 (Hesters).) The equipment required to supply the reactive power would be located within the power plant substation and thus under the licensing authority of the California Energy Commission (Pub. Resources Code, § 25500). The modification to the condition of certification is appropriate and was agreed to by the applicant later in the hearings. (Exh. 308; August 6, 2010, RT 211:14-15 (Foley-Gannon).)

Finally, staff agrees with the applicant that the requirement for the Large Generator Interconnection Agreement and Detailed Facility Study should not be included in condition of certification TSE-5, because they have already been provided. The revised TSE-5 was provided in Exhibit 308.

Visual Resources

At the evidentiary hearing, Staff verbally agreed to the applicant's proposed changes to VIS-1, VIS-2, although it notes that the change to VIS-1 will make a significant unmitigable adverse impact even more adverse. (August 4, 2010, RT 117:13-22.) After reviewing the glint and glare report that was part of staff's traffic and transportation testimony (Exh. 309), staff agrees that the setback requirement in VIS-3 can be changed to 223 feet.

Worker Safety and Fire Protection

In the SSA, staff proposed condition of certification WORKER SAFETY-7, which would require the applicant to either reach an agreement with the San Bernardino County Fire Department (SBCFD) regarding funding of its share of costs associated with providing fire protection and related services to the Calico project or pay specific costs identified in the condition. (Exh. 300, p. C.15-39.) Staff developed the specific costs using both the Hoffman Report (Exh. 302) and staff's Emergency Response Matrix. (Exh. 300, p. C.15-25.)

The applicant opposed the condition, asking instead to be allowed to negotiate with either SBCFD or Newberry Springs Fire Department or provide its own emergency response services. (Exhibit 82, Attachment A, p. 32.) At the evidentiary hearing, SBCFD Assistant Chief Brierty testified that the SBCFD does not have the authority to abdicate its responsibilities to Newberry Springs Fire Department and that the project owner could not provide services that would replace those provided by professional firefighters. (August 6, 2010, RT 193:8-15; 195:12-13 (Brierty).) He also testified about the scope of response efforts that could be required for an incident at the project site, and indicated his support of staff's proposed condition. (*Id*. at 195:14-16.) Chief Brierty supported staff's conclusion that incidents at these types of large industrial facilities can exhaust the emergency response resources in the region, in a phenomenon known as "drawdown", which leaves local residents, their homes, and businesses without emergency response. (Id. at 198:3-5.)

At the hearing, the applicant agreed to continue its consideration of this issue, and discussed it further with staff at the Committee-sanctioned workshop on August 10, 2010. At the workshop, the applicant continued to express concerns about the amount of money identified in the second option of WORKER SAFETY-7. Staff asked the applicant to consider the condition of certification that was stipulated to in the Imperial Valley Solar project proceeding, which added an option of applicant funding of a Fire Needs Assessment and Risk Assessment conducted by an independent contractor. Staff believes that the applicant's proposal to eliminate all references to costs would raise questions about compliance of the condition with the requirement that the identification of mitigation not be deferred to a future study. (*Gentry v. City of Murrieta* (1995) 36 Cal.App.4th 1359 [43 Cal.Rptr.2d 170].) Staff believes that the applicant has agreed to this approach, and because Worker Safety-7 and -8 were inadvertently omitted from the August 16, 2010 filing, staff has included them in an Appendix to this brief. Staff notes that current Worker Safety-8 will need to be renumbered Worker Safety-9.

At the August 6, 2010 hearing, the applicant also agreed to provide additional information about the changes it proposes to its hydrogen distribution system. August 4, 2010, RT 43:2:6 (Bellows).) Applicant has made these proposed changes in response to concerns expressed by intervenor Burlington Northern Santa Fe Railway (BNSF) about running a hydrogen line under its tracks that bisect the project site. (Id. at 23:25 – 24:1-8 (Bellows).) On August 10, 2010, the applicant submitted the additional information,

including a map showing the location of the two hydrogen generating facilities, hydrogen gas compressors, hydrogen gas piping, and access roads into and out of the various solar fields. In addition, staff filed its traffic and transportation testimony on August 9th, which included updated information about the train traffic associated with BNSF rail line. Due to the frequency and length of trains using the BMSF tracks, staff believes that an at-grade crossing of the rail road tracks would impede emergency response access to the northern portion of the site. Delay in response for fire suppression, rescue, or emergency medical needs would result in increased risk of fire escalation or loss of life or limb to on-site workers. Staff therefore concludes that an overcrossing of the rail road tracks is required to ensure a timely emergency response.

Staff also notes that the map provided by the applicant does not show at least two roads into all portions of the site, one being an emergency access road. This second road is best located along or near the eastern fence line. Staff believes that an access road at this location, with an at-grade railroad crossing, to be used solely for emergency response, is necessary to ensure timely access to the northern solar fields, as well as the southern solar fields, should the main access road with the above-grade crossing be blocked or otherwise unavailable. Therefore, staff is proposing to require that this access be provided in revised condition of certification WORKER SAFETY-6. This revised condition was included in staff's filing on August 16, 2010.

At the August 18, 2010 hearing, staff learned for the first time of the applicant's proposal to include a perimeter road around portions of the site. To address the safety and security risks to the public and the facility, staff has proposed a revision to Worker Safety-2, which is found in Appendix A to this brief.

Finally, as noted at the evidentiary hearing, staff rejects applicant's proposed change to WORKER SAFETY-1, because we believe it important that the project owner take into

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account the potential for injury that could result from exposure to reflected light. (August 6, 2010 RT 191:2-8 (Tyler).) Staff accepted the applicant's proposed timing change for WORKER SAFETY 6.

Respectfully submitted,

/S/

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APPENDIX A

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HAZ-5 The project owner shall prepare a site-specific Security Plan for the operational phase and shall be made available to the CPM for review and approval. The project owner shall implement site security measures addressing physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below (as per NERC 2002).

The Operation Security Plan shall include the following:

1. Permanent full perimeter fence, at least 8 feet high around the Solar Field;
2. Main entrance security gate, either hand operable or motorized;
3. Evacuation procedures;
4. Protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;
5. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site;

6. a. A statement (refer to sample, attachment "A") signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to ascertain the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy;

   b. A statement(s) (refer to sample, attachment "B") signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner) that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractor personnel that visit the project site.

7. Site access controls for employees, contractors, vendors, and visitors;
8. Closed circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if separate from the

control room) with cameras able to pan, tilt, and zoom, have low-light capability, and are able to view the outside entrance to the control room, the two hydrogen generator locations, and the front gate and emergency access gate(s), and all security fence that directly abuts the public access road.

9. Additional measures to ensure adequate perimeter security consisting of either:
   a. Security guard present 24 hours per day, 7 days per week, **OR**
   b. Power plant personnel on-site 24 hours per day, 7 days per week **and one** of the following:

   perimeter breach detectors

   or

   CCTV able to view both site entrance gates and 100 per cent of the power block area perimeter.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to the security plans. The CPM may authorize modifications to these measures, or may require additional measures, such as protective barriers for critical power plant components or cyber security depending on circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Council, after consultation with appropriate law enforcement agencies and the applicant.

Verification: At least 30 days prior to the initial receipt of hazardous materials on-site, the project owner shall notify the CPM that a site-specific Operations Site Security Plan is available for review and approval. In the Annual Compliance Report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and updated certification statements are appended to the Operations Security Plan. In the Annual Compliance Report, the project owner shall include a statement that the Operations Security Plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:

- An Operation Injury and Illness Prevention Plan;
- An Operation heat stress protection plan that implements and expands on existing Cal OSHA regulations (8 CCR 3395);
- A Best Management Practices (BMP) for the storage and application of herbicides;
- An Emergency Action Plan;
- Hazardous Materials Management Program;
- Fire Prevention Program (8 CCR § 3221); and;
- Personal Protective Equipment Program (8 CCR §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, the Heat Stress Protection Plan, BMP for Herbicides, and Personal Protective Equipment Program shall be submitted to the CPM for review and approval concerning compliance of the programs with all applicable safety orders. These plans shall include programs to prevent exposure of workers to the unusual hazard of high intensity reflected light from the solar parabolic mirrors. The Fire Prevention Plan and the Emergency Action Plan shall address special precautions and responses to implement when a fire involves a SunCatcher or hydrogen piping located within 200 feet of a fence line where a public access road exists directly on the other side of the fence. The Fire Prevention Plan and Emergency Action Plan shall also be submitted to the San Bernardino County Fire Department and the BNSF railroad for review and comment.

Verification: At least thirty (30) days prior to the start of operations, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program. ~~The project owner shall provide a copy of a letter to the CPM from the San Bernardino County Fire Department stating the Fire Department's comments on the Operations Fire Prevention Plan and Emergency Action Plan.~~

WORKER SAFETY-7 The project owner shall either:

(1) Reach an agreement, either individually or in conjunction with a power generation industry association or group that negotiates on behalf of its members, with the San Bernardino County Fire **Department** (SBCFD)

regarding funding of its project-related share of capital and operating costs to build and operate new fire protection/emergency response infrastructure and provide appropriate equipment as mitigation of project-related impacts on fire protection/emergency response services within the jurisdiction.

or

(2) Shall fund its share of the SBCFD capital costs in the amount of $1,187,000 and provide an annual payment of $1,095,000 to the SBCFD for the support of new fire department staff, operations, and maintenance commencing with the start of construction and continuing annually thereafter on the anniversary of the payment until the final date of power plant decommissioning.

or

(3) The Project Owner shall fund a Fire Needs Assessment and Risk Assessment conducted by an independent contractor who shall be selected and approved by the CEC Compliance Project Manager (CPM) and fulfill all mitigation identified in the independent fire needs assessment and a risk assessment. The Fire Needs Assessment would address emergency response and equipment/staffing/location needs while the Risk Assessment would be used to establish the risk (chances) of significant impacts occurring. In no event shall the Project Owner's cost responsibility under this option exceed that under option (2), above.

Should the applicant pursue option (3), above, the Fire Needs Assessment and Risk Assessment shall evaluate the following:

(a) Potential for impacts on the SBCFD and the project allocated costs of new and/or enhanced fire protection/emergency response services (which shall include services for inspections, permitting, fire response, hazardous materials spill/leak response, rescue, and emergency medical services) necessary to mitigate such impacts;

(b) The risk of impact on the local population that could result from potential unmitigated impacts on local fire protection and emergency services (i.e. "drawdown" of emergency response resources);

(c) The extent that the project's exemption from local taxes will impact local fire protection and emergency response services; and

(d) Recommendation of an amount of funding that should be provided to mitigate any identified significant impacts on local fire protection and emergency response services.

Compliance Protocols for the Fire Needs Assessment and Risk Assessment shall be as follows:

(a) The Fire Needs Assessment and Risk Assessment shall be conducted by an independent consultant(s) selected and approved by the CPM;

(b) The Fire Needs Assessment and Risk Assessment shall be fully funded by the project owner. The independent consultant(s) preparing the Fire Needs Assessment and Risk Assessment shall work directly for the Energy Commission.

(c) The project owner shall provide the protocols for conducting the independent fire needs assessment for review and comment by the SBCFD and review and approval by the CPM prior to the independent consultant's commencement of the fire needs assessment;

(d) The CPM shall be copied in any correspondence including emails or letters and included in any conversations between the project owner and consultant; and

(e) The CPM shall verify that the Fire Needs Assessment and Risk Assessment are prepared consistent with the approved fire needs assessment protocols and a risk assessment protocols.

No construction of permanent above ground structures shall occur until full funding of mitigation occurs either (i) pursuant to an agreement reached between the project owner (or a power generation industry association or group that includes the project owner) and the

SBCFD, or (ii) after payment of the fees described above for capital improvements and the first annual payment, or (iii) pursuant to the independent Fire Needs and Risk Assessments conducted by an independent consultant approved by the CPM.

Verification: At least thirty (30) days prior to the start of site mobilization, the project owner shall provide to the CPM:

(1) A copy of the individual agreement with the SBCFD or, if the owner joins a power generation industry association, a copy of the group's bylaws and a copy of the group's agreement with the SBCFD; and evidence in each January Monthly Compliance Report that the project owner is in full compliance with the terms of such bylaws and/or agreement.

or

(2) Documentation that ~~its share of the capital cost~~ the amount of $1,187,000 has been paid to the SBCFD, documentation that the first annual payment of $1,095,000 has been made, and shall also provide evidence in each January Monthly Compliance Report during construction and the Annual Compliance Report during operation that subsequent annual payments have been made.

or

(3) A protocol, scope and schedule of work for the independent Fire Needs Assessment and Risk Assessment and the qualifications of proposed contractor(s) for review and approval by the CPM; a copy of the completed Fire Needs Assessment and Risk Assessment showing the precise amount the project owner shall pay for mitigation; and documentation that the amount has been paid.

Annually thereafter, the owner shall provide the CPM with verification of funding to the San Bernardino County Fire Department for required fire protection services mitigation pursuant to the agreement with the Fire Department or the CPM approved independent fire needs assessment.

WORKER SAFETY -8 In the event that no agreement with the San Bernardino County Fire Department is reached, the project owner shall provide a $2,282,000 payment to SBCFD prior to the start of construction. This funding shall off-set any initial funding required by **WORKER SAFETY-7** above until the funds are exhausted. This offset will be based on a full accounting by the SBCFD regarding the use of these funds.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall provide to the CEC CPM either

a. documentation that the payment described above has been made or

or

b. that payment has been made pursuant to a contractual agreement with the SBCFD.

The CEC CPM shall adjust any payments initially required by **WORKER SAFETY-7** based upon the accounting provided by the SBCFD.