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April 19, 2010

California Energy Commission
Attn: Docket No. 08-AFC-2
1516 Ninth Street, MS 4
Sacramento, CA 95814-5512

Re: 08AFC2 Beacon Solar Energy Project

Dear Docket Clerk:

Enclosed are an original and one copy of: Opening Brief of California Unions for Reliable Energy. Please process this document and return a conformed copy in the envelope provided.

Thank you.

Sincerely,

/s/

Tanya A. Gulesserian

TAG:bh

2162-093a

STATE OF CALIFORNIA
California Energy Commission

In the Matter of: The Application for Certification for the BEACON SOLAR ENERGY PROJECT	Docket No. 08-AFC-2

OPENING BRIEF OF CALIFORNIA UNIONS FOR RELIABLE ENERGY

April 19, 2010

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I. INTRODUCTION

The Commission has two legal mandates: First, the Warren-Alquist Act, which provides, among other things, that the Commission promote all feasible means of water conservation, all feasible uses of water supply sources and compliance with LORS. Second, CEQA, which provides, among other things, that all potential environmental impacts must be analyzed and that all significant impacts must be mitigated, including impacts from mitigation measures themselves. The Beacon Solar Energy Project ("Project"), as currently proposed, fails on both counts.

There are four reasons the Commission cannot now approve the Project if it relies on ground water and recycled water piped in from twelve or forty miles away: (1) using fresh groundwater for power plant cooling violates the Warren-Alquist Act and LORS, (2) using groundwater and recycled water will cause significant unmitigated impacts, (3) using recycled water violates the Warren-Alquist Act and LORS, and (4) the piping of water will itself cause significant unmitigated impacts and other impacts which have not been analyzed. Instead, the Commission must require dry cooling in order to prevent the unreasonable use of water, to promote all feasible means of water conservation and all feasible uses of water supply sources and to ensure that water resources of the State be put to beneficial use to the fullest extent of which they are capable. Dry cooling would eliminate the LORS violation and eliminate the impacts from the use of groundwater and recycled water for the power plant's cooling needs.

The Commission must also address significant unmitigated impacts to biological resources and compliance with LORS. The Project will result in significant impacts to biological resources from mass grading more than 7 million cubic yards of soil covering more than 2,000 acres. The Project grading will remove at least 430 acres of vegetation that provides cover, foraging, and breeding habitat for wildlife, including Mohave ground squirrel, burrowing owl and desert tortoise, among numerous other species of special concern. Despite these enormous swaths of land and animals that will be destroyed, the FSA only requires 5 acres of land as compensation for desert tortoise and Mohave ground squirrel at a 3:1 ratio for a total of 15 acres for these species, and 100 acres of land as compensation for other construction and operation related impacts. The Commission should require compensation for at least 430 acres of habitat for these species at a 3:1 ratio. Furthermore, impacts to biological resources also include the destruction of 16 acres of Waters of the State and approximately 60 acres of desert wash scrub habitat, which will never be replaced with the FSA's proposed mitigation. The Commission should ensure that these water are either not destroyed, or their hydrological and biological values and functions are replaced in perpetuity.

The Project will also result in unanalyzed and unmitigated significant impacts from spills of heat transfer fluid ("HTF"), or Therminol VP-1, and violations of LORS related to hazardous materials and waste management. HTF is a hazardous material that poses acute and chronic health hazards. Exposure of HTF to people, wildlife and the environment may occur from spills measuring from

hundreds to thousands of gallons and that may present HTF in a liquid, vapor, or wax-like form. The FSA only analyzed HTF in its liquid form and only analyzed 750 cubic yards of soil contamination and handling as a consequence of a spill. Even that analysis failed to recognize that the Applicant's procedures result in placing hazardous waste in an unlined land treatment unit, which is prohibited by state law.

Finally, since the Project may not be able to deliver 250 MW of output, California ratepayers may be saddled with paying for a 250 Mw project with no assurance of getting the full generation. Therefore, feasible mitigation includes revising the conditions to require a signed interconnection agreement prior to power plant construction that allows for delivery of the full 250 Mw of Project generation at all times when the Owens Gorge – Rinaldi line and Barren Ridge switching stations are in service (i.e., under N-0 conditions) and is not be based on LADWP sacrificing some of its own generating capacity to make room for Beacon generation.

II. WATER RESOURCES: USING FRESH GROUNDWATER VIOLATES LORS

Beacon Solar, LLC's ("Applicant") Application for Certification ("AFC") states that the Project would use high quality fresh groundwater from onsite wells during construction and for operation of the power plant. (Exh. 500, p. 4.9-11.) The Final Staff Assessment ("FSA") Conditions of Certification allow the Project to use this groundwater for construction and for operation, except power plant cooling. (Exh. 501.) However, groundwater may continue to be used for power plant cooling in an

emergency or for up to five years if the Applicant elects to use recycled water from California City. Otherwise, the FSA Conditions require the Applicant to use recycled water for power plant cooling. The FSA's proposed conditions are illegal under both the Warren-Alquist Act and CEQA.

A. Project Setting and LORS

The Project is proposed to be located within the Koehn sub-basin of the Fremont Valley Groundwater Basin in the northwestern portion of the Mojave Desert where water resources are extremely limited. (Exh. 500, pp. 4.9-5, 4.9-6.) Groundwater quality beneath the Project site is of high quality with total dissolved solids ("TDS") concentrations ranging between 350 and 564 parts per million ("ppm"). (Exh. 500, pp. 4.9-7, 4.9-11, 4.9-31.) Groundwater beneath the Project site is "fresh and with minimal treatment, suitable for drinking." (Exh. 500, pp. 4.9-31.)

The Fremont Valley Groundwater Basin exhibits overdraft conditions. (Exh. 500, p. 4.9-21.) Groundwater overdraft "occurs when the water withdrawn by pumping exceeds recharge over a period of years during which the water supply conditions approximate average conditions." (Exh. 500, p. 4.9-21.) "Historical water levels show a continuous decline over a period of 20 to 30 years, and 2008 water levels in some wells were more than 100 feet below historical highs and therefore, have not fully recovered." (Exh. 500, p. 4.9-21.)

The Warren-Alquist Act sets forth the policy of the state and the intent of the legislature to "promote all feasible means of energy and water conservation and all feasible uses of alternative energy and water supply sources." (Pub. Res. Code §

25008.) Article X, section 2 of the California constitution, which constitutes LORS,[1] declares that "the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable" and prohibits the waste, unreasonable use or unreasonable method of use of water.

Water Code Section 13146 requires *all* state agencies, including the CEC, to comply with all State Board Water Quality Control Policies, "unless otherwise directed or authorized by statute." There are two potentially relevant State Water Resources Control Board policies, only one of which is applicable in this case. The State Water Resources Control Board's 1975 *Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Powerplant Cooling* (State Board Res. No. 75-58)[2] ("Policy 75-58" or "Policy") states that the loss of inland waters through powerplant cooling "may be considered an unreasonable use of inland waters when general shortages occur."[3] Policy 75-58 prohibits the use of fresh inland waters for powerplant cooling unless other sources or other methods of cooling would be environmentally undesirable or economically unsound.[4] Policy 75-58 defines "fresh inland waters" as "those inland waters which are suitable for use as a source of domestic, municipal, or agricultural water supply and which provide habitat for fish

[1] The Warren-Alquist Act requires the Commission to determine the Project's conformity with other laws, ordinances, regulations and standards ("LORS"), among others. (Pub. Res. Code §§ 25523(d)(1); 25525.)

[2] http://www.swrcb.ca.gov/board_decisions/adopted_orders/resolutions/1975/rs75_058.pdf

[3] Policy at 3.

[4] Policy at 4. In 2003, to harmonize Policy 75-58 and the Warren-Alquist Act, among other reasons, the California Energy Commission established a policy regarding the use of fresh water for power plant cooling. The Energy Commission's 2003 Integrated Energy Policy Report states that the Commission will approve the use of fresh water for power plant cooling "only where alternative water supply sources and alternative cooling technologies are shown to be 'environmentally undesirable' or 'economically unsound.'" (2003 Integrated Energy Policy Report, California Energy Commission, December 2003, Docket No. 02-IEP-1, Pub. No. 100-03-019, p. 41, available at http://www.energy.ca.gov/reports/100-03-019F.PDF.)

and wildlife."[5] Since groundwater beneath the Project site does not provide habitat for fish and wildlife, Policy 75-58 does not apply in this case.

The State Water Resources Control Board's 1988 *Adoption of Policy Entitled "Sources of Drinking Water"* (State Board Res. No. 88-63) ("Policy 88-63"),[6] which constitutes LORS, states generally that "[a]ll surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply," except water with TDS exceeding 3,000 mg/L and not reasonably expected to supply a public water system.[7] Thus, Policy 88-63 is not limited solely to inland waters that provide habitat for fish and wildlife or to power plant cooling. Policy 88-63 applies to this proceeding, and the Commission is required by Water Code Section 13146 to enforce it in this case.

B. Using Fresh Potable Groundwater for Power Plant Cooling Violates LORS

The Application for Certification states that the Project would use high quality fresh groundwater from onsite wells during construction and for operation of the power plant. (Exh. 500, p. 4.9-11.) For operation, the Project would consume approximately 1,388 acre-feet per year (AFY) of high quality fresh groundwater.[8] (Exh. 500, p. 4.9-11.)

Using 1,388 AFY of high quality fresh groundwater for power plant cooling violates the Warren-Alquist Act and is inconsistent with applicable LORS. According to the FSA,

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[5] Policy 75-58 at 2.
[6] http://www.swrcb.ca.gov/board_decisions/adopted_orders/resolutions/1988/rs1988_0063.pdf
[7] Policy 88-63 at 1.
[8] Ownership of groundwater under the site is disputed. (Exh. 500, p. 4.9-11.)

> Use of high quality fresh groundwater for power plant cooling is in direct conflict with the Energy Commission and SWRCB policies concerning water use. Staff believes that the use of high quality fresh groundwater for power plant construction and operation is an unreasonable use of this valuable resource and should be prohibited.

(Exh. 500, p. 4.9-58.)

Groundwater beneath the Project site is fresh, high-quality water suitable for domestic water supplies. (Exh. 500, pp. 4.9-31.) Currently, groundwater ***is actually used*** for agricultural and domestic use in the area. (Exh. 500, p. 4.9-58.) Groundwater beneath the Project site is high quality, with TDS ranging between 350 and 564 ppm. (Exh. 500, pp. 4.9-7, 4.9-11, 4.9-31.) Indisputably, the groundwater is suitable, or potentially suitable, for municipal or domestic water supply pursuant to the State Board's *Sources of Drinking Water* Policy 88-63. The groundwater is also well within the secondary maximum contaminant level (MCL) for TDS in drinking water of 1,000 mg/L and below or near the recommended limit of 500 mg/L and thus complies with the State's Drinking Water Standards. (Exh. 500, p. 4.9-58, citing 22 Cal. Code Regs. §§ 64431, 64449.)

Therefore, the use of high quality fresh groundwater for power plant cooling is an unreasonable use of this valuable resource, fails to promote all feasible means of water conservation and should be prohibited. (Pub. Res. Code § 25008; Article X, § 2, California Constitution.)

C. Using Fresh Groundwater for Power Plant Cooling Will Result in Unmitigated Significant Impacts to Biological Resources

The Project's use of fresh groundwater for power plant cooling would also result in unmitigated significant impacts to biological resources.

CEQA prohibits public agencies from approving projects with significant environmental impacts if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those impacts. (*Mountain Lion Foundation v. Fish & Game Commission* (1977) 16 Cal. 4th 105, 134; Pub. Res. Code § 21002.) In implementing its certified regulatory program, the Commission must comply with the basic substantive policies established by CEQA, including the requirements to identify significant adverse environmental impacts and mitigation measures. (*Sierra Club v. State Board of Forestry* (1994) 7 Cal. 4th 1215, 1236-1237; Pub. Res. Code § 21080.5.)

In addition to violating state water policy by using fresh water for cooling, according to the FSA, the resulting discharge of potable water would cause a significant impact to biological resources under CEQA. (Exh. 500, pp. 4.2-42, 6-2.) As proposed, using wet cooling requires discharging water to three approximately 2-acre evaporation ponds that pose significant threats to migratory birds and desert tortoise. (Exh. 500, p. 4.2-41.) In particular, the evaporation ponds create a new water source in a water scarce area, attracting ravens and potentially increasing predation rates in adjacent habitat. (Id.; Exh. 500, p. 6-5.) In addition, waterfowl drink or forage in evaporation ponds and are harmed by selenium or hypersaline conditions or killed due to salt toxicosis. (Exh. 500, p. 4.2-41.)

The FSA concluded that dry-cooling "would eliminate the need for evaporation ponds, and would therefore eliminate the significant threat to migratory birds and desert tortoise posed by the ponds." (Exh. 500, p. 4.2-42.)

Therefore, "[dry-cooling] is the preferred alternative by staff, CDFG, and USFWS because it would entirely avoid the impact." (Exh. 500, p. 4.2-42.) The FSA also concluded that if dry-cooling were not adopted, then Condition of Certification BIO-14, which requires installing netting to exclude birds and other wildlife, would reduce evaporation pond impacts to birds to less than significant levels. (Exh. 500, p. 4.2-42.) However, the agencies did not conclude that requiring netting would also reduce significant threats to desert tortoise posed by the ponds. (Exh. 500, p. 4.2-41-42.) In fact, ravens would still be attracted to the evaporation ponds despite the netting. (March 22, 2010, Tr., p. 376.) Therefore, the Project's proposed use of wet cooling (whether from groundwater or recycled water) and the resultant use of evaporation ponds would cause significant unmitigated impacts to desert tortoise. This would be a textbook violation of CEQA.

D. Only Dry Cooling Will Eliminate Inconsistency With LORS and Significant Unmitigated Impacts From Using Fresh Groundwater for Power Plant Cooling

Staff evaluated other feasible measures for addressing the Project's power plant cooling needs, including dry cooling technologies, groundwater with TDS over 1,000 mg/L, two recycled water supplies, and utilizing photovoltaic ("PV") solar panels. (Exh. 500, pp. 4.9-59-63, 6-1.)

Staff concluded that "[t]here is no compelling evidence that using the lowest quality water supply reasonably available (recycled water) or dry cooling would be environmentally undesirable or economically unsound." (Exh. 500, p. 4.9-1.) In fact, dry cooling, recycled water or PV could reduce the Project's consumption of

potable water by up to 97%. (Exh. 500, p. 6-1.) However, only both PV and dry cooling have the added benefit of eliminating significant environmental impacts from evaporation ponds. (Exh. 500, p. 6-1.)

In addition, dry cooling avoids significant and unanalyzed impacts from recycled water pipelines. Finally, dry cooling avoids the Project's conflicts with LORS.

1. Dry Cooling Would Eliminate Significant Unmitigated Impacts From Using Groundwater and Recycled Water

Staff concluded that if dry cooling is selected and the equipment is located in the current footprint, "no additional analysis of potential significant environmental impacts related to soil and water resources would be required." (Exh. 500, p. 4.9-63.) "Dry cooling would significantly reduce the volume of process wastewater generated, possibly eliminating need for partial ZLD and reducing the volume of wastewater disposed to evaporation ponds." (Exh. 500, p. 4.9-63.) Staff also concluded that dry cooling "would eliminate the need for evaporation ponds, and would therefore eliminate the significant threat to desert tortoise posed by the ponds." (Exh. 500, p. 4.2-42.) Therefore, dry cooling is the "preferred alternative" by Staff, CDFG, and USFWS "because it would entirely avoid the impact." (Exh. 500, p. 5.2-42.)

The FSA also concluded that if dry-cooling is not adopted, then Condition of Certification BIO-14, which requires installing netting to exclude birds and other wildlife, would reduce evaporation pond impacts to migratory birds to less than significant levels. (Exh. 500, p. 4.2-42.) However, the agencies did not conclude

that requiring netting would also reduce significant threats to desert tortoise posed by the ponds. (Exh. 500, p. 4.2-41-42.) In fact, ravens would still be attracted to the evaporation ponds despite the netting. (March 22, 2010, Tr., p. 376.) Therefore, dry cooling would eliminate significant unmitigated environmental impacts from evaporation ponds. (Exh. 500, p. 6-1.)

2. Dry Cooling Eliminates Inconsistency with LORS and is a Feasible Mitigation Measure and Economically Viable Alternative

Both dry and wet cooling systems utilize fans to cool the steam that drives the main turbine. However, wet cooling applies water to the outside of the condenser while simultaneously using fans to evaporate the water. (Exh. 500, p. 6-8.) Wet cooling also generates significant volumes of process wastewater from cooling tower blowdown that cannot be reused and would be discharged to evaporation ponds. (Exh. 500, p. 4.9-13.) This results in an unreasonable waste of water and hence inconsistency with LORS and significant environmental impacts that can be eliminated with dry cooling.

CEQA compels government agencies first to identify significant environmental impacts and then to mitigate those adverse impacts "through the imposition of feasible mitigation measures or through the selection of feasible alternatives." (*Sierra Club v. State Board of Forestry* (1994) 7 Cal.4th 1215, 1233.) The substantive mandate described by the California Supreme Court comes from Public Resources Code section 21002, which sets forth the policy of the state that "public agencies should not approve projects as proposed if there are feasible

alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects…" CEQA defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors." (Pub. Res. Code 21061.1.) "The fact that an alternative may be more expensive or less profitable is not sufficient to show that the alternative is financially infeasible. What is required is evidence that the additional costs or lost profitability are sufficiently severe as to render it impractical to proceed with the project." (*Citizens of Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1181; Exh. 500, p. 6-11.)

Utilizing a dry cooling system is a feasible mitigation measure and feasible alternative to eliminate the unreasonable waste of water and the Project's significant impacts on biological resources from evaporation ponds or constructing recycled water pipelines. (Exh. 500, pp. 4.9-66, 6-19.) For this Project, dry cooling is clearly comparable in cost to wet cooling, provides an adequate return to its investors, and is preferable to wet cooling because of its lower environmental consequences.

According to Staff, economic feasibility for solar power plants, including the Project, means achieving an internal rate of return ("IRR") (annualized net profit margin) of 11% or more. (Exh. 500, pp. 6-12, 6-17.) In evaluating the feasibility of measures to reduce significant impacts to biological resources and to address

compliance with LORS,[9] Staff used a confidential revenue model submitted by the Applicant to create three separate revenue models reflecting the marginal costs of the Rosamond recycled water option, the California City recycled water option, and using dry cooling with an expanded solar field. (Exh. 500, FSA, p. 6-12.) In all three scenarios, the revenue models show that the Project would surpass the benchmark IRR of 11%. (Exh. 500, FSA, p. 6-13.)

Specifically, Staff found that using dry cooling with an expanded solar field, as studied by the Applicant, actually provides a slightly ***higher*** profit margin, as compared to the proposed wet cooled project. (Exh. 500, p. 6-19.) According to the FSA, the incremental cost of dry cooling is $4.67 million with an expanded solar field, which corresponds to less than $6.40 to $8.00 per megawatt-hour ("Mwh") (Exh. 616, p. 5; Exh. 500, pp. 4.9-159-160, 6-27, 6-28, 6-44; Exh. 623.) Any value in the range of $6.40 to $8.00 per Mwh is small compared to the Project's total revenues, which are estimated to be about $150/Mwh. (Exh. 616, p. 5.)

Staff also found that the Applicant's revenue model shows that, even without expanding the solar field, the Project would still meet or exceed the benchmark IRR of 11%. (Exh. 500, FSA, pp. 6-13, 6-19.) Staff's estimate was conservative in that the "estimate of value is understated and the project would likely reach an IRR above staff's estimate." (Exh. 500, p. 6-13.) In fact, dry cooling with the solar field size proposed in the AFC "would still lead to profits 94% as large as those that would result from the proposed wet cooling." (Exh. 623, p. 5.) Finally, dry cooling

[9] Staff also evaluated these feasible measures to address significant impacts to cultural resources and visual resources.

would also result in greater net profits than cooling using reclaimed water. (Id.) Therefore, the FSA is correct that dry cooling is an economically viable option. (Exh. 500, p. 6-18.)

The record also shows that, under the Applicant's scenario of dry cooling with an expanded solar field, the true incremental cost of dry cooling would be well below $6.40 to $8.00 per Mwh. This is because the Applicant's analysis accounted for costs using a 12 percent increase in solar field size to maintain a 250 Mw output under all load conditions (Exh. 500, p. 6-40), but failed to account for the increased generation from the increased solar field size during hours when temperatures are below 103.5 degrees Fahrenheit. (Exh. 616, p. 6.) Therefore, dry cooling with an additional solar field area would not only lead to an additional annual cost of $4.67 million, as suggested by the Applicant, but it would also result in ***4.1 percent greater annual generation***. (Exh. 500, pp. 6-9, 6-40, 6-44; Exh. 616, p. 6.) Thus, an increase in field size would more than offset the efficiency loss associated with dry cooling, leading to greater annual output with dry cooling. (Exh. 616, p. 6.) Specifically, the additional generation of between 23.8 gigawatt hour ("GWh") and 30 GWh per year, sold at 15 cents per kilowatt hour ("kWh"),[10] would be worth between $3.57 million per year and $4.5 million per year. (Exh. 616, p. 6.) These profits would offset all but $1.1 million or $0.17 million of the $4.67 million per year incremental cost of dry cooling, respectively. (Exh. 616, p. 6; Exh. 500, pp. 6-44.)

[10] This is the price assumed by the Applicant in assessing dry vs. wet cooling, and used by the Staff as well. (Exh. 500, p. 4.9-158.)

Therefore, the net cost of dry cooling appears to be from $0.17 to $1.1 million per year, corresponding to between $0.2/Mwh and $1.80/Mwh. (Exh. 616, p. 6.)

On the other hand, Staff concluded that dry cooling would actually cost slightly ***less*** than wet cooling, since Staff found dry cooling would be ***more*** profitable than wet cooling. (Exh. 500, pp. 6-9, 6-19.) According to the FSA, dry cooling also has the lowest operating costs of all measures to address compliance with LORS and significant impacts and costs "$403,000 less than the BSEP base case [wet cooling]." (Exh. 500, p. 4.9-157.) "Whether dry cooling would cost slightly less than wet cooling, or up to $1.80/Mwh more, doesn't really matter. Either way, dry cooling is clearly comparable in cost to wet cooling,[11] provides an adequate return to its investors,[12] and is thus preferable to wet cooling because of its lower environmental consequences." (Exh. 616, p. 7.)

3. Recycled Water Options Are Inconsistent With LORS and Will Result in Unanalyzed and Unmitigated Significant Adverse Impacts

Staff evaluated two options for developing recycled water to reduce the Project's use of fresh water for power plant cooling, both of which are inconsistent with LORS and will result in unanalyzed impacts and unmitigated significant adverse impacts.

The Rosamond Community Services District ("Rosamond") option involves three potential upgrades at the treatment plant, one to treat 0.5 million gallons per day ("MGD"), a second to treat a total of 1.3 MGD per day, and a third to treat 2.0

[11] Costs of $0.2/Mwh to $1.8/Mwh correspond to approximately 0.1 – 1.2 percent of the expected $150/Mwh revenue from Beacon generation.
[12] FSA, p. 6-12 and 6-13.

MGD of wastewater flow to tertiary treated levels. (March 22, 2010 Tr., pp. 133, 140-142.) Rosamond also involves construction of a 40-mile pipeline to deliver the water to the Project site and seasonal storage at the Rosamond site to handle peak flows needed during the summer. (March 22, 2010 Tr., pp. 133, 140-141; Exh. 506; Exh. 500, p. 6-10.) Rosamond is currently constructing wastewater treatment plant upgrades to treat 0.5 MGD of wastewater flows to tertiary level. (Exh. 500, p. 6-10; March 22, 2010 Tr., p. 139-141.)

The California City option involves a wastewater treatment plant expansion from the current 1.5 million gallons per day to 3 million gallons per day, "a sewer main expansion which would bring an additional almost 2500 septic tanks on to the line to be able to provide the additional flow necessary," (March 22, 2010 Tr., p. 134) and construction of an approximate 12-mile pipeline to move the water to the Project site. (Exh. 500, p. 6-10; March 22, 2010 Tr., p, 132; Exh. 506.) The FSA is inconsistent on exactly how many miles of pipeline must be constructed to deliver water to the Project site; the pipeline may be 12 miles (Exh. 500, p. 4.9-38) or the pipeline may be 15 miles. (Exh. 500, p. 6-11.)

Staff concluded that both recycled water options are economically feasible. (Exh. 500, p. 6-19.) However, Staff recommended the Rosamond alternative "because it would facilitate compliance with state water policy." (Exh. 500, p. 6-19.) Despite this conclusion, Condition of Certification Soil&Water-1 permits either recycled water alternative.

a. Recycled water options are inconsistent with LORS

According to the FSA, the Commission must consider the reasonableness of allowing the Project to use fresh groundwater suitable for domestic use when lower quality water that cannot be used for domestic purposes without extensive treatment is available. (Exh. 500, p. 4.9-151.) However, the Commission must also consider the reasonableness of allowing the Project to use recycled water that would otherwise be used for beneficial purposes in a water scarce environment (and that, if used for the Project, will ultimately be discharged into evaporation ponds) when a feasible mitigation measure exists that does not require the use of water and would eliminate significant impacts.

Using recycled water from either Rosamond or California City would be inconsistent with LORS for three reasons. First, Staff's Condition of Certification for the California City recycled water option would allow the Applicant to continue to use fresh high quality groundwater from beneath the Project site for power plant cooling. (March 22, 2010 Tr., pp. 121, 390; Exh. 337).) As discussed above, using fresh high quality groundwater that may be suitable for potable domestic drinking water instead for power plant cooling is an unreasonable use of water under State Board Policy 88-63 and California's drinking water standards. (Pub. Res. Code § 25008; Article X, § 2, California Constitution.)

Second, using recycled water from either Rosamond or California City fails to promote all feasible means of water conservation, as required by Section 25008 of the Warren-Alquist Act. As explained above, dry cooling is a feasible measure for

this Project to conserve scarce water resources in the Fremont Valley Groundwater Basin.

Third, using high quality recycled water from either Rosamond or California City fails to promote all feasible uses of water supply sources, as required by Section 25008 of the Warren-Alquist Act, and fails to put recycled water "to beneficial use to the fullest extent of which they are capable," as required by Article X, section 2 of the California Constitution. The quality of both recycled water options will be Title 22 tertiary-treated wastewater. (Exh. 506.) Moreover, concentrations of TDS in both recycled water options are very similar to onsite groundwater – approximately 500 ppm.[13] (Exh. 500, p. 4.9-34.)

Staff found that using recycled water from Rosamond "would allow California City the flexibility to use their reclaimed water for other beneficial purposes in the basin while allowing [the Project] to make use of [Rosamond's] tertiary-treated water that is otherwise being evaporated." (Exh. 500, p. 6-11.) Staff is correct that California City should retain the flexibility to use its reclaimed water for other beneficial purposes in this overdrafted basin. In fact, according to California City, the recycled water would be used for irrigation in the City if it is not used for the Project. (March 22, 2010 Tr., p. 151.) Therefore, California City recycled water could be used for other beneficial uses in a water scarce environment.

[13] Rosamond recycled water would have a TDS concentration of 548 ppm. California City recycled water would have a TDS concentration of 590 ppm. (Exh. 500, p. 4.9-62.) Groundwater beneath the Project site has a TDS concentration ranging between 350 and 564 ppm. (Exh. 500, pp. 4.9-7, 4.9-11, 4.9-31.)

Furthermore, just as California City should retain the flexibility to use its reclaimed water for other beneficial purposes in the basin, Rosamond should retain the flexibility to use its reclaimed water for other beneficial purposes in the basin. In fact, Rosamond is currently upgrading its facility to treat 0.5 MGD (Exh. 500, p. 6-10), and according to Rosamond, the purpose of its existing upgrade is "to provide service within the community of Rosamond … [m]ostly for urban irrigation" and "potential[ly] for future recharge operations." (March 22, 2010 Tr., p. 145-146.) Therefore, Rosamond recycled water could also be used for other beneficial uses in a water scarce environment.

b. Recycled water options will result in unanalyzed and unmitigated significant adverse impacts.

Under CEQA, the Commission must analyze potential impacts from the whole of the Project, which, in this case, includes upgrades to at least one wastewater treatment facility. The Commission must also mitigate significant impacts from the Project in its entirety.

Even assuming the wastewater treatment plants are severable from this Project, the Commission must analyze the cumulative effects of the Project and the wastewater treatment plant upgrades.

i. The FSA does not analyze the "whole of the project," which includes upgrades to at least one wastewater treatment facility

CEQA applies to "discretionary projects proposed to be carried out or approved by public agencies." (Pub. Res. Code § 21080(a).) "Project" is defined as "the whole of an action" which has the potential to result in a direct physical change

in the environment, or a reasonably foreseeable indirect physical change in the environment. (14 Cal. Code Reg. § 15378.) As the FSA explains, the "whole of the action" may include facilities not licensed by the Energy Commission. (Exh. 500, p. 5.5-1.)

The Supreme Court in *Laurel Heights I*[14] set forth a two-pronged test for determining whether reasonably foreseeable future activities must be analyzed as part of the Project:

> We hold that an EIR must include an analysis of the environmental effects of future expansion or other action if: (1) it is a reasonably foreseeable consequence of the initial project; and (2) the future expansion or action will be significant in that it will likely change the scope or nature of the initial project or its environmental effects.

Failure to consider all phases of a Project constitutes "piecemealing" of a single project into two or more separate phases. CEQA prohibits piecemealing and requires the CEQA document to analyze the "whole project." CEQA mandates "that environmental considerations do not become submerged by chopping a large project into many little ones -- each with a minimal potential impact on the environment -- which cumulatively may have disastrous consequences."[15]

Before undertaking a project, the lead agency must assess the environmental impacts of all reasonably foreseeable phases of a project.[16] A public agency may not

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[14] *Laurel Heights Improvement Assn. v. Regents of the University of California* ("*Laurel Heights I*") (1988) 47 Cal.3d 376, 390.

[15] *Bozung v. LAFCO* (1975) 13 Cal.3d 263, 283-84; *City of Santee v. County of San Diego*, (1989) 214 Cal.App.3d 1438, 1452.

[16] *Laurel Heights Improvement Assoc. v. Regents of the Univ. of Calif.* (1988) 47 Cal.3d 376, 396-97, 253 Cal.Rptr. 426) (EIR held inadequate for failure to assess impacts of second phase of pharmacy school's occupancy of a new medical research facility).

segment a large project into two or more smaller projects in order to mask serious environmental consequences. As the Second District stated:

> The CEQA process is intended to be a careful examination, fully open to the public, of the environmental consequences of a given project, covering the entire project, from start to finish . . . the purpose of CEQA is not to generate paper, but to compel government at all levels to make decisions with environmental consequences in mind.[17]

There is case law that directly applies to this proceeding. For example, in *San Joaquin Raptor v. County of Stanislaus,*[18] the court held that an EIR was deficient because it did not consider the impacts of a sewer system that was necessary to serve a new residential development. Since the development could not go forward without the sewer expansion, the "total project" included both the housing and the sewer project necessary to serve it. The County was required to prepare a new EIR analyzing the whole project, including the residential development, and the sewer and other services, particularly their growth-inducing capabilities that were a reasonably foreseeable component of the project.

In *Tuolumne County Citizens for Responsible Growth v. City of Sonora* (2007) 155 Cal.App.4th 1214, the Court examined a proposed home improvement center and road realignment that had been studied under separate CEQA reviews. The Court reasoned that the two actions were part of a single "project" for purposes of CEQA review, even though the City had historically recognized the advantages of realigning the road and both activities could be achieved independently of each other. The Court held that because approval of the home improvement center was

[17] Natural Resources Defense Council v. City of Los Angeles (2002) 103 Cal.App.4th 268.
[18] (1994) 27 Cal.App.4th 713.

conditioned upon completion of road realignment, and the activities were related in time, physical location, and entity undertaking actions, the two proposals must be studied in one CEQA document. "Their independence was brought to an end when the road realignment was added as a condition to the approval of the home improvement center project." (Id. at 1231.)

Like the sewer system in *San Joaquin Raptor* and the road realignment in *Tuolumne County Citizens*, the impacts of the wastewater treatment system expansions must be analyzed by the Commission.

ii. The FSA failed to analyze reasonably foreseeable potential impacts from wastewater treatment facility upgrades necessary to serve the Project

If the Project were to rely on recycled water, it would include and be dependent upon upgrades to either the Rosamond or California City wastewater treatment facilities. Based on evidence provided by Staff and the Applicant, upgrades to one of these facilities are necessary, conditions-precedent for the Project to operate. As Staff and the Applicant readily point out (March 22, 2010 Tr., p. 121-123), Condition of Certification Soil&Water-1 and -18 prohibit operation of the Project without documentation that either California City or Rosamond will provide disinfected tertiary recycled water to meet the Project's operational cooling water requirements. (Exh. 337.)

Furthermore, the record is clear that upgrades to the Rosamond wastewater treatment facility are required to enable Rosamond to provide 1.3 MGD to serve the Project. Although Rosamond is currently developing a 0.5 MGD upgrade, there is

no evidence that Rosamond is currently developing the required 1.3 MGD upgrade. In fact, only after Rosamond obtains a signed contract will Rosamond begin constructing a 1.3 MGD upgrade to the wastewater treatment facility:

> MR. LaMOREAUX: …What would be changing [with a signed contract] is construction would be well underway on the treatment plan expansion that would be able to take the rest of our 1.3-million-gallons-a-day flow and bring it up to a tertiary level.
>
> MS. GULESSERIAN: And has the construction upgrades began on the wastewater treatment plant?
>
> MR. LaMOREAUX: Those would begin upon execution of a contract with a customer.
>
> MS. GULESSERIAN: Are you going to upgrade your wastewater treatment facility if Beacon does not select Rosamond as its recycled water alternative?
>
> MR. LaMOREAUX: Yes, I believe it will happen. There are other interested parties in that water in the desert.
>
> MS. GULESSERIAN: Do you have plans to do that anyways?
>
> MR. LaMOREAUX: Not without a customer, no.

(March 22, 2010 Tr., pp. 140-141.)

There is no evidence that Rosamond has any other customer that would require an upgrade to the Rosamond facility. According to Rosamond's letter of intent to provide tertiary treated water for the Project, Rosamond "will expand the [treatment plant] in order to supply the necessary tertiary treated water for [the Project]." (Exh. 506: August 14, 2009 Rosamond Letter of Intent, p. 2.) The Project

Applicant would be required to pay for, design and construct the pipeline, booster stations, and related facilities. (Id., p. 3.) The Project Applicant would also be required to pay for at least half of the cost to expand the Rosamond wastewater treatment plant, among other costs. (Id., p. 2.)

Similarly, for California City, upgrades to and expansion of California City's wastewater treatment plant and conversion of 2,500 homes from septic to a centralized sewer system are necessary for California City to serve recycled water to the Project. (March 22, 2010 Tr., p. 134; Exh. 500, p. 6-10; March 22, 2010 Tr., p. 132; Exh. 506.) According to California City's letter of intent, California City would be "expanding our Recycled Water production to meet the needs of the Beacon Solar Project." (Exh. 506: August 13, 2010 California City Email, p. 1.) The Project Applicant would be required to pay for pipelines, the sewer line expansion, and the wastewater treatment capacity upgrades. (Id., p. 2.) The upgrades and expansion have not been planned, and there is no evidence that the upgrades and expansion are underway.

Finally, there is no evidence that adequate environmental review has occurred for the wastewater treatment plant upgrades. In fact, Rosamond states that it will work with the Commission and Edwards Air Force Base to complete the required environmental documentation. (Exh. 506: August 14, 2009 Rosamond Letter of Intent, p. 3.) Therefore, it appears that Rosamond is relying on the Commission to conduct environmental review of the proposed upgrades. Moreover, according to the FSA,

> If the Energy Commission requires the use of recycled water from California City, staff notes that additional environmental analysis of potential impacts would be required. [The Project] would have to provide information on the project design and alignment.

(Exh. 500, p. 4.9-63.)

Like the development in *San Joaquin Raptor v. County of Stanislaus*, since operation of the Project cannot go forward without either California City's sewer expansion and wastewater treatment plant expansion and upgrades, or Rosamond's wastewater treatment plant upgrades that are required to serve the Project, the "total project" includes both the power plant and the wastewater treatment upgrades necessary to serve it. As the Court found in *San Joaquin Raptor v. County of Stanislaus*, the Commission must analyze the whole project, including the power plant, the sewer development, and the wastewater treatment plant upgrades, including their growth-inducing capability, that are a reasonably foreseeable component of the Project.

Also, like the development in *Tuolumne County Citizens for Responsible Growth v. City of Sonora*, since the Project is conditioned upon a signed agreement with a recycled water purveyor to provide disinfected tertiary recycled water to meet the Project's operational cooling water requirements, the two actions are part of a single "project" for purposes of CEQA review, even if the power plant and waste water treatment upgrades could be achieved independently of each other. As Staff and the Applicant readily point out (March 22, 2010 Tr., p. 122-123), the FSA makes clear in Condition of Certification Soil&Water-18 that operation of the Project cannot proceed without documentation that either the California City or

Rosamond wastewater treatment plant will be available to meet the Project's operational cooling water requirements. (Exh. 500, pp. 4.9-62-63.) Thus, "[t]heir independence was brought to an end" when an executed Recycled Water Purchase Agreement "was added as a condition to the approval" of the Project. (*Tuolumne County Citizens for Responsible Growth v. City of Sonora*, 155 Cal.App.4th at 1231.)

Therefore, the Commission must independently analyze potentially significant environmental impacts from the California City and Rosamond upgrades as a part of the "whole of the action" under CEQA. That analysis is not in the current evidentiary record.

iii. The FSA failed to analyze all potential impacts from recycled water pipelines or ensure that all significant impacts from the pipelines are mitigated

CEQA requires that all potential impacts must be analyzed and all significant impacts must be mitigated, including impacts from mitigation measures themselves. Where mitigation measures would, themselves, cause significant environmental impacts, CEQA requires an evaluation of those secondary (indirect) impacts.[19] Furthermore, before undertaking a project, the lead agency must assess the environmental impacts of all reasonably foreseeable phases and components of a project.[20]

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[19] CEQA Guidelines § 15064(d).

[20] *Laurel Heights Improvement Assn. v. Regents of University of California, supra,* 47 Cal.3d at p. 396-97 (EIR held inadequate for failure to assess impacts of second phase of pharmacy school's occupancy of a new medical research facility).

Delivering water from Rosamond would involve constructing an approximate 40-mile pipeline extending from the community of Rosamond's new tertiary treated water plant to the Project site. (Exh. 500, p. 4.2-13.) The 40-mile Rosamond pipeline would have a northern 17.6-mile segment and a southern 23-mile segment. (Exh. 500, p. 4.2-127.) The 23-mile segment could have two alternative locations. (Exh. 500, pp. 6-10, Alternatives – Figure 2.) The Eastern Alternative would be partially routed through Edwards Air Force Base. (Id.) The Western Alternative would be located to the west of Edwards Air Force Base. (Id.)

The 12- or 15-mile California City recycled water pipeline would be located along part of the northern 17.6-mile segment of the Rosamond pipeline. (Exh. 500, pp. 4.9-38, 6-11, Alternatives – Figure 2 and Figure 4.)

The FSA provides no independent analysis of the northern 17.6-mile segment of the Rosamond pipeline, no independent analysis of the Eastern Alternative of the southern 23-mile segment of the Rosamond pipeline, and no independent analysis of the California City pipeline. The only review that Staff attempted was of the Western Alternative of the southern 23-mile segment of the 40-mile Rosamond pipeline, and the analysis is deficient.

In sum, for the Western Alternative of the southern 23-mile segment of the Rosamond pipeline, the FSA provides an analysis of plant communities based on a "drive-by" assessment during two summer days in July 2009 and then makes unsupported assumptions regarding impacts to special-status plant species and wildlife species along 23 miles of this alignment. (Exh. 500, pp. 4.2-127-163.)

1. Staff performed no analysis of the northern 17.6 mile segment of the Rosamond pipeline or the entire California City pipeline

CEQA requires the Commission to conduct an independent analysis of potential impacts from proposed projects. (Pub. Res. Code §21082.1.) Environmental review must be prepared directly by, or under contract to, the Commission and must reflect the independent judgment of the Commission. (Id.)

The FSA provides no independent analysis of potentially significant impacts to biological resources along the northern 17.6-mile segment of the Rosamond pipeline, which encompasses the California City pipeline route. The FSA fails to set forth the existing baseline and provides no analysis of potentially significant impacts. Instead, "[t]he biological resources of the northern 17.6 mile segment of the pipeline alignment are not addressed in this report because they have already been assessed as part of the [Project] (the previously proposed natural-gas pipeline)." (Exh. 500, p. 4.2-127.) However, the FSA contains no such analysis.

The FSA refers to a "Biological Inventory for the BSEP (BS 2008a)" as the analysis of potential impacts. (Id.) The "Biological Inventory for the BSEP (BS 2008a)" appears to be information submitted by the Applicant to Staff in 2008. The Applicant's submittal to the Commission cannot substitute for the Commission's independent analysis under CEQA, because 1) it does not constitute Staff's independent analysis under CEQA, and 2) it shows that substantial portions of the unanalyzed northern 17.6-mile segment may result in potentially significant impacts that must be mitigated.

Staff's failure to analyze potentially significant impacts is alarming. According to the Applicant's submittal, the Applicant performed a "preliminary evaluation of the proposed 17.6-mile natural gas pipeline…by car on November 13, 2007 by EDAW biologist Lyndon Quon for the Project Applicant." (Exh. 35, p. 19.) According to the "drive-by" survey, the 17.6-mile pipeline alignment transects habitats known for the desert tortoise, the western burrowing owl, and the Mohave ground squirrel. (Exh. 92, Figure 3a and Figure 4b.) Specifically, the 17-mile pipeline segment transects several miles of Mojave creosote bush scrub (Id.), which the Applicant admits is potential habitat for the desert tortoise, Mojave ground squirrel and western burrowing owl. (Exh. 35, pp. 36, 38, 41, Figure 11.)

Although a desert tortoise carcass and burrow were noted along the 17.6 mile pipeline, the Applicant did not survey the pipeline corridor for desert tortoise or burrowing owl and did not survey anywhere for Mojave ground squirrel.[21] (Exh. 92, Figure 4b.) Although several special-status plant species have potential to occur along the 17.6-mile natural gas pipeline alignment, the Applicant did not conduct any special-status plant surveys or analyses.

The Applicant's biological inventory contained no analysis and summarily concluded:

> "A natural gas pipeline will be constructed from California City to the solar block along California City Boulevard, Neuralia Road, and an existing dirt road that accesses the eastern edge of the plant site. This approximately 17.6-mile pipeline will occur entirely within the disturbed and developed shoulders of the existing roads and will avoid

[21] Despite not being surveyed, desert tortoise carcass and burrow were incidentally noted along the pipeline.

> native habitat. Approximately 60.0 acres of disturbed habitat will be temporarily disturbed for the natural gas pipeline."

(Exh. 35, p. 55.) This conclusion is inconsistent with vegetation mapping and figures in the same report. (Exh. 92, Figure 3a and Figure 4b.) In addition, the conclusion that impacts are temporary is inconsistent with the same report that finds that temporary impacts are considered permanent "due to the slow recovery of native communities in the desert ecosystem." (Exh. 35, p. 55.) The Applicant's statement that the 17.6 mile pipeline will occur within "disturbed" habitat says nothing about the potential for significant impacts to habitat or species. In fact, the Applicant's statement is an admission that the pipeline transects habitat, which requires an independent analysis under CEQA.

Finally, Staff acknowledges that it did not analyze the recycled water pipeline from California City to the proposed Project site. (Exh. 500.) According to the FSA,

> If the Energy Commission requires the use of recycled water from California City, staff notes that additional environmental analysis of potential impacts would be required. [The Project] would have to provide information on the project design and alignment.

(Exh. 500, p. 4.9-63.)

2. The FSA has no analysis of the southern 23-mile segment of the Rosamond pipeline through EAFB

The FSA also did not independently analyze potentially significant impacts to biological resources along the Eastern Alternative of the southern 23-miles of the 40-mile Rosamond pipeline through Edwards Air Force Base. (Exh. 500, pp. 6-10,

Alternatives – Figure 2.) The FSA fails to set forth the existing baseline, provides no analysis of potentially significant impacts and identifies no mitigation for impacts to biological resources. Instead, the FSA simply states:

> [Rosamond] has previously engaged in a separate and unrelated effort to provide tertiary-treated wastewater to Edwards Air Force Base (EAFB) by installing a 10-mile pipeline. EAFB completed an environmental review and approved installation of the pipeline which will have excess capacity that can also be used to deliver water for 10 miles of the total distance to the Project.

(Exh. 500, p. 6-10.) However, EAFB only exempted the Project from environmental review under the National Environmental Act. (Exh. 639, March 22, 2010 Tr., pp. 358, 361.) Accordingly, Staff confirmed that Staff did not analyze the segment under CEQA. (March 23, 2010 Tr., p. 358, 361.) Therefore, except to note that Staff did not analyze the Eastern Alternative pipeline route under CEQA, the FSA says nothing more.

3. The FSA fails to analyze and mitigate significant impacts from the Western Alternative of the southern 23-miles of the 40-mile Rosamond pipeline

As with the northern 17.6-mile pipeline alignment for Rosamond, the Western Alternative of southern 23-mile alignment also transects habitats known for the desert tortoise, the western burrowing owl, and the Mohave ground squirrel. However, no protocol-level or other surveys were conducted for these species along the pipeline alignment. (Exh. 603; Exh. 607; Exh. 632, p. 9.) Instead, only vegetation surveys were made:

> "Wildlife biologist Richard Anderson conducted a habitat assessment for desert tortoise (*Gopherus agassizii*) and Mohave ground squirrel (*Spermophilus mohavensis*) and other special status wildlife species on July 19 and 20, 2009. This wildlife reconnaissance survey was conducted during daylight and consisted of slowly driving the route several times, and included the same 2000-ft wide, 23-mile long Study Area described above. The biologist stopped often and investigated the surrounding area on foot. During these driving surveys the biologist observed and documented wildlife and habitat quality. Habitat quality was documented out to 1000 feet on either side of the pipeline alignment."

(Exh. 500, p. 4.2-128.) Vegetation surveys by car during two summer days in July 2009 and unsupported assumptions regarding impacts to special-status plant species and wildlife species along 23 miles of this alignment are patently inadequate. (Exh. 500, pp. 4.2-127-163.)

Although the Rosamond pipeline alignment study area encompasses 5,987 acres[22] (Exh. 500, p. 4.2-136), Staff only identified Project impacts to 11.2 acres of desert tortoise and Mohave ground squirrel habitat, which must be compensated at a 3:1 mitigation ratio. (Exh. 632, p. 11; Exh. 500, Table 4, p. 4.2-74, -156.) This calculation incorporates only direct construction impacts to three plant communities that Staff determined are habitat for desert tortoise and Mohave ground squirrel. (Exh. 632, p. 11.) However, more than 11.2 acres may be significantly impacted. (Id.)

First, substantial evidence shows other unaddressed potentially direct significant impacts on plant communities and protected species. Staff limited its assessment to direct impacts from a 25-foot wide pipeline construction footprint

[22] The Study Area encompasses 1,000 feet on either side of a potential pipeline alignment from the point of delivery at Rosamond's wastewater treatment ponds and extending north 23 miles. (Exh. 500, p. 4.2-128.)

that would accommodate the pipeline trench, backfill material, room for crews and equipment to maneuver around the trench and control traffic. (Exh. 500, p. 127.) While some areas of the pipeline are wide enough to accommodate this corridor, Staff admits that at least 4 miles would extend into the adjacent undisturbed creosote bush scrub and saltbrush scrub habitat. (Exh. 500, pp. 4.2-127-128.) In addition, the pipeline may need to be moved to accommodate the results of spring surveys that have not yet been conducted for the Project. (March 22, 2010, Tr., p. 369-370.) Although Staff claimed that the construction corridor could be less than 25 feet, the record has no evidence regarding where that may occur or whether narrowing the corridor is feasible in a particular location. Without appropriately timed surveys of the pipeline corridor, Staff's assessment of direct impacts is unsupported.

Second, Staff did not incorporate any indirect Project impacts to desert tortoise or Mohave ground squirrel. (Exh. 500, p. 4.2-161.) Indirect impacts as a result of Project-related activities would include elevated noise and dust levels, soil compaction and increased human activity, among others. (Exh. 35, p. 51.) Indirect impacts may be potentially significant in a fragile desert ecosystem. However, no assessment was made upon which to review potential impacts.

Third, Staff concluded that the impacts from the loss of special-status species are less than significant from a vegetation perspective because the plants are common in the Mojave Desert and because the impacts are small and temporary. (Exh. 500, p. 4.2.-157.) However, with a classic oxymoron, the Staff said, "the

temporal loss for these arid plant communities from pipeline construction can span decades to centuries." (Exh. 500, p. 4.2-157.) The Applicant defined temporary impacts to "include the generation of fugitive dust during construction; or removing vegetation for underground pipeline trenching activities and either allowing the natural vegetation to recolonize or actively revegetating the impact area." (Exh. 35, p. 51.) Thus, "[s]urface disturbance that removes vegetation and disturbs the soil is considered a ***long-term temporary impact*** because of slow natural recovery in arid ecosystems. Therefore, all such impacts in the survey area are considered permanent." (Exh. 35, p. 51, emphasis added.) Thus, Staff's calculation of the Western Alternative of the southern 23-mile segment of the Rosamond pipeline "greatly underestimates Project impacts to these special-status wildlife species because the calculation is based solely on the construction footprint and not on the indirect impacts of the project…" (Exh. 632, p. 11.)

Fourth, Staff's conclusion that only 11.2 acres are impacted by the 23-mile pipeline does not incorporate analysis of potential impacts to or mitigation for significant impacts to burrowing owls. The pipeline alignment crosses plant communities that provide moderate to high quality habitat for desert tortoise, Mohave ground squirrel *and western burrowing owl*. (Exh. 500, p. 4.2-14.) Instead, the FSA defers analysis of impacts to western-burrowing owl to pre-construction surveys for the species. (Exh. 500, p. 4.2-160.)

Fifth, Staff's conclusion that only 11.2 acres of Mojave creosote bush scrub and saltbush scrub – that may provide habitat for desert tortoise and Mojave

ground squirrel – are impacted by the 23-mile pipeline does not incorporate analysis of potential impacts to or mitigation for significant impacts to other sensitive plants, or other species of special concern. (Exh. 500, p. 4.2-161.) For example, the FSA lists several special-status plant species (e.g., CNPS 1B) that have moderate to high potential to occur along the Rosamond alignment. (Exh. 500, p. 4.2-147-150.) However, no special-status plant surveys were conducted. Instead, "[d]ue to survey timing, many annual and perennial herbs encountered could not be identified to the species level, or to a level necessary to detect rare plant taxa, if present." (Exh. 500, p. 4.2-130.) Therefore, "[s]pecial-status plant assessment along the Rosamond alignment was limited to an assessment of the habitat suitability for special-status species with known occurrences in the west Mohave region." (Exh. 632, p. 11, citing Exh. 500, p. 4.2-130.) Staff specifically found that several special-status species could potentially occur outside but adjacent to the construction footprint where roads abut undisturbed habitat in creosote bush scrub and saltbush scrub habitat and in alkali flats near the wastewater treatment ponds. Potentially impacted special-status species include Lancaster milk-vetch, Alkali mariposa lily, white pygmy poppy, Mojave spineflower, desert cymopertus, Barstow woolly sunflower, Red Rock poppy, golden goodmania and sagebrush loeflingia. (Id.; Exh. 500, p. 4.2-150.)

The record shows that appropriately timed surveys are necessary to evaluate potentially significant impacts. "Because rare plants are often only identifiable and de[te]ctable on a particular site at certain times of the year, i.e., following early

spring rain events, appropriately-timed surveys for rare plants are critical to assess occurrence. If surveys are not conducted at proper times of the year for a specific plant, presence may not be detected." (Exh. 632, p. 11-12.)

The Western Alternative of the 23-mile pipeline crosses habitat including approximately 84 acres of Joshua Tree woodland, 2,255 acres of Mojave creosote bush scrub, 163 acres of disturbed creosote bush scrub, 1,706 acres of saltbush scrub (zerophytic phase), 322 acres of saltbrush scrub (halophytic phase), 338 acres of disturbed-ruderal saltbrush scrub, 8 acres of rock outcrops and 969 acres of unvegetated areas. (Exh. 500, pp. 4.2-13, 4.2-138.) The pipeline crosses two forks of Cache Creek, an ephemeral drainage and waters of the state, and 12 smaller ephemeral drainages. Staff did not obtain any determination from the U.S. Army Corp of Engineers regarding whether the pipeline crosses waters of the United States. (Exh. 500, p. 4.2-13.) Eleven Joshua trees are mapped in or near the right-of-way for the pipeline. (Id.) Other likely species that could occur in the pipeline alignment include loggerhead shrike (a California Species of Special Concern), LeConte's thrasher, horned larks, desert kit fox, and American badger (a California Species of Special Concern). (Exh. 500, p. 4.2-14; Exh. 500, p. 4.2-26.) In fact, the northern two-thirds of the 23-mile pipeline is suitable foraging and denning habitat of desert kit fox, fair to good habitat for the American badger, and suitable habitat for the Western burrowing owl, loggerhead shrike and Le Conte's Thrasher. (Exh. 500, p. 4.2-152-153.) Despite these potentially significant impacts, only pre-construction surveys are required in the FSA.

The vast array of impacts from piping water to the Project site is almost wholly unanalyzed and unmitigated. This is a standard of neglect unbefitting this Commission and inconsistent with its long history. All of these impacts can be avoided by requiring dry cooling.

III. THE CUMULATIVE IMPACTS ANALYSIS FAILS TO ANALYZE IMPACTS FROM CONSTRUCTION AND OPERATION OF UPGRADES AT THE WASTEWATER TREATMENT FACILITIES

The FSA ignored the cumulative impacts from constructing and operating the wastewater treatment facility upgrades despite referring to these projects as a source of recycled water for the Project.

CEQA section 21083 requires a finding that a project may have a significant effect on the environment if "the possible effects of a project are individually limited but cumulatively considerable. . . . 'Cumulatively considerable' means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." **"**Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." (14 Cal. Code Reg. §15355(a).) "[I]ndividual effects may be changes resulting from a single project or a number of separate projects." (14 Cal. Code Reg. §15355(a).)

"The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future

projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." (*Communities for a Better Environment v. Cal. Resources Agency ("CBE v. CRA")*, (2002) 103 Cal.App.4th 98, 117.) A legally adequate cumulative impacts analysis views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable probable future projects whose impacts might compound or interrelate with those of the project at hand. "Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." (14 Cal. Code Reg. §15355(b).)

As the court recently stated in *CBE v. CRA,* 103 Cal. App. 4th at 114:

> Cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact.

(Citations omitted).

Here, despite the Condition of Certification requiring recycled water from either the California City or Rosamond wastewater treatment facility (projects that would be partially funded by the Applicant (Exh. 506)), no cumulative impact analyses of these projects exist in the Applicant's materials or in the FSA. Both Rosamond and California City plan to implement an extensive upgrade of their wastewater treatment facilities if funded by the Applicant. The impacts from construction and operation of these projects, including the activities described in

their letters of intent to provide recycled water (Exhibit 506), must be disclosed and will likely be cumulatively significant. For example, currently "California City has a 1989 contract, letter of understanding, with the Lahontan Regional Water Quality Control Board which limits its ability to build facilities, residential homes to two homes per acre." (March 22, 2010 Tr., p. 134.) "Because to exceed that would create a groundwater problem. With too much density, a saturation problem with too much septic density." (March 22, 2010 Tr., p. 136.) California City has "23,000 currently platted residential unbuilt-on lots." (March 22, 2010 Tr., p. 138-139.) California City testified that one of the benefits of expanding its wastewater treatment plant and sewer main "is that it will allow our City to grow..." (March 22, 2010 Tr., p. 135.) It is hard to imagine a more explicit admission of the growth inducing effect of a project.

Growth in California City may result in numerous potentially significant impacts that have not been analyzed. For example, potentially significant impacts may occur to water resources in the California City groundwater basin. "Population and quantity of groundwater consumed in the adjacent California City sub-basin is projected to increase over the next decade." (Exh. 500, p. 4.9-56.) The record shows that "California City extracts groundwater from the California City Sub-basin of the Fremont Valley Groundwater Basin, which is hydraulically connected to the Koehn sub-basin. Observed water levels in the California City area are declining in most wells and indicate current groundwater consumption levels exceed recharge…An increase in groundwater consumption is expected to exasperate the decline in water

levels already observed." (Exh. 500, p. 4.9-56.) Furthermore, upgrading California City's sewer and wastewater treatment system in order to be compliant with Lahontan's requirements may cause the City to "come into violation with planning areas for carbon footprint reductions…it doesn't allow [the City] to consolidate in a dense enough fashion to comply with carbon footprint reduction requirements." (March 22, 2010 Tr., p. 139.)

Finally, Rosamond submitted evidence and testified that with a contract to provide 1.3 MGD of recycled water to Beacon, Rosamond would expand its wastewater treatment plant to 2.0 MGD. When asked about the actual maximum that Rosamond could supply once its construction is complete, Rosamond explained that the "tentative plans would be to have a 2 [MGD] expansion which would provide treatment for all the existing flow and room for future growth." (March 22, 2010 Tr., p. 142.) This is consistent with Rosamond's letter of intent, which discloses that Rosamond's complete expansion will have a capacity of 2.0 MGD. (Exh. 506: Rosamond Letter, p. 2.)

Clearly, the Commission must, at a minimum, evaluate potentially significant cumulative impacts of the Project when combined with an expansion and upgrade of either the California City or Rosamond waste water treatment plant. Of course, requiring dry cooling would eliminate any need to analyze or mitigate these impacts.

IV. THE PROJECT'S USE OF FRESH GROUNDWATER FOR POWER PLANT CONSTRUCTION VIOLATES THE WARREN-ALQUIST ACT AND LORS

The Applicant estimated that during construction, initial grading would consume as much as 1.1 billion gallons or 3,376 acre-feet (AF) of water. (Exh. 500, p. 4.9-15.) Staff, however, increased that estimate by 2,028 AF to account for water needed to re-route on-site creeks to an off-site location. (Exh. 500, p. 4.9-15.) Staff also increased the Applicant's estimate by 548 AF to compact 8.3 million cubic yards of soil and by 55 AF to mix soil cement for the bottom of the new "creek." (Exh. 500, p. 4.9-16.) Combined with other construction water uses, the total amount of water needed for construction was revised to 6,574 AF. (Id.) However, Staff also determined that 6,574 AF was not enough water for construction. According to the FSA, Staff believed dust suppression would require 23% more water, for a total permitted use of 8,086 AF of fresh potable groundwater for construction of the Project. (Id.) That equates to the Project using ***7.6 million gallons per day of fresh groundwater for 26 months of construction***. (March 22, 2010 Tr., p. 104; Exh. 500, p. 4.9-115.)

A. Using 8,086 AF of Fresh, High Quality Groundwater for Power Plant Construction Violates the Warren-Alquist Act and LORS

If recycled water is required for the Project, as opposed to dry-cooling, using 8,086 AF of fresh, high quality groundwater for construction of the Project would ***not*** promote all feasible means of water conservation and all feasible uses of alternative water supply sources, as required by Section 25008 of the Warren-Alquist Act. Using 8,086 AF of fresh, high quality groundwater would also violate

Article X, section 2 of the California constitution, which prohibits the waste or unreasonable use of water. Under State Board Policy 88-63, fresh groundwater beneath the Project site is considered to be suitable, or potentially suitable, for municipal or domestic water supply. (See above Section II.A.) If recycled water is ultimately required for the Project, the Commission should not squander 8,086 AF of fresh potable groundwater to suppress dust from re-routing waterways and other activities for construction of the Project without substantial evidence that other measures are infeasible. (Pub. Res. Code § 25008.)

B. If Recycled Water is Selected, Feasible Measures Exist to Mitigate Non-Compliance with the Warren-Alquist Act and LORS

If recycled water is required for power plant cooling despite the many violations of law, recycled water options could be implemented sooner to mitigate other violations of LORS. Specifically, it would be feasible mitigation to require using the same non-potable water that would be used for powerplant cooling to be in place prior to the start of on-site construction in order to be able to use non-potable water to meet part of the construction water requirements during the first five months of on-site construction, and all of the construction water requirements thereafter.

Water use during construction, even at the lower of the different levels estimated in the FSA, would be more than double the rate of use during operation. (Exh. 616, p. 4.) At a minimum, the Applicant should be required to have non-freshwater sources in place prior to construction start, enabling 1,792 AF out of 6,590 AF (27%) of the pre-construction period water requirements to be met from

non-freshwater sources. (Id.) Specifically, 121.3 AF per month would be available from Rosamond if the Rosamond pipeline is built before on-site construction starts. (Id.) Use of this full amount during the first 5 months of construction would provide 606 AF of recycled water. (Id.) Use of about half of this amount during the remaining 21 months would provide 100 percent of the 1,170 AF (56 AF/month) required during the next 21 months of construction. (Id.) Pre-construction water supplies could also be used to meet another 16 AF of water requirements not included in the FSA's total figure of 6,574 AF during construction: filling the raw water storage tank (Exh. 616, p. 4; Exh. 500, p. 4.9-13) and (after treatment, assuming the water treatment facilities were finished before commercial operation) filling the treated water storage tank. (Id.) Similarly, constructing a pipeline to use California City water prior to start of onsite construction would also allow 27% of construction water requirements to be met using reclaimed water. (Id.)

Staff did not dispute that 27% of construction water requirements could be met using recycled water from either Rosamond or California City. (March 22, 2010 Tr., pp. 114-115.) Instead, Staff argued that requiring recycled water to be in place prior to the start of construction was not a viable alternative. (Id. at p. 115.) Specifically, Staff argued that most of the construction water is required in the first five months of construction and that there is no delivery system for the recycled water. (March 22, 2010 Tr., pp. 104 and 102.) These excuses lack substantial evidence to show that requiring a non-potable water supply to be in place prior to

the start of construction is infeasible, especially when undisputed testimony shows that it is feasible.

The FSA is inconsistent regarding the amount of water required during the first five months of construction. Construction water use figures for the first five months of construction was given as both 2701 AF (Exh. 500, p. 4.9-115) and 3,376-5,404 AF. (Exh. 500, p. 4.9-15; Exh. 616, p. 4.) Staff is also not clear on whether and why the bulk of water would be required during the first five months of construction. (March 22, 2010 Tr., p. 105-106.)

> The project plan is to excavate as much as 8 million cubic yards of soil during the construction phase. The schedule is, I'm not real clear on the exact schedule. Initially I thought they were going to do the drainage channel first. They may not be obligated to do that.

(Id.) Thus, there is no evidence that the bulk of construction water is required during the first five months, and no evidence that CURE's proposed mitigation measure is infeasible.

Rosamond stated that it could deliver at least .5 MGD to the Project site within 12 months of a contract with the Project Applicant. (March 22, 2010, p. 140.)

Finally, if recycled water is required, the Commission is perfectly capable and within its authority to require that a delivery system be in place prior to construction of the Project. Neither Soil&Water-1 or Soil&Water-18 require a signed agreement ***before construction*** of the Project. (Exh. 501, Exh. 500, pp. 4.9-73-79, 4.9-93-94.)

Thus, if recycled water is selected, feasible mitigation includes requiring the use of non-potable water for powerplant cooling, with the non-potable water supply

to be in place prior to the start of on-site construction in order to be able to use non-potable water to meet part of the construction water requirements during the first five months of on-site construction, and all of the construction water requirements thereafter.

V. BIOLOGICAL RESOURCES

A. Project Setting and LORS

The Project is situated on a 2,012 acre site and several linear corridors in the Fremont Valley, just east of the southernmost portion of the Sierra Nevada, in the northwestern Mojave Desert. (Exh. 500, p. 4.2-6.) The Project site would be located on land that is habitat for Mojave ground squirrel, a threatened species under the California Endangered Species Act ("CESA"), for which no surveys were conducted to determine presence. The Project site would also be located on land that is habitat for desert tortoise, a species that has "sign" on the site and that is listed as threatened under the state and federal Endangered Species Acts. Western burrowing owl, a species of special concern in California, also has habitat and is present on the Project site. Other species, including desert kit fox (fully protected species), American badger (species of special concern), American peregrine falcon (State fully protected species), northern harrier (species of special concern), loggerhead shrike (species of special concern), Le Conte's thrasher (state watch list), and California horned lark (state watch list), use the Project site. (Exh. 500, pp. 4.2-14, -15, -19-23.) The Applicant proposes to destroy all of this habitat.

The Project also would completely destroy two ephemeral washes that are waters of the state and are located on the Project site, and would re-route the washes to the east side of the property. The Project site is traversed diagonally from southwest to northeast by Pine Tree Creek, an ephemeral desert wash approximately 10,900 feet in length. (Id.) The Project site is also traversed on the west by an unnamed ephemeral wash approximately 2,150 feet in length. (Id.) In the desert, ephemeral streams "provide the same ecological and hydrological functions as perennial streams by moving water, nutrients, and sediment throughout the watershed." (Exh. 500, p. 4.9-166.) The washes contain small mammal burrows, sage sparrow, horned lark, loggerhead shrike and provide value as a wildlife corridor. (Exh. 500, p. 4.2-12.)

The Project's use of Mohave ground squirrel and tortoise habitat, as well as the proposed relocation of tortoises living there, triggers the "incidental take" provisions of the CESA, which normally trigger the Applicant to seek a take permit from the California Department of Fish and Game ("CDFG"). (Fish and Game Code § 2081(a).) "Take" means "hunt, pursue, catch, capture, or kill a protected species. (Fish and Game Code § 86.) "Take" is only permitted if the take is incidental to otherwise lawful activities and the "impacts" are minimized and "fully mitigated." (Fish and Game Code § 2081(b).) Impacts of taking include "all impacts on the species that result from any act that would cause the proposed taking," including impacts to habitat. (Id.)

CDFG typically requires that Projects that result in "take" of threatened species and habitat must, if the habitat cannot be avoided and preserved, pay for the purchase and preservation of land with similar habitat. Because impacts must be fully mitigated, or "roughly proportional in extent to the impact" (Fish and Game Code § 2081(b)(2)), CDFG typically requires that more land be purchased for habitat preservation to fully mitigate for impacts. CDFG determined that the ratio to offset impacts from the Project is 3 acres preserved for every 1 acre impacted, or 3:1. (Exh. 500, p. 4.2-36.) Under CESA, all required measures to minimize and fully mitigate take "shall be capable of successful implementation." (Fish and Game Code § 2081(b)(2).)

No incidental take permit may be issued if the issuance of the permit "would jeopardize the continued existence of the species." (Fish and Game Code § 2081(c).) The department is required to find that projects will not put species at risk of extinction based on "the best scientific and other information that is reasonably available" and shall include "consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of (1) known population trends; (2) known threats to the species; and (3) reasonably foreseeable impacts on the species from other related projects and activities." (Id.)

The Federal Endangered Species Act ("FESA") also prohibits "take" of threatened and endangered species. (16 U.S.C. § 1538.) "Take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." (16 U.S.C. § 1532(19).) "Harm" includes "the

destruction or adverse modification of habitat resulting in potential injury to a species, including injury from impairment of essential behavioral patterns, such as breeding, feeding or sheltering." (50 C.F.R. § 17.3.) Take permits are issued either under section 7 or section 10 of FESA. Section 7 consultation occurs between federal agencies only, covering a specific, discretionary federal action that may affect a listed species (a federal nexus). (16 U.S.C. § 1536.) As a requirement to obtain an incidental take permit to develop land under section 10, an applicant must formulate a Habitat Conservation Plan ("HCP"). (16 U.S.C. § 1539.) HCPs allow development of portions of habitat used by listed species only if (i) the taking will be incidental; (ii) the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; (iii) the applicant will ensure that adequate funding for the plan will be provided; (iv) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and (v) any other measures that the Secretary of Interior may require as necessary or appropriate. (16 U.S.C. § 1539(a)(1)(B).)

In this case, the Project Applicant submitted an application for an incidental take permit under section 10 and a "Low-Effect" HCP to the U.S. Fish and Wildlife Service ("USFWS"). However, USFWS rejected the application, because the Project "did not meet the criteria for a Low-Effect HCP." (Exh. 500, p. 4.2-63.) The record shows that consultation is occurring, so an HCP is part of the Project. However, there is no information regarding the substance of the pending incidental take permit application. There is also no information regarding compliance with the

National Environmental Policy Act ("NEPA") related to the pending incidental take permit application. (42 U.S.C. §§ 4321 et seq.)

For species that do not have special protection under CESA or FESA, CEQA requires an agency to determine whether a Project will cause a significant impact because it will "substantially reduce the number or restrict the range of an endangered, rare, or threatened species." (14 Cal. Code Reg. §16065(a)(1).) CEQA requires that a lead agency set forth a description of the physical environmental conditions in the vicinity of the project, as they exist at the time environmental review commences. (14 Cal. Code Reg. § 15125(a).) The description of the environmental setting constitutes the baseline physical conditions by which a lead agency must assess the significance of a project's impacts. (Id.) CEQA then requires an analysis of direct, indirect, and cumulative impacts. (Pub. Res. Code §§ 21083, 21065, 21065.3.) CEQA also prohibits agencies from approving projects "if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." (Pub. Res. Code §§ 21002, 21081.) CEQA requires agencies to "avoid or minimize environmental damage where feasible." (14 Cal. Code. Reg. § 15021(a).)

Finally, California Fish and Game Code regulates all changes to waters of the state. (Fish and Game Code §§ 1600 et seq.) Specifically, it is unlawful for any person to "substantially divert or obstruct the natural flow of" the bed, channel, or bank of, any river, stream, or lake without a "written agreement," commonly called

a streambed alteration agreement, regarding the protection of fish and wildlife resources. (Fish and Game Code § 1602(a).)

B. The Project Will Result in Unmitigated Significant Adverse Impacts to Sixteen Acres of Waters of the State and Will Violate LORS

One of the most significant impacts of the Project is the mass grading of more than 7 million cubic yards of soil and the total destruction of Pine Tree Creek and an unnamed ephemeral wash through the Project site that will result in the loss of 16 acres of jurisdictional waters of the State. (Exh. 500, p. 4.9-167.) Grading and construction for the Project would eliminate (a) 10,900 linear feet (14.96 acres of state waters) of Pine Tree Creek, (b) approximately 2,150 linear feet (1.04 acres of state waters) of the unnamed wash, and (c) approximately 400 to 650 acres of floodplain associated with the Pine Tree Creek wash. (Exh. 500, p. 4.2-28.) Pine Tree Creek is a major drainage for approximately 82 square miles of watershed during rain events. (Exh. 611.) The 100-year flow event is conservatively estimated at between 14,000 and 20,000 cubic feet per second. (Id.)

In 2008, CDFG recommended avoiding impacts to state waters and requested that the applicant evaluate alternative site layouts that would avoid the desert washes. (Exh. 500, p. 4.2-28.) The Applicant responded that it was infeasible. (Id.) Staff subsequently requested that the Applicant revise its infeasibility analysis and evaluate an alternative layout as described by Staff in its alternatives analysis. (Id.) The Applicant did not respond. (Id.)

CDFG and Lahontan RWQCB requested assurances that the Project "restores elements of the natural character of the existing Pine Tree Creek wash." (Exh. 500, p. 4.9-43.) Staff concluded that within the Project site, Pine Tree Creek provides significant hydrological and biological values and functions, including:

1. hydrological connections with Koehn Lake, a seasonally important wildlife resource;
2. stream energy dissipation during high-water flows, which reduces erosion and improves water quality;
3. surface and subsurface water storage;
4. groundwater recharge;
5. sediment transport, storage, and deposition aiding in floodplain maintenance and development;
6. nutrient cycling; and,
7. support for vegetation communities that help stabilize stream banks and provide wildlife habitat and a movement corridor.

(Exh. 500, p. 4.2-13.) Staff concluded all of these functions remain intact, except those relating to wildlife habitat and connectivity, which have been impaired, but not eliminated, by the recent disturbances to vegetation from agricultural activities. (Id.) However, field investigations to examine wildlife movement in Pine Tree Creek were never conducted.

The Project is also likely to illegally take desert kit fox, a fully protected species. Desert kit fox is a **fully protected species** under the California Fish and Game Regulations. Specifically, "desert kit fox…may not be taken at any time." (5 Cal. Code Regs. §460.) During a site visit, Commission and CDFG staff observed two potential desert kit fox burrows adjacent to the creek. (Exh. 611, p. 6.) The FSA states that desert kit fox sign were detected on the Project site, and "the site

includes marginally suitable foraging and denning habitat for this species." (Exh. 500, p. 4.2-37.) The FSA also states that construction of the project could kill or injure desert kit fox by crushing or entombing fox if avoidance measures are not implemented. Despite this significant issue, the FSA contains no analysis of compliance with LORS for fully protected species, cites the wrong section of the Code of Regulations for LORS,[23] and only requires pre-construction surveys concurrent with desert tortoise clearance surveys for kit fox dens. (Exh. 500, p. 4.2-37.) Finally, the FSA recognizes that the Project may result in significant impacts to wildlife from the total destruction of more than 2,000 acres of habitat and that the Project site provides suitable foraging and denning habitat for desert kit fox, but requires no mitigation based on evidence that such mitigation would reduce impacts to the species and its habitat to less than significant.

Eliminating the washes on the Project site "would fundamentally and permanently alter the natural geomorphic and hydrological processes that currently characterize the project site, which in turn would fundamentally alter the biological processes that support recruitment of native vegetation and creation of wildlife habitat within the wash and on the associated floodplain." (Exh. 500, p. 4.2-28.) For these reasons, the FSA concludes that construction of the Project would significantly impact the biological functions and values of the washes.[24]

The FSA's mitigation for significant impacts to the biological functions and values of the washes are completely inadequate to mitigate the impacts. The

[23] The FSA also cites incorrect LORS applicable to American badger. (Exh. 500, pp. 4.2-36, -37.)
[24] *Id.*

Applicant originally proposed to replicate the hydraulic and biological function of the existing waters in the re-routed engineered channel for Pine Tree Creek. (Exh. 500, p. 4.9-167.) However, the Applicant proposal never materialized. In fact, the Applicant recently sought the agreement of Staff to modify Bio-18 to abandon long-term *biological* monitoring and management and instead only monitor and manage to minimize weeds and keep the channel safe from wildlife entrapment. (Exh. 502, p. Bio-32.) These measures are a far cry from replicating the washes' biological functions identified by Staff.

In addition, Staff found that there is a significant level of uncertainty as to whether the revegetation criteria can even be met. (Exh. 500, p. 4.9-168.) The Applicant proposes to re-route Pine Tree Creek and the smaller unnamed wash into a channel created inside the eastern property boundary. (Exh. 500, p. 4.2-6.) The rerouted channel would require concrete armoring, and likely riprap and soil cement. (Exh. 500, p. 4.2- 7.)

1. Final Wash Mitigation Plan

The FSA concluded the proposed rerouted channel with armoring and drop structures will bear "no resemblance to any natural hydrological feature in the Mojave Desert, nor are there any examples of successful implementation of such a drop structure channel design at this scale in a desert ecosystem." (Exh. 500, p. 4.2-29.) In other words, the Applicant's experiment is doomed to failure. Despite this, Staff concluded that a Final Desert Wash Revegetation Plan and other mitigation would mitigate impacts to less-than-significant levels. (Exh. 500, p. 4.2-33.)

The scale and scope of the applicant's proposal to recreate a natural desert ecosystem is unprecedented. However, the Applicant need not worry about failure, since Staff has not proposed any conditions ensuring that a recreated creek will resemble a natural hydrological feature with biological resources. Thus, the FSA has no basis to conclude that mitigation will offset impacts to less-than-significant levels.

The record shows that, "[a]t best, the proposal to reroute approximately 2.5 miles of desert wash constitutes an untested experiment." (Exh. 600, p. 22.) According to biologist Scott Cashen, to even consider recreating a creek, "the conditions of certification must account for the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporal losses of environmental functions, and the difficulty of restoring or establishing the desired resource type and functions." (Exh. 600, p. 22.) However, the conditions of certification in the FSA do not adequately address these variables.

Condition of Certification Bio-18 establishes three success criteria for the Desert Wash Revegetation Plan. Condition 2a requires establishment of <u>at least</u> 15% native desert wash shrub cover within the channel bottom by the end of the 10-year re-vegetation period. (Exh. 338, p. Bio-31.) However, the actual condition of certification indicates cover should be no less than 4.8 acres out of the 41.5-acre channel bottom. (Id.) This would equate to cover of 11.5%.

Condition 2b requires establishment of at least 7% native desert wash shrub

cover on each of the 11 channel reaches between drop structures. (Id.) If each reach achieves exactly 7% cover, total cover will equal 7% (not the 15% target suggested in Condition 2a). (Exh. 600, p. 4.2-107.) Condition 2c requires maintaining weed cover below 2%. (Exh. 338, p. Bio-31.) These conditions fail to "restore[] elements of the natural character of the existing Pine Tree Creek wash." (Exh. 500, p. 4.9-43.)

Mitigation must replace the functions and values that are impacted. Despite the numerous functions and values that will be impacted by grading the site's washes (e.g., connectivity, floodplain maintenance, nutrient cycling), the FSA provides no other success criteria besides maintaining a low level of noxious weeds within the channel bottom.

In short, the mitigation plan is entirely inadequate.

C. The Project Will Result in Unmitigated Significant Adverse Impacts to Mohave Ground Squirrels

The Mohave ground squirrel (*Spermophilus mohavensis*) is listed as threatened under the California Endangered Species Act.

1. The FSA Fails to Set Forth an Accurate Baseline By Relying on Unsupported Conclusion That the Site Provides No Habitat for Mohave Ground Squirrels

Staff concluded that most of the 2,012-acre Project site is not likely to be inhabited by the Mohave ground squirrel. (Exh. 500, p. 4.2-35) Staff's conclusion was reached even though there have been no survey attempts to document the presence of the squirrel on the Project site.[25]

[25] FSA, p. 4.2-18.

The California Department of Fish and Game requires that surveys be conducted on proposed project sites that support desert scrub vegetation and that are within or adjacent to the Mohave ground squirrel geographic range. (Exh. 603.) The Project site satisfies these criteria: it has 429.5 acres of desert scrub vegetation (Exh. 500, p. 4.2-9) and it is within the squirrel's geographic range. (Exh. 600, p. 1.)

When protocol surveys (which include trapping) for the Mohave ground squirrel are not conducted, CDFG requires an assumption of presence in all areas where potential habitat for the species is present. (Exh. 603.)

Protocol surveys were not conducted for the Project, yet despite the CDFG requirement, Staff did not assume presence of the species. Instead, Staff relied on the Applicant's conclusion that the Project site does not provide potential habitat for the species. Specifically, Staff stated: (a) the 429.5 acres of disturbed vegetation (fallow saltbush scrub and desert wash scrub) on the plant site would not support resident Mohave ground squirrels because it lacks the appropriate variety of native shrub and herbaceous plants needed for "sustenance" throughout the active season; and (b) the 60.3 acres of desert wash on the site does not provide suitable habitat or a movement corridor for Mohave ground squirrels because shrub vegetation is sparse, plant diversity is low, and little cover or forage appropriate for the species is available. (Exh. 500, p. 4.2-35; Exh. 600, p. 1.) Staff's conclusions lack substantial evidence, because 1) the scientific community lacks knowledge on Mohave ground squirrel habitat requirements and (2) there is no published information that supports Staff's conclusion. (Exh. 600, pp. 1-5.) In the absence of protocol surveys,

the Commission must assume that Mohave ground squirrels are present.

Unlike Staff in the FSA, the Commission and the Project Applicant's consultant previously acknowledged the lack of knowledge on Mohave ground squirrel habitat requirements. In response to Kern County's 1992 petition to have the squirrel delisted, Robert Therkelsen, Deputy Director for Energy Facilities Siting and Environmental Protection, wrote: "[t]he CEC Biology Staff has found there is a lack of scientific research on the population, range, density, behavior, taxonomic relationships, and habitat preferences of the species." (Exh. 604 (emphasis added).) In 1999, the Applicant's consultant stated that "little is known of Mohave ground squirrel habitat needs or even where it still occurs" (Id.), and more recently he reported "there is still little published information on its [Mohave ground squirrel] distribution, abundance, and population trends." (Exh. 600, p. 2.) CURE's expert is not aware of "any published literature supporting staff's ability to look at a site and determine that the site does not contain the species or its habitat." (Exh. 600, p. 2.)

Furthermore, CDFG acknowledged during this proceeding that Mohave ground squirrels have been detected in areas where they have not been expected and that portions of the Project site have a fairly well established community of burrowing animals. (Exh. 605.) At the evidentiary hearing, CDFG confirmed that habitat assessment for Mohave ground squirrel are not valid indicators of presence of the species:

> MS. GULESSERIAN: …regarding Leitner's assessment of habitat for Mojave ground squirrel…have there been high numbers of Mojave ground squirrel detected via trapping in areas not predicted to support Mojave ground squirrel based on habitat and soil type, alone?
> MS. VANCE: Yes, there has.

Therefore, either protocol surveys must be conducted or presence of Mojave ground squirrel must be assumed. Neither occurred for the Project.

Despite the Applicant and Staff's conclusion, substantial evidence shows that the Project site provides Mohave ground squirrel habitat. "The Mohave ground squirrel has been found to occur in all the broadly-defined plant communities of the western Mojave Desert, and it is CDFG's expert interpretation that the Mohave ground squirrel continues to occur in those communities." (Exh. 600, p. 3.; Exh. 604.) Vegetation communities where Mohave ground squirrel occur include creosote bush scrub and saltbush scrub, both of which are present on the Project site and in the surrounding area. (Exh. 600, p. 3, Exh. 500, pp. 4.2-10, 4.2-26.)

The FSA states the *Atriplex* scrub community (also referred to as saltbush scrub) on the Project site is characterized by 22% to 25% cover and that the Mojave Desert Wash Scrub community is characterized by 15% cover.[26] Most desert plant communities, including those occupied by the Mohave ground squirrel, are characterized by a lack of cover with studies reporting bare ground between widely spaced shrubs or 10% to 19% cover. (Exh. 600, pp. 3-4.)

The FSA implies the Project site does not have the plant food and diversity necessary to support Mohave ground squirrels. However, one study by Leitner and

[26] FSA, p. 4.2-9, 4.2-10.

Leitner showed that individual Mohave ground squirrels frequently concentrate their foraging on one or a few foods. (Exh. 600, p. 4.) The plant species that were abundant in Mohave ground squirrel fecal samples collected by Leitner and Leitner were detected during the Project's plant surveys. (Exh. 600, p. 4.) Another study by Recht concluded that four plants comprised the major food resources for the squirrel. (Id.) Recht also concluded that Mohave ground squirrels did not forage on these plants simultaneously, but foraged on them separately through time over the season. (Id.) All four of the major food resources reported by Recht were detected during plant surveys conducted on the Project site. (Exh. 600, pp. 4-5.) "One of these species, Russian thistle (*Salsola tragus*), was reported to be a dominant plant species on the Project site's Fallow Agricultural-Ruderal community, and it occurred in dense stands along the terminus of Pine Tree Creek (on-site)." (Exh. 600, p. 5; Exh. 500, pp. 4.2-9, 4.2-17.)

Finally, Staff's conclusion that the Project site does not have the plants needed for "sustenance" is unsupported. A study by Aardahl and Roush concluded that Mohave ground squirrel reproduction and survival rates are likely dependent on the availability of annual grasses and forbs. (Exh. 600, p. 5.) The 2008 surveys conducted at the Project site detected a "substantial increase in the number of native annual species found growing in the survey area" after rainfall. (Exh. 87, p. 26.) A total of 56 native, annual plant species were reported growing in the Project survey area. (Id.)

In summary, all available literature on habitat use of the Mohave ground squirrel demonstrates that the squirrel occurs in all Mojave Desert scrub communities, even those with low plant diversity. (Exh. 600, p. 5; Exh. 604.) Therefore, it is not yet possible to specify any distinctive habitat use requirements for Mohave ground squirrels other than desert scrub communities, such as those on the Project site. (Exh. 600, p. 5.)

CDFG requires that surveys be conducted on sites that support desert scrub vegetation and that are within or adjacent to the Mohave ground squirrel geographic range. (Exh. 603.) The Project site satisfies these criteria: it has 429.5 acres of desert scrub vegetation (Exh. 500, p. 4.2-9) and it is within the squirrel's geographic range. (Exh. 600, p. 1.) Staff's and the Applicant's conclusion that the Project site does not support desert scrub vegetation is contradicted by the evidence, and by CDFG's explicit testimony:

> MS. VANCE: Just to clarify, Fish and Game was not willing to concede that the species was not absent with no trapping surveys. And so there was a series of meetings and discussions where the applicant conceded and gave us some reasonably supported information, based on biological considerations, that there could be animals present in low densities, at least during part of their lifecycle. And we concurred with that determination but we did not concur that it's not habitat or that they're not there. And I just want to be clear on that.

(March 22, 2010 Tr., p. 316.)

Therefore, the Commission must assume presence of Mohave ground squirrels on at least 429.5 acres of the Project site, provide a valid assessment of impacts to the species, and provide measures that fully mitigate impacts to the species and its habitat.

2. The Impact Analysis is Flawed and, Hence, Mitigation is Inadequate

Staff reviewed "the analysis by Dr. Leitner and the studies he cites supporting conclusions, and while acknowledging that such estimates are necessarily speculative, agrees that loss of two transient individuals is a reasonable estimate of take of [MGS] during construction on the plant site." (Exh. 500, p. 4.3-36.) Staff accepted the Applicant's proposal to mitigate 5 acres of impacts to Mohave ground squirrel habitat along the transmission corridor at CDFG's recommended mitigation ratio of 3:1 for a total of 15 acres of compensation. Staff also accepted an arbitrary 100 acres of compensation land for impacts to Mohave ground squirrel (and desert tortoise) on the plant site. The FSA's mitigation is inadequate to mitigate significant impacts to the species. Staff's methods used to estimate impacts and justify proposed compensation are "unsupported, highly speculative, and fundamentally flawed." (Exh. 600, p. 6.)

First, an assessment is not "necessarily speculative" when a considerably more reliable estimate could have been obtained through visual and small mammal trapping surveys, such as those specified in CDFG's Mohave Ground Squirrel Survey Guidelines. (Exh. 600, p. 5; Exh. 603.)

Second, the presumption that any use of the site would be by "transient" squirrels only is completely arbitrary, especially because no protocol surveys were conducted. Such a presumption could only have been made by knowing if animals occupied the Project site, examining the movement of animals using the site, and then determining if these animals were resident or dispersing (which was not

attempted). (Exh. 600, p. 6.) None of these things were done.

Third, Leitner's analysis and conclusions regarding the Project site contradict his own studies. (Id.) For example, Leitner's assertion that squirrels would not cross barren fallow agricultural land present on the Project site is inconsistent with the conclusion of his study "that large unvegetated areas might constitute barriers to dispersal, but that rough terrain and rocky soils might be traversed if some shrub cover is available." (Exh. 600, p. 6.)

Fourth, the methods used to estimate take and determine compensation relied on several calculations that incorporated habitat quality and animal density extrapolated from other areas. This approach was rejected by CDFG and independent scientists. (Exhb. 600, p. 6.) For example, the Applicant's consultant indicated that he could "estimate the future carrying capacity of good quality, protected habitat by reference to studies at two Coso sites during the period 2001-2008," which are located in the extreme northeastern corner of the species' range, as opposed to the Project's location in the south central portion of the species' range. (Exh. 600, p. 7; Exh. 92, p. 39.) However, in response to Kern County's petition to delist the species, CDFG wrote:

> "[i]t is not practical to calculate the density or estimate the population of Mohave ground squirrel throughout its range at any point in time. A calculation or estimate would be based on a density or population derived from trapping results in one or more local areas and then extrapolated to the entire geographic range. Because the squirrel is patchily distributed and is affected at least locally by rainfall patterns, accurate extrapolation of local density and population figures to the entire range is not feasible. Even if it were practical to estimate range-wide density of the squirrel, the resulting figure would not be

meaningful in influencing conservation decisions for the species."[27] (Exh. 604.) Further, "Endangered Species Biologist Curt Uptain independently concurred with CDFG's position in stating 'the results [of other studies] cannot be broadened to represent the entire range of the species.'" (Exh. 600, p. 7.)

Finally, the Applicant's consultant again contradicts his own conclusions in previous studies. For example, he stated that "[i]n the absence of a randomized sampling procedure, the results of such surveys apply only to the trapping site and cannot be extrapolated to the general region." (Exh. 600, p. 7.)

Therefore, Staff's estimate of impacts and required compensation are unsupported and flawed.

3. Feasible Mitigation Exists to Reduce Significant Impacts and Compensate for Take

The Mohave ground squirrel occupies the smallest geographic range of any of the seven *Spermophilus* ground squirrels in California. (Exh. 604.) After the evaluation conducted in 1993, CDFG decided to retain the threatened status of the Mohave ground squirrel based on continuing habitat destruction and degradation. (Id.) At that time, the California Energy Commission concluded

> "[t]here is minimal information…that these human-induced effects [on habitat] will be slowed, eliminated, or rectified in the near future to allow the species to reoccupy habitat from which it has been extirpated. We encourage and recommend aggressive scientific investigation and the implementation of habitat conservation plans that will assure the continued existence of the Mohave ground squirrel

[27] Gustafson JR, State of California, Department of Fish and Game. 1993. A status review of the Mohave ground squirrel (*Spermophilus mohavensis*). A report to the California Fish and Game Commission in response to Kern County's petition to delist the Mohave ground squirrel as a Threatened Species. Nongame Bird and Mammal Section Report 93-9 (Exhibit 3).

throughout its range."

(Exh. 600, p. 8.)

Much of the Project site contains degraded habitat in the process of recovery. For degraded habitat, CDFG states the effect is temporary, and Mohave ground squirrels in reduced numbers can continue to occupy the habitat during the natural process of restoration. (Exh. 604.) Thus, CDFG has concluded destruction of, or damage to, any native plant community in the range constitutes destruction of the Mohave ground squirrel's habitat. (Id.) Destruction of habitat in which squirrels are absent due to previous extirpation constitutes loss of squirrels that would have occupied the habitat in a future population expansion. (Id.) As a result, CDFG has stated that the long-term impact to the species from loss of habitat that could be occupied probably is much the same as loss of occupied habitat. (Id.)

The 2,012-acre Project site and transmission line corridor provide habitat that could be occupied. However, the FSA requires only 115 acres of compensation. "This results in a compensation ratio well below what is currently recommended by CDFG, and for other projects permitted by the CEC (e.g., Ivanpah, Victorville 2)." (Exh. 600, p. 9.) Instead, 115 acres of compensation is derived from 5 acres of Mojave creosote bush scrub on the transmission line at CDFG's recommendation mitigation ratio of 3:1 (Exh. 500, p. 4.2-36) and an arbitrary 100 acres of compensation for potential construction and operation related impacts to Mohave ground squirrel (and desert tortoise). (Exh. 500, p. 4.2-37.) However, the Project site has 429.5 acres of desert scrub vegetation, which is potential habitat for the species (Exh. 500, p. 4.2-9), and it is within the squirrel's geographic range. (Exh.

600, p. 1.) Therefore, compensation for 429.5 acres at CDFG's 3:1 compensation ratio should be required.

4. The Project Will Result in Unmitigated Significant Adverse Impacts to Desert Tortoise

The Mohave population of desert tortoise is listed as threatened under the state and federal Endangered Species Acts.

a. The FSA fails to set forth an accurate baseline and impact analysis for desert tortoise

The FSA states that the Project survey results support Staff's conclusion that the Project site provides little or no habitat to support resident desert tortoises. (Exh. 500, p. 4.2-17.) However, this conclusion is not supported by substantial evidence.

According to the Project Applicant's consultant "[d]esert tortoise sign does not necessarily indicate present [sic] on the site." (March 22, 2010 Tr., p. 336.) However, according to USFWS survey guidelines "tortoise sign (burrows, scats, and carcasses) in the action area indicates desert tortoise presence and therefore requires formal consultation with USFWS." (Exh. 600, p. 18.) USFWS also stated that "[t]he presence of sign is an indication that tortoises might be present and might be using the area." (March 22, 2010 Tr., p. 376.) On the Project site, surveyors detected two intact juvenile carcasses and a deteriorated adult desert tortoise burrow. (Exh. 500, p. 4.2-16.) Surveyors also detected two additional sets of bone and carapace fragments. (Id., p. 4.2-16, -17.) A live adult desert tortoise was also found. (Id., p. 4.2-17.) Thus, the Project site has desert tortoise sign.

(March 22, 2010 Tr., p. 336.)

According to USWFS desert tortoise survey protocols, in order to determine the accuracy of a surveyor in locating desert tortoise sign during presence-or-absence surveys for each project area, "the USFWS recommends that the surveyor conduct an 'intensive survey' in a portion of the project area following completion of the 100 percent survey." (Exh. 600, p. 17.) Then, the accuracy of the survey for the project area is determined by comparing it with the results of the intensive survey. (Id.)

An intensive survey was not conducted for the Project; thus, there is no way to determine the accuracy of the surveys used to evaluate presence or absence. Instead, the Applicant's consultant described the methods she used to derive her conclusions as:

> "We drove around the site (all east of Highway 14, as we know that tortoises reside in the small Project area west of Highway 14) and walked through the habitat at several points. We described and photographed the habitat, <u>partially</u> mapped it, and also examined the habitat surrounding the site...We ran out of time and were unable to look at the habitat along the southern border. However, I looked at this on a subsequent site visit on November 13 and found it to be essentially barren."

(Exh. 92, Attachment 2, Karl Memorandum, pp. 1 and 2 (emphasis added).) Thus, no quantitative measurement of the habitat or reference to scientific literature was made or provided. "According to desert tortoise experts and other biologists, this is not a valid approach for determining the site has had 'no value for population persistence or recovery for many years.'" (Exh. 600, p. 17, citing Exh. 92, Attachment 2, Karl Memorandum, p. 4.)

In rebuttal, the Applicant's consultant did not dispute that no quantitative measurement was made. (Exh. 326, p. 3.) Instead, she continued to rely on a qualitative assessment of the habitat and claimed that non-protocol surveys found no desert tortoise or recent sign on the Project site. (Id.) As described above, evidence in the record shows otherwise, and the same consultant agreed during hearings that the Project site has desert tortoise sign. (March 22, 2010 Tr., p. 336.)

Although the Project site has desert tortoise sign and intensive surveys were not conducted, the Applicant argued that the Project site has no habitat. The FSA then incorrectly concluded "[t]he 2,012-acre plant site provides little or no habitat to support resident desert tortoise [sic] because these former agricultural fields are either barren or shrub cover is less than 2 percent." (Exh. 500, p. 4.2-17.) This conclusion is inconsistent with evidence elsewhere in the FSA and in scientific literature.

The FSA stated shrub cover in the *Atriplex* scrub community (also referred to as saltbush scrub) on the Project site is 22% to 25%, and shrub cover in the Mojave Desert Wash Scrub community is 15% cover. (Exh. 500, pp. 4.2-9, -10.) Furthermore, scientific literature shows that "[a]lthough desert tortoises rely on both shrubs and burrows for cover, they are known to prefer areas with sparse shrub cover because it promotes growth of herbaceous plants, their preferred food." (Exh. 600, p. 16.)

Despite appropriate shrub cover for desert tortoise on the Project site, Staff still concluded the Project site provides little or no habitat. (Exh. 500, p. 4.2-17.) At

the same time, Staff also stated that desert tortoise might occur within the 429.5 acre portion of the Project site that supports desert wash scrub and disturbed fallow saltbush scrub. (Exh. 500, p. 4.2-37.) The FSA also concluded that "transient" desert tortoises might occasionally occur in the *Atriplex* scrub patches or in the 60.3 acres of vegetated desert wash that crosses the site. (Exh. 500, p. 4.2-17.) Staff's findings that desert tortoise are "transient" are unsupported, and the findings regarding habitat are inconsistent.

Staff did not provide scientific evidence to support the inference that any tortoises occurring on the site would be transients. In fact, "[t]he ability to make such an inference would have required a detailed occupancy study, which was not conducted." (Exh. 600, p. 18.) Also, the suggestion that transient individuals occur on site is inconsistent with a finding that the site does not provide habitat. As a result, any portions of the Project site where a desert tortoise could occur are habitat, and this habitat requires mitigation to offset impacts.

b. The FSA does not provide adequate mitigation for desert tortoise and their habitat

The FSA's mitigation for impacts to desert tortoises and their habitat is purportedly based on the loss of 5.0 acres of habitat and two "transient" desert tortoises west of State Route 14 along the transmission corridor, and on compensation for potential construction and operation-related impacts to desert tortoises (and Mohave ground squirrel). (Exh. 500, pp. 4.2-38, -399.) Staff accepted the Applicant's inadequate proposal to mitigate 5 acres of impacts to desert tortoise habitat along the transmission corridor at CDFG's recommended mitigation ratio of

3:1 for a total of 15 acres of compensation. (Exh. 500, pp. 4.2-38, -39.) Staff also accepted an arbitrary 100 acres of compensation land for impacts to desert tortoise (and Mojave ground squirrel) on the plant site. (Id.) The FSA's mitigation is nonsensical and fails to ensure that impacts are mitigated.

First, the FSA provides no support for the conclusion that two "transient" desert tortoises are located west of State Route 14. Instead, the FSA states that transient desert tortoises might occasionally occur in the *Atriplex* scrub patches or in the 60.3 acres of vegetated desert wash that crosses the Project site east of State Route 14. (Exh. 500, p. 4.2-17.) In contrast, the FSA states that the area west of State Route 14 "supports relatively undisturbed habitat with moderately diverse vegetation that could provide adequate forage and cover for a ***resident*** population of desert tortoise…" (Exh. 500, p. 4.2-37 (emphasis added).) Therefore, the area west of State Route 14 supports a resident population of desert tortoise.

Second, Condition of Certification Bio-9 #3 states that if desert tortoises are detected within the project impact area west of State Route 14, the Designated Biologist shall move the tortoise the shortest possible distance, keeping it out of harm's way but still within its home range. (Ex. 338.) However, "home range" is not defined in the FSA. Home range has been defined as "an area repeatedly traversed by an animal during a specified time period, with a boundary defined by proportion of occurrence." (Exh. 600, p. 19 (internal cites omitted).) "[I]f a tortoise is at the edge of its home range, moving it the shortest possible distance will not necessarily maintain it in its home range. Translocated tortoises moved outside of

their home range are likely to suffer higher mortality." (Exh. 600, p. 20.) Therefore, without a definition of the animal's home range, the relocation of desert tortoises fails to mitigate impacts to the species.

Third, although the FSA's mitigation for impacts to desert tortoise and their habitat west of State Route 14 is based on compensation land for the loss of 5.0 acres of habitat, the FSA fails to require adequate compensation for desert tortoise and their habitat on the Project site. Specifically, Staff concluded that desert tortoise might occur within the 429.5 acre portion of the Project site that supports desert wash scrub and disturbed fallow saltbush scrub (Exh. 500, pp. 4.2-37, -38, -39) or within the *Atriplex* scrub patches or 60.3 acres of vegetated desert wash that crosses the site. (Exh. 500, p. 4.2-17.) Instead, Staff accepted an arbitrary 100 acres of compensation land for impacts to Mohave ground squirrel (and desert tortoise) on the plant site. (Id.) Therefore, compensation for 429.5 acres and 60.3 acres at CDFG's 3:1 compensation ratio should be required.

Fourth, neither the Applicant nor Staff determined the location of the FSA's total 115 acres of compensation land. (Exh. 338 (Bio-11).) The FSA's failure to identify the location of the compensation land constitutes an improper deferral of mitigation. Without identifying the compensation land, the agency is unable to determine whether significant impacts to desert tortoise (and other species) are mitigated to a less than significant level, as required by CEQA.

Finally, the FSA's financial $250 per acre "security" for enhancement of compensation habitat is inadequate to ensure enhancement measures can be

accomplished. (Exh. 500, p. 4.2-94.) Enhancement measures "may include habitat restoration, construction and maintenance of protective fencing, etc." (Exh. 600, p. 20; Exh. 92, p. 47.) The cost of moderate rehabilitation was $500 to $2,000 an acre in 1999. (Exh. 600, p. 20.) Furthermore, "[r]ecent fencing projects in the Desert Tortoise Natural Area (the region targeted for acquisition of compensation land) cost $5.25 a linear foot (> $4,300/acre)." (Exh. 600, p. 20.) The cost of comprehensive desert rehabilitation may exceed $10,000 per acre. (Exh. 600, p. 20.) These costs suggest few habitat enhancement measures can be accomplished with the FSA's required $250 per acre security. (Id.) As a result, the FSA's mitigation will fail to ensure that significant impacts will be offset by acquisition of only 115 acres. Also, because the FSA requires a land management plan for the compensation area only after land purchase (Exh. 500, p. 4.2-97), "there is no assurance there will be enhancement measures for the species for which they are intended." (Exh. 600, pp. 20-21.)

c. The FSA's determination that the Project complies with the Federal ESA is unsupported

The Applicant is consulting with USFWS under section 10 of FESA. (Exh. 500, p. 4.2-47; 16 U.S.C. § 1539.) As a requirement to obtain an incidental take permit to develop land under section 10, the Applicant must formulate a Habitat Conservation Plan ("HCP"). (Id.) No take is allowed unless the HCP ensures that (i) the taking will be incidental; (ii) the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; (iii) the applicant will ensure that adequate funding for the plan will be provided; (iv) the taking will

not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and (v) measures required by the USFWS will be met. (16 U.S.C. § 1539(a)(2)(B).) In preparing an HCP, FESA requires a finding that the Project activity is not likely to adversely affect the species, including "the destruction or adverse modification of habitat resulting in potential injury to a species, including injury from impairment of essential behavioral patterns, such as breeding, feeding or sheltering." (50 C.F.R. § 17.3.) These determinations have not been made.

The Project Applicant submitted an application for an incidental take permit under section 10 and a "Low-Effect" HCP to USWFS. (Exh. 500, p. 4.2-63.) The FSA states that the USFWS rejected the incidental take permit application and "Low-Effect" HCP, because the Project "did not meet the criteria for a Low-Effect HCP." (Exh. 500, p. 4.2-63.) The record contains no information regarding the contents of any potential pending application for an incidental take permit.

The FSA also states that, on June 19, 2009, the USFWS issued a Notice of Intent to undertake scoping for environmental review "in connection with a proposed HCP" for the Project, pursuant to the National Environmental Policy Act ("NEPA"). (Exh. 500, pp. 4.2-63, -64.) However, the record also contains no information regarding potential significant environmental affects "in connection with a proposed HCP" for the Project, pursuant to NEPA. Since a proposed HCP is clearly part of the Project, the Commission must determine whether the proposed HCP complies with FESA and NEPA, before certification, pursuant to the Warren-Alquist Act. (Public Res. Code §§ 25523(d)(1); 25525.)

Without evidence regarding the currently pending take permit application, Staff has no substantial evidence upon which to base a conclusion regarding compliance with FESA and NEPA. Therefore, the Commission has no basis to conclude whether the Project complies with LORS.

D. The Project Will Result in Unmitigated Significant Adverse Impacts to Western Burrowing Owl

The FSA concluded that the Project would result in significant impacts to burrowing owls from the "permanent loss of 2,012 acres that are currently used by burrowing owls for nesting and foraging." (Exh. 500, p. 4.2-34.) To avoid impacts to nesting owls, the FSA proposed pre-construction surveys. (Exh. 500, p. 4.2-103.) To avoid direct impacts and take, the FSA allowed passive relocation of owls to a 14.39 acre parcel owned by the Applicant and construction of four artificial burrows on a 6-acre portion of the 14.39 acre parcel. (Exh. 500, pp. 4.2-34, -104.) To mitigate direct impacts to burrows from permanently eliminating more than 2,000 acres of habitat that is currently used by burrowing owls for nesting and foraging, the FSA allowed "acquisition and protection of 20 acres of land suitable for burring owls at some off-site location yet to be determined." (Exh. 500, pp. 4.2-35, -104.) This same 20 acres would also compensate for the direct loss of only 4 burrowing owls. (Id.)

1. The FSA fails to set forth an accurate baseline

CDFG and California Burrowing Owl Consortium ("CBOC") mitigation guidelines are based on the number of owls impacted by a project. (Exh. 607, p. 6.) CEQA also requires mitigation for significant impacts to habitat. The FSA did not

accurately report how many owls and how much habitat will potentially be impacted by the Project.

The FSA concluded that the Project would result in significant impacts to burrowing owls from the "permanent loss of 2,012 acres that are currently used by burring owls for nesting and foraging." (Exh. 500, p. 4.2-34.) The FSA also states that in 2007 a total of 27 burrows with burrowing owl sign were identified within the survey area one-mile buffer. (Exh. 500, p. 4.2-27.) This statement, however, is misleading because more than half of the burrows that were detected occurred *on* the Project site or *along* the transmission line corridor. (Exh. 600, p. 10; Exh. 606; Exh. 35, Figure 11.)

Nine burrowing owls were positively identified, and there is no evidence that any owls were identified in the same area twice. (Exh. 600, p. 11; March 22, 2010 Tr., p. 272.) However, the FSA concluded that only two burrowing owl pairs (or four burrowing owls) were detected within the Project site boundary. (Exh., 500, p. 4.2-21.) The FSA neglects to state that at least a fifth owl was detected on-site during a groundwater pump test in 2008. (Exh. 7, p. 5.3-18, Table 5.3-6.) Furthermore, there is no evidence that the fifth owl does not represent a third burrowing owl pair. According to Scott Cashen, "[b]ecause the surveys were conducted in different areas, the observations should be assumed independent. That is, owls and burrows detected in 2008 were not the same as those that were detected in 2007." (Exh. 600, p. 11.) Finally, four other burrowing owls were detected in buffer areas. Thus, the FSA fails to adequately set forth the environmental baseline for burrowing owls.

2. The impact analysis is flawed.

The FSA concluded the Project will result in the loss of foraging and breeding habitat for only two burrowing owl pairs. (Exh. 500, pp. 4.2-21, -34.) The FSA provided no basis for excluding other owls detected, and no plausible explanation for why each owl detected would be associated with two active burrows.

A total of 27 burrows with burrowing owl sign were identified within an area assessed for potentially significant direct and indirect impacts. (Exh. 500, p. 4.2-27.) The FSA does not explain how burrows could be active or potentially active, yet not contain an owl. (Exh. 600, p. 11.) Nine burrowing owls were positively identified, and there is no evidence that any owls were identified in the same area twice. (Exh. 600, p. 11; March 22, 2010 Tr., p. 272.) Importantly, "[b]urrowing owls exhibit strong burrow fidelity, with owls regularly reusing burrows from one year to the next." (Exh. 600, pp. 11-12.) Therefore, "staff's impact analysis should have assumed most (or all) active burrows were, and are, occupied by owls." (Exh. 600, p. 12.)

3. Mitigate is inadequate.

CEQA prohibits agencies from approving projects "if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." (Pub. Res. Code §§ 21002, 21081.) The Commission must propose and describe mitigation measures sufficient to minimize the significant adverse environmental impacts. (Pub. Res. Code §§ 21002.1(a), 21100(b)(3).) Also, mitigation measures must be designed to

minimize, reduce, or avoid an identified environmental impact or to rectify or compensate for that impact. (14 Cal. Code Reg. § 15370.) Where several mitigation measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified. (14 Cal. Code Reg. § 15126.4(a)(2).)

A public agency may not rely on mitigation measures of uncertain efficacy or feasibilible. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 727 (finding groundwater purchase agreement inadequate mitigation measure because no record evidence existed that replacement water was available).) "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. (14 Cal. Code Reg. § 15364.) Moreover, mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments. (14 Cal. Code Reg. § 15126.4(a)(2).) Finally, CEQA does not allow deferring the formulation of mitigation measures to post-approval studies. (14 Cal. Code Reg. § 15126.4(a)(1)(B); *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 308-309.) Nor does CEQA permit the delegation of mitigation of significant impacts to responsible agencies. (*City of Marina v. Board of Trustees of the California State University*, (2006) 39 Cal.4th 341, 366.)

The FSA indicates that, in addition to significant direct impacts to nesting burrows, the Project would permanently eliminate a large expanse of at least 2,012 acres of habitat that is currently available for foraging and breeding by burrowing

owls. (Exh. 500, p. 4.2-34.) The FSA then states that "[h]abitat loss is one of the primary threats to California's burrowing owl population (Gervais et al. 2008), and the BSEP project would contribute incrementally to this significant loss." (Exh. 500, p. 4.2-34.) However, Staff concluded this "significant" habitat loss (i.e., 2,012 acres) would be off-set through the acquisition of 26 acres of suitable habitat, of which 20 acres would be located at "some off-site location yet to be determined." (Exh. 500, p. 4.2-35.) The 26 acres is comprised of four artificial burrows on six-acres of a 14.39 acre relocation area and acquisition of 20 acres of compensation habitat (which may be combined with other compensation requirements). (Exh. 500, p. 4.2-34, -104.) Staff provided "no scientific basis to determine a nearly 99% reduction in habitat for burrowing owls is an impact that will be reduced to a less-than-significant level." (Exh. 500, p. 4.2-35.)

First, CDFG mitigation guidelines state a minimum of 6.5 acres of permanent habitat should be permanently protected for each pair or unpaired resident bird that is impacted.[28] (Exh. 500, p. 4.2-34.) Staff is aware of these mitigation guidelines (Exh. 500, p. 4.2-34) and considers there to be two pairs of owls within the plant site. However, the FSA only requires the project owner to protect 6 acres for the loss of two pairs of burrowing owls. (Exh. 500, p. 4.2-34.) Therefore, the FSA fails to require at least 6.5 acres of permanently preserved foraging habitat adjacent for each pair or unpaired resident bird impacted by the Project (including transmission line corridor and water pipelines).

[28] CBOC guidelines state 9.75 to 19.5 acres should be permanently protected for each pair or unpaired resident bird that is impacted. (Exh. 600, p. 14.)

Second, CDFG's definition of an impact includes destruction and/or degradation of foraging habitat adjacent to (within 328 feet [100 m]) an occupied burrow. (Exh. 608, p. 6; Exh. 600, p. 14.) However, the FSA states artificial burrows should be at least 150 feet from the impact zone (CDFG guidelines indicate 164 feet [50 m]). (Exh. 500, p. 4.2-34.) Furthermore, the 6-acre area for creation of artificial burrows is bisected by a road, bordered by another road, approximately 110 feet from the railroad, and within 500 feet of several structures. (Exh. 609.) It is immediately adjacent to the Project plant site boundary, which, by definition, precludes it from offsetting impacts and appears to contain significant vehicle disturbance. (Exh. 609; Exh. 600, p. 14.) "These features (i.e., roads, railroad, vehicle disturbance, and location relative to plant site) not only prevent the proposed six-acre Relocation Area from serving as mitigation, they may cause it to serve as a habitat "sink" by contributing to additional mortality to owls." (Exh. 600, p. 14.)

Third, to offset significant impacts from mass grading of more than 7 million cubic yards of soil and destroying over 2,012 acres of nesting and foraging habitat, the FSA requires the acquisition and enhancement of 20 acres of land suitable to support a resident population of burrowing owls. (Exh. 500, pp. 4.2-104, 6-5.) The FSA provides "no ecological basis" to conclude acquisition and enhancement of 20 acres will offset impacts to 2,012 acres of foraging and breeding habitat occupied by burrowing owls. (Exh. 600, p. 15.)

Fourth, the FSA failed to identify the location of the 20 acre compensation land. In addition, the only criteria established for the land are that it provide "suitable habitat" and either currently support burrowing owls or be no farther than 5 miles from an active burrowing owl nesting territory. (Exh. 500, p. 4.2-105.) This is clearly inadequate to ensure that impacts to the species are reduced to less than significant.

The FSA did not establish any success criteria for these mitigation measures. The FSA did, however, include two goals for the six-acre relocation parcel, neither of which have an "ecological" relationship to the impact: (1) Maintain functionality of at least four artificial or natural burrows; and (2) Minimize the occurrence of weeds at less than 10 percent cover of the shrub and herb layers. (Exh. 600, p. 15; Exh. 500, p. 4.2-104.) These are not success criteria, because "the ability to offset losses to owls and their habitat cannot be gauged by measuring weed cover, or by determining that an artificial hole remains unimpeded…" (Exh. 600, p. 14.)

Finally, Condition of Certification Bio-17 improperly defers identification of mitigation for burrowing owls. The condition requires a biologist to "conduct pre-construction surveys for burrowing owls within the project site and along all linear facilities in accordance with CDFG guidelines (California Burrowing Owl Consortium 1993)." (Exh. 338, p. Bio-10, -11, -12.) According to the condition, if burrowing owls are detected within the impact area or within 500 feet of any proposed construction activities, the Project is required to prepare a Burrowing Owl Mitigation and Monitoring Plan. (Exh. 338, p. Bio-10.) "This plan must include

detailed measures to avoid and minimize impacts to burrowing owls in and near the construction areas and shall be consistent with CDFG guidance (CDFG 1995)." (Id.)

The FSA's deferral of identification of avoidance and minimization measures is improper under CEQA. Owls were already detected within 500 feet of and on the project site and related facilities in 2007 and 2008 (no surveys were conducted in 2009). CBOC guidelines indicate a site is assumed occupied if at least one burrowing owl has been seen occupying a burrow there within the past three years. (Exh. 607; Exh. 600, p. 13.) Therefore, a Burrowing Owl Mitigation and Monitoring Plan is required and should have been prepared during Staff's review of the Project to determine if the ultimate required measures will avoid and minimize impacts. The conditional approval of the Project without a Burrowing Owl Mitigation and Monitoring Plan is not sufficient to conclude the significant impact to burrowing owls will be mitigated. Therefore, the Project will result in significant unmitigated impacts to burrowing owls and their habitat.

VI. HAZARDOUS MATERIALS AND WASTE MANAGEMENT: THE PROJECT WILL RESULT IN UNANALYZED AND UNMITIGATED SIGNIFICANT IMPACTS FROM HTF SPILLS AND VIOLATIONS OF LORS

The Project will result in unanalyzed and unmitigated significant impacts from spills of heat transfer fluid ("HTF"), or Therminol VP-1, and violations of LORS related to hazardous materials and waste management.

HTF is a mixture of 73.5% diphenyl ether and 26.5% biphenyl. (Exh. 625, p. 3.) HTF is regulated as a hazardous material by the State due to the constituent

biphenyl, an "extremely hazardous waste." (Exh. 500, p. 4.13-9; 22 Cal. Code Reg., Chap 11, App. X, #299.) The listing of a chemical in Appendix X creates a regulatory presumption that a waste containing that chemical, i.e. HTF contaminated soil, is hazardous unless determined otherwise, pursuant to specified procedures. (Exh. 500, p. 4.13-9.)

According to the Hazardous Materials Business Plan prepared for the Solar Electric Generating Stations ("SEGS") III-VII facilities, which are operated by the Applicant, Therminol VP-1 is a hazardous material that poses acute and chronic health hazards. (Exh. 627; Exh. 625, p. 3.) The materials safety data sheet for Therminol VP-1 states that biphenyl is a hazardous chemical that causes health effects from chronic exposure, including:

- headache, fatigue, nausea, indigestion, abdominal pain, tremor, central and peripheral nerve damage and liver injury.

(Exh. 625, p. 3; Exh. 628, p. 2.) Even under routine use, "emissions of most concern" from the Project originate from the "Therminol decomposition products (biphenyl and benzene) from vents for the [HTF] expansion tanks," among other emissions. (Exh. 500, p. 4.7-11.) HTF is highly flammable and fires have occurred at other solar generating stations that use it. (Exh. 500, p. 4.4-8.) "The components of HTF are reported to biodegrade relatively rapidly in the environment, have slight toxicity to tested terrestrial species, higher toxicity to tested aquatic species, and a potential to bio-accumulate." (Exh. 203, p. 8.) Therefore, spills of HTF, or Therminol VP-1, may result in significant impacts to humans, wildlife and the environment.

A. The Project Will Result in Unanalyzed and Unmitigated Significant Adverse Impacts From HTF Spills

As a preliminary matter, the FSA is inconsistent regarding the amount of HTF that would be used by the Project. In the Hazardous Materials section, Staff analyzed 1.3 million gallons of HTF. (Exh. 500, p. 4.4-8; March 22, 2010 Tr., p. 502.) In the Soil and Water section, however, Staff stated that approximately 2.4 million gallons of HTF will be utilized at any one time within the facility. (Exh. 500, p. 4.9-174.) Staff admitted that the hazardous waste assessment was based on 1.3 million gallons, but claimed that the changed volume would not change the potential impacts "[u]nless it's something that has potential for moving off-site…" (March 22, 2010 Tr., p. 504.) Since the record shows that an HTF spill may result in both on-site and off-site consequences, the additional 1.1 million gallon volume of HTF at the Project site would therefore affect the analysis of potentially significant impacts.

The FSA failed to evaluate reasonably foreseeable potentially significant impacts from HTF spills and failed to evaluate several other potentially significant impacts from HTF spills, including those related to spills and subsequent handling and Project activities related to free-standing HTF. Potential spills of HTF may be much larger and different in composition than potential spills that were analyzed in the FSA, resulting in significant unmitigated impacts both on-site and off-site to people, wildlife, and the environment from potential and likely exposure to toxic levels of contamination.

1. The FSA Failed to Analyze Potentially Significant Impacts From Reasonably Foreseeable HTF Spills

The FSA limited its evaluation of impacts to the annual treatment of an estimated 750 cubic yards of HTF-contaminated soil at the Project's Land Treatment Unit ("LTU"). (Exh. 500, pp. 4.13-10, 4.9-174.) The FSA's analysis was specifically based on similar facilities operated by the Applicant – the SEGS facilities – for its assumptions. (Exh. 500, pp. 4.13-10, 4.4-8.) The FSA stated that the Applicant has operated SEGS III through IX using the same technology since 1989. (Exh. 500, p. 4.13-10.) "[B]ased on their operation data from the SEGS facility, the applicant estimates that approximately 750 cubic yards of HTF-affected soil may be treated per year at the proposed project site." (Exh. 500, p. 4.13-10.)

However, HTF spills at the SEGS facilities operated by the Applicant have been on the order of ***thousands*** of gallons of HTF and ***thousands*** of cubic yards of HTF-contaminated soil. (Exh. 612, pp. 1-2; Exh. 615; Exh. 625, p. 6; Exh. 631.) For example, individual spill episodes include individual 1,000 gallons spilled (Exh. 625, p. 4), 9,000 gallons spilled (Exh. 625, p. 5), 21,000 gallons spilled (Exh. 625, p. 4), and 21,000 gallons spilled (Id.), and annual volumes totaling, for example, 15,000 gallons spilled and 18,000 gallons spilled. (Exh. 625, p. 6.) In contrast, the FSA provided no valid basis for limiting its assessment of potential impacts from undisclosed-sized spills that result in 750 cubic yards of contaminated soil. Therefore, the FSA failed to analyze potentially significant impacts from reasonably foreseeable spills.

2. The FSA Failed to Analyze Other Potentially Significant Impacts From HTF Spills, Including Impacts Related to Free-Standing HTF

Staff only analyzed significant impacts from HTF spilled as a liquid. Staff's analysis states that "Therminol can be expected to remain liquid if a spill occurs." (Exh. 500, p. 4.4-8.) However, the FSA conceded that HTF may not remain liquid when spilled. In response to Lahontan Regional Water Quality Control Board comments that seismic events might create large spills of HTF, Staff stated that "[a]ny hot HTF spilled would cool to ambient temperatures and thicken …become[ing] a wax-like solid..." (Exh. 500, p. 4.4-14.) This discrepancy is alarming in that Staff did not analyze significant impacts from HTF as a "wax-like solid" on top of the soil surface in either the Hazardous Material section or the Waste Management section of the FSA. (Exh. 500, pp. 4.4-1-18, 4.13-1-19.)

Instead, the Waste Management section of the FSA analyzes HTF spills only as liquid. Staff's analysis states that "Therminol can be expected to remain liquid if a spill occurs." (Exh. 500, p. 4.4-8.) "HTF spills typically spread laterally on the bare ground and soak down to a relatively shallow depth. In these cases, the soil must be removed from the spill site and properly managed." (Exh. 500, p. 4.13-9.) According to Staff, "[s]pills of HTF at BSEP would be cleaned up within 48 hours, and the contaminated soil would be placed in the staging area of the LTU and covered with plastic sheeting." (Exh. 500, p. 4.13-10.) This analysis fails to describe any process, or project description, related to "wax-like solid HTF and, thus, fails to

consider significant impacts from HTF that is different in composition, or more "wax-like," than liquid HTF, which contaminates soil.

Spills will result in the generation of freestanding, "wax-like," or "tar-like" hazardous waste, which is completely unaddressed by Staff in the FSA. CURE's consultant independently investigated HTF in order to evaluate potentially significant impacts, feasible mitigation and compliance with LORS. Public records show that massive volumes of spilled HTF may be recovered from the ground surface and filtered or recycled. (Exh. 625, p. 5; Exh. 629.) "Following spills, significant volumes of free-standing HTF must be vacuumed or scooped from the ground surface at the SEGS facilities." (Exh. 625, p. 5.) Recovery of spilled HTF may involve "use of a vacuum truck to recover the free-standing HTF from atop the soil." (Id.) At SEGS, the County issued a Notice of Violation for the handling and reporting of the spilled free-standing HTF that resulted from a 9,900-gallon spill. (Exh. 625, p. 6; Exh. 630.) Subsequent reports show that during 2004 to 2005, 15,000 gallons of spilled HTF were sent to a "filtration facility" to remove dirt and water for reuse in the piping system, and that during 2006 to 2007, 18,000 gallons of spilled HTF were sent to a "filtration facility." (Exh. 625, p. 5; Exh. 631.)

Cleanup can range in duration. At SEGS, it took three days to recover 7,700 gallons of HTF, which was taken to an on-site facility for recycling. (Id.) The total volume of the spill was estimated to be 9,900 gallons. (Id.)

During evidentiary hearings, the Applicant confirmed that the Project involves vacuuming up HTF, filtering particulates out of the HTF on the Project site, and returning the HTF to a tank. (March 22, 2010 Tr., pp. 468, 479-480.)

For "wax-like solid" HTF, significant volumes of free-standing HTF may need to be vacuumed or scooped from the ground surface. (Exh. 625, p. 5; Exh. 629; March 22, 2010 Tr., p. 468.) Handling "tar-like" (March 22, 2010 Tr., p. 468) or "wax-like solid" HTF also involves on-site filtering of particulates and on-site recycling. (Id.; Exh. 629; March 22, 2010 Tr., p. 468.) Therefore, spills of free-standing HTF would involve different environmental and public health impacts than those analyzed or mitigated in the FSA.

Impacts may also be more dangerous than impacts from only HTF-contaminated soil analyzed in the FSA, resulting in significant unanalyzed and unmitigated impacts. For example, at SEGS, "a 9,900-gallon spill resulted in a vapor cloud that traveled 3500 feet south to be visible on highway 58 and resulted in the closure of that highway by the California Highway Patrol." (March 22, 2010 Tr., p. 427; Exh. 625, p. 8; Exh. 629.) According to the spill report, numerous reports of "noxious smells" were made to the Kern County Fire Deptartment in Boron, six miles away from the HTF spill. (Exh. 629, p. 2.) Furthermore, "spills may be so dangerous that safe access to stop the leaks is impossible..." (Exh. 332.) "Also worst case, potential spills could result in approximately 500 truck trips for one spill alone, on the order of 30,000 gallons, as seen at the SEGS facility in Kramer Junction." (March 22, 2010 Tr., p. 427.) Five hundred truck trips to

transport 6,408 cubic yards of contaminated soil for disposal in hazardous waste landfills would result in impacts "on traffic and potential exposure to people and the environment at the place of disposal, which would likely be Kettleman Hills." (March 22, 2010 Tr., p. 427.)

Substantial evidence shows that impacts may be significantly more dangerous and extensive than analyzed in the FSA. As described above, HTF is a hazardous material that poses acute and chronic health hazards, including headache, fatigue, nausea, indigestion, abdominal pain, tremor, central and peripheral nerve damage and liver injury, results in "emissions of concern" from decomposition products, including biphenyl and benzene, and is highly flammable. (Exh. 627; Exh. 625, p. 3; Exh. 628, p. 2; Exh. 500, p. 4.7-11.) The FSA does not recognize that spilled HTF may involve vapor clouds, closures of highways, closures of roads concurrently with hundreds of trucks moving hazardous waste, noxious odors, or anything to do with the process for handling, vacuuming, scooping, filtering or recycling "wax-like solid" HTF. With respect to hazardous materials and waste management, the FSA does not include a discussion of nearby sensitive receptors that may be exposed, the potential risks, the potential for vapor clouds, constituents of potential vapor clouds, potential causes of noxious odor, or any other issue related to significant impacts from these known and potential aspects of the Project.

Thus, the FSA fails to analyze potentially significant impacts to workers, on-site and off-site consequences to the public, wildlife and the environment, or any

other related significant impacts to the community and the environment. (Exh. 628; Exh. 500, pp. 4.1-10, 4.1-16; Exh. 629.) The Commission cannot find that all impacts from HTF spills have been evaluated and analyzed based on this record.

B. Because the FSA Failed to Analyze Potentially Significant Impacts From Free-Standing HTF, the FSA Lacks Conditions to Mitigate Remediation Activities That Will Occur

Spilled HTF at the Project will require a response that was not described or analyzed in the FSA. The FSA fails to include any provisions for the Project's handling of free-standing HTF atop the ground surface. (March 22, 2010 Tr., pp. 468, 479-480.) The FSA contains no description of the potential volume of wax-like HTF that may be generated, no description of the duration of HTF exposure in the environment, no description of the process for handling the substance, no estimate of the amount of HTF that will be filtered and reused, and no provisions for handling of the contaminated water and soil that is removed from the free-standing HTF, among other Project-related activities. Instead, the FSA only considers the need to annually treat an estimated 750 cubic yards of contaminated soil at the Land Treatment Unit that would result from spilled HTF. (Exh. 500, p. 174.)

Similarly, the Project documents, including the Report of Waste Discharge, did not describe or include provisions for handling spilled free-standing HTF. (Exh. 203.) The Project Applicant provided no design specifications for, much less explanation of, treatment technologies for the removal of soil and water from the free-standing HTF. The record shows that even under routine use, "emissions of most concern" from the Project include "Therminol decomposition products

(biphenyl and benzene) from vents for the [HTF] expansion tanks…" (Exh. 500, p. 4.7-11.)

Finally, the FSA did not consider consistency with any Kern County permit requirements or any state or federal hazardous waste permits that may be required for filtering hazardous waste on the Project site or other aspects of handling free-standing HTF.

HTF spills may result in potentially significant impacts and require clear procedures and mitigation for on-site clean-up and/or recycling or reuse that may occur as part of the Project but has never been described or analyzed. Thus, the FSA fails to inform the public and the decisionmakers about the Project and its potential impacts and fails to mitigate those impacts.

C. The FSA's Mitigation Measures for HTF Spills Do Not Mitigate Significant Impacts and Violate LORS

1. Hazardous Materials Conditions Fail to Mitigate Significant Impacts

The FSA's Hazardous Materials Conditions of Certification fail to mitigate the reasonably foreseeable potential impacts from spills and violate LORS. Instead, the conditions reveal how little Staff understood about HTF use by the Project and potential impacts from HTF spills.

According to Haz-7, the project owner shall place an adequate number of isolation valves in the HTF pipe loops so as to be able to isolate a solar panel loop in the event of a leak. (Exh. 500, p. 4.4-18.) There is no evidence that this measure addresses significant impacts.

First, in the Hazardous Materials section, Staff incorrectly analyzed 1.3 million gallons of HTF used by the Project, even though approximately 2.4 million gallons of HTF will be utilized at any one time. (Exh. 500, pp. 4.4-8, 4.9-174; March 22, 2010 Tr., p. 502.) Staff admitted that the hazardous waste assessment would change if "it's something that has potential for moving off-site…" (March 22, 2010 Tr., p. 504.)

Second, it is impossible to determine whether the "isolation valve" measure in Waste-7 will mitigate significant impacts, because the maximum potential leak at a valve is unknown. Leaks most often occur "at a mechanical connection such as valves and flanges or the solar collector loops." (Exh. 632, p. 2.) Each collector loop contains approximately 630 gallons of HTF that can be isolated using loop isolation valves. (Exh. 632, p. 2.) However, "a much larger maximum quantity of HTF between isolation valves is contained in the main headers and in the east-west laterals that supply each section." (Id.) Specifically, "as much as 115,000 gallons" of HTF is contained between isolation valves in the main header and east/west laterals that supply each section. (Id.)

When asked about the maximum potential spill on the main header between the "isolation valves" that are required by Waste-7, the Applicant responded: "***I cannot answer that***." (March 22, 2010 Tr., p. 478.) Thus, the record provides no evidence that installing additional isolation valves mitigates significant impacts from HTF spills.

2. Waste Management Conditions Fail to Mitigate Significant Impacts and Violate LORS

The handling of HTF contaminated soil in the FSA and Condition of Certification Waste-7 fail to mitigate significant impacts from HTF spills and violate LORS. Like the Hazardous Waste conditions, the measures reveal how little Staff understood about HTF use in the Project and potential impacts from HTF spills.

Section 25203 of the Health and Safety Code prohibits any person from disposing of a hazardous waste except at a hazardous waste facility. "Disposal" means either of the following:

> (1) The discharge, deposit, injection, dumping, spilling, leaking, or placing of any waste so that the waste or any constituent of the waste is or may be emitted into the air or discharged into or on any land or waters, including groundwaters, or may otherwise enter the environment.
> (2) The abandonment of any waste.

(Health and Safety Code §25113(a).) If a leak occurs, section 25123.3 of the California Health and Safety Code sets forth the requirements for temporarily staging waste. Temporary waste staging is appropriate for hazardous waste only if:

- The waste is non-RCRA contaminated soil.
- The hazardous waste being accumulated does not contain free liquids
- The hazardous waste is accumulated on an impermeable surface, such as high density polyethylene (HDPE) of at least 20 mills that is supported by a foundation, or high density polyethylene of at least 60 mills that is not supported by a foundation, among other requirements.

- Controls are provided for windblown dispersion and precipitation runoff and run-on and any stormwater permit requirements issued by a regional water quality control board.
- The accumulation site must be inspected weekly and after storms to ensure that the controls for windblown dispersion and precipitation runoff and run-on are functioning properly.
- After final offsite transportation, the accumulation site is inspected for contamination and remediated as necessary.
- The site is certified by a registered engineer for compliance with these standards.

(Health and Safety Code § 25123.3(a)(2), (b).) If any of the requirements are not met, then the Project must be regulated as a hazardous waste storage facility under Health and Safety Code Section 25200 et seq.

The staging area of the Project's LTU does ***not*** meet the requirements for a temporary staging area under Section 25123.3(a)(2) of the Health and Safety Code. Specifically, the hazardous waste being accumulated 1) contains free liquids, and 2) is not "accumulated on an impermeable surface, such as high density polyethylene (HDPE) of at least 20 mills that is supported by a foundation, or high density polyethylene of at least 60 mills that is not supported by a foundation."

According to the FSA:

> Spills of HTF at BSEP would be cleaned up within 48 hours, and the contaminated soil would be placed in the staging area of the LTU and covered with plastic sheeting….HTF contaminated soil would remain in the LTU

> staging area until the impacted soils are properly characterized using modified USEPA Method 8015.

(Exh. 500, p. 4.13-10.) Condition of Certification Waste-7 states:[29]

> The project owner shall submit to the CPM and DTSC for approval the applicant's assessment of whether the HTF contaminated soil is considered hazardous or non-hazardous under state regulations. HTF-contaminated soil that exceeds the hazardous waste levels must be disposed of in accordance with California Health and Safety Code (HSC) Section 25203. HTF contaminated soil that does not exceed the hazardous waste levels may be discharged into the land treatment unit (LTU). For discharges into the LTU, the project owner shall comply with the Waste Discharge Requirements contained within Appendix E, F, and H, in the Soil & Water Resources section of the Final Staff Assessment.

(Exh. 500, p. 4.13-17.)

Waste-7 contains inconsistent directives and permits the Applicant to stage large volumes of contaminated soil in violation of Section 25123.3 of the California Health and Safety Code. According to Waste-7, for discharges into the LTU, the project owner shall comply with the Waste Discharge Requirements contained within Appendix E, F, and H in the Soil & Water Resources section of the FSA. (Id.) Appendix H states that "[t]he June 2009 ROWD [Report of Waste Discharge] outlines the procedure for removing contaminated soils from the facility and temporarily staging the soils within the Land Treatment Unit for hazardous waste testing." (Exh. 500, p. 4.9-210.) The ROWD states:

> Spills of HTF will be cleaned up within 48 hours and affected soil will be moved to a staging area in the LTU where it will be covered with plastic sheeting pending receipt of analytical results and characterization of the waste material.
> If the soil is characterized as a hazardous waste (refer to Section 4.3.3), the impacted soils will be transported from the site by a licensed hazardous waste hauler for disposal at a licensed hazardous waste landfill.

[29] FSA, p. 4.13-17

(Exh. 203, p. 8.) Section 4.3.3 of the ROWD states:

> The HTF-impacted soils must be characterized as hazardous or non hazardous waste prior to determination of whether the material can be treated at the site or must be removed for offsite disposal. Therefore HTF-impacted soils will be relocated to the staging area (refer Section 4.2) and characterized in accordance with California and Federal law.

(Id., p. 10.) Again, Section 2.2 of the ROWD states that the staging area is located in the LTU. (Id., p. 8.)

The ROWD's procedure of removing contaminated soils and temporarily staging the soils in the LTU, which is incorporated in Appendix H and Waste-7, violates LORS. Spills of HTF will generate free liquids at temperatures above approximately 54 degrees Fahrenheit. (Exh. 500, p. 4.4-8.; Exh. 612, p. 7.) The FSA states that "Therminol can therefore be expected to remain liquid if a spill occurs." (Exh. 500, p. 4.4-8.) "Cleanup of the spills will therefore involve the collection of free liquids." (Exh. 612, p. 7; Exh. 615 (documentation of cleanup of liquid spills).) Since the hazardous waste being accumulated contains free liquid, the LTU does not comply with the requirements for temporary waste staging. (Health and Safety Code § 25123.3(a)(2).)

Additionally, "[t]he LTU will not incorporate a liner containment system or LCRS, but will be constructed with a prepared base consisting of 2 feet of compacted, low permeability, lime-treated material." (Exh. 500, p. 4.9-173.) A low permeability surface is not the same as an impermeable surface. (March 22, 2010 Tr., p. 438.) Since the hazardous waste is not being accumulated on an

impermeable surface, the LTU does not comply with the requirements for temporary waste staging. (Health and Safety Code § 25123.3(a)(2).)

As conditioned, the FSA allows HTF contaminated soils to be placed in the LTU without testing and later found to exceed hazardous waste levels, thereby resulting in improper staging of hazardous waste. This violates California hazardous waste regulations.

3. Feasible Measures Exist to Reduce Some Impacts to Less Than Significant and Eliminate Violation of LORS

Additional feasible mitigation for adequate cleanup of HTF spills includes testing spilled HTF at the point of origin of the spill. (Exh. 612, p. 5.) Protocol typically used to address spills of potentially hazardous wastes includes:

- Testing methodology for the collection of soil samples, including number, depth interval, methods for identifying the locations for soil sampling (i.e., through use of visual or olfactory senses or instrumentation);
- The identification of chemicals of concern for laboratory analysis;
- Identification of cleanup goals;
- Excavation procedures for removing contaminated soil;
- Confirmation sampling to ensure removal of contaminated soil; and
- Identification of long-term monitoring that may be necessary to include groundwater monitoring.

(Exh. 612, p. 5.) "Typically, provisions for responding to hazardous waste spills are outlined in corrective action plans that include waste discharge requirements or numeric cleanup standards" to ensure the adequacy of cleanup in protecting human

health and the environment. (Id.) While the ROWD includes a corrective action plan for groundwater monitoring of the evaporations ponds and the LTU, "the ROWD does not include a corrective action plan for contaminated soils at the point of spill origin." (Id.) Requiring a corrective action plan for cleanup of HTF spills at the point of origin is a feasible measure to ensure compliance with LORS.

The conditions should also address plans and incorporate mitigation measures for the handling and filtration of spilled "wax-like solid" HTF. (Exh. 625, p. 9.) The Applicant should be required to provide supplemental information explaining the Project's proposal for handling of spilled free-standing HTF and for ensuring less than significant impacts to the public health and the environment and compliance with LORS. (Exh. 625, p. 9.) Staff should conduct an independent analysis of impacts to air quality, public health, biological resources, hazardous waste, waste management, and worker safety, among others, and require mitigation. The Commission should also consider the need for county, state or federal permits to ensure the filtration is in compliance with LORS.

Finally, because there is such a high likelihood of HTF spills, the Commission should require double walled piping, or secondary containment of the spills along the pipeline. (Exh. 625, p. 9.) The conditions should also set forth explicit procedures for emergency notification following HTF spills, including the immediate notification of the National Response Center. (Id.)

VII. TRANSMISSION SYSTEM ENGINEERING

The Warren-Alquist Act sets forth the policy of the state and the intent of the legislature "that it is the responsibility of state government to ensure that a reliable supply of electrical energy is maintained at a level consistent with the need for such energy for protection of public health and safety, for promotion of the general welfare, and for environmental quality protection." (Pub. Res. Code § 25001.)

It is with this policy in mind that CURE recommends a condition of certification that the Project owner be required to submit a copy of a signed large generator interconnection agreement prior to the start of power plant construction. CURE also recommends that the interconnection agreement must allow for delivery of the full 250 Mw of Project generation at all times when the Owens Gorge – Rinaldi line and Barren Ridge switching stations are in service (i.e., under N-0 conditions).[30] Finally, CURE recommends that the interconnection agreement must not be based on a public utility sacrificing some of its own generating capacity to make room for the Project's power generation.

A. The FSA Fails to Ensure That the Project Will Reliably Deliver 250 MW

Staff states that the interconnection will be to Los Angeles Department of Water and Power's (LADWP) Barren Ridge substation, but the Project will not be dependent upon LADWP's proposed Barren Ridge Renewable Transmission Project (BRRTP). (Exh. 500, pp. 3-5, 3-6.) According to LADWP, the Barren Ridge

[30] N-0 refers to the condition where all facilities are in service or capable of being in service. By contrast, if any one facility not specified in advance is assumed out of service, that would be N-1. (March 22, 2010 Tr., p. 194.)

substation is located along the Owens Gorge-Rinaldi line. (Exh. 616, p. 1; Exh. 619.) However, the record shows that there may not be sufficient transmission space available on that line.

David Marcus testified that the Owens Gorge-Rinaldi line has a transfer capability of only 400 Mw, 160 Mw of which is already being used by existing projects. (Exh. 616, p. 1; Exh. 619.) "Thus, according to LADWP there is only 240 Mw of available transmission space on the Owens Gorge-Rinaldi line." (Id.) "In addition, LADWP reports that there are some 1200 Mw of renewable energy projects seeking to interconnect to the LADWP system in the Barren Ridge area, which is the reason the BRRTP [Barren Ridge Renewable Transmission Project] is being proposed." (Id.; Exh. 619.) According to Marcus, "[u]nless the Beacon project is ahead of every single one of these projects (including LADWP's own 120 Mw Pine Tree wind project and 150 Mw Hoffman Summit wind project proposed by NRG Energy), there will be even less transmission space available to it." (Exh. 616, p.1; Exh. 620; Exh. 621.) Since the BRRTP is not planned to enter operation until 2013 (Exh. 619), but Beacon is planned for operation in 2011 (Exh. 622), it is feasible to require that an interconnection agreement not be permitted unless the existing LADWP Barren Ridge-Rinaldi line can handle its output. (Exh. 616, p. 2.)

The Applicant provided a July 31, 2008 System Impact Study ("SIS") in which LADWP concluded that "the 250 Mw output of Beacon could be accommodated on the existing transmission facilities, subject to curtailment for outages of the Barren Ridge-Rinaldi line" (Exh. 76) and "assuming a direct

connection from the project to the Barren Ridge switching station." (Exh. 616, p. 2.) However, "the data in the SIS is inconsistent with what LADWP has reported elsewhere, with regard to both line capacity and pre-Beacon line usage." (Exh. 616, p. 2.) Specifically, the SIS says that line capacity on the Barren Ridge-Rinaldi segment is 571 Mw, while LADWP elsewhere says it is 400 Mw. (Exh. 616, p. 2; Exh. 76, p. 8; Exh. 619.) The SIS also says that "maximum generation from wind projects connected to Barren Ridge ahead of Beacon will be 295 Mw, and maximum generation from LADWP's Owens Gorge hydro plants will be 112.5 Mw" (Exh. 616, p. 2; Exh. 76, p. 8), "which is far above the 160 Mw of Owens Gorge-Rinaldi line usage LADWP reports elsewhere." (Exh. 616, p. 2; Exh. 619.)

A clarifying e-mail from LADWP to Staff shows that the correct number for the line rating is 459 Mw, with a possible future upgrade to 530 Mw (Exh. 638), not the 571 Mw claimed by Applicant in its rebuttal testimony (Ex. 334), and not the 571 Mw used in the SIS (Exh. 616, p. 2; Exh. 76, p. 8). Thus the Commission cannot rely upon the SIS to conclude that Beacon will not cause overloads of the Barren Ridge-Rinaldi line. A feasible measure to ensure that the Project does not cause overloads of the line would be to amend TSE-5 to require that an interconnection agreement be signed before power plant construction. (Exh. 616, p. 3.)

In the absence of LADWP's BRRTP, the SIS left the door open for curtailment of LADWP's own hydro generation to make room for generation from the Project. The SIS shows that Beacon will constrain LADWP's operational flexibility by limiting Owens Gorge hydro generation "to no more than 45 Mw at the peak load

time of 4 pm, when Beacon generation is at 250 Mw and wind generation is at 190 Mw."[31] (Exh. 616, p. 2 (internal citations omitted); Exh. 76, pp. 6, 8.) According to the SIS, the Project's 250 Mw will, in the absence of the BRRTP, deprive LADWP of access to some 67.5 Mw of existing hydro capacity at the time of the daily peak. (Exh. 616, pp. 2-3.) Thus, the Commission cannot rely upon the SIS to conclude that Beacon will not cause overloads of the Barren Ridge-Rinaldi line.

The SIS's conclusion that the Project can be interconnected at Barren Ridge in the absence of the BRRTP is not only based on an incorrect Barren Ridge-Rinaldi line rating, but also assumes that generation is curtailed elsewhere. LADWP agrees that the current interconnection study contemplates a condition under which Beacon generation would be subject to curtailment during the period prior to BRRTP operation. (Exh. 638.) Consequently, CURE recommended that condition TSE-5 be amended to require that the interconnection agreement make clear that the *Project's* generation will be subject to curtailment as needed prior to BRRTP operation if required to avoid Barren Ridge-Rinaldi overloads. (Exh. 616, p. 3.)

Finally, CURE recommended that TSE-5 be amended to require that Project construction be conditional on an interconnection agreement that allows for the full output of Beacon to be delivered to the Project under N-0 conditions. (Exh. 616, p. 3; March 22, 2010 Tr., p. 193.)

> It's understood and it's often been the case that under contingencies there may be project curtailments. But you shouldn't have a project being connected to the system that under normal conditions could ever, say at peak load, not be able to deliver its full output.

[31] Alternatively, if Owens Gorge hydro generation is not constrained, then wind generation will have to be capped some 65 Mw below its maximum capability. (Exh. 616, p. 3; Exh. 76, p. 8.)

(March 22, 2010 Tr., p. 193.) Therefore, TSE-5 should require that the Project's interconnection agreement allow all 250 Mw of the Project's generation to be delivered when all transmission lines are in service (i.e., under N-0 conditions).

In sum, the FSA, in condition TSE-5, requires the Project owner to provide a copy of its signed interconnection agreement with LADWP (Exh. 500, p. 5.5-11), but the condition does not require the interconnection agreement to be signed and submitted prior to construction. Given the uncertainty regarding the deliverability of the full 250 MW output, feasible mitigation includes revising condition TSE-5 to clarify the following:

● a signed interconnection agreement is a necessary precondition to the start of power plant construction,

● the interconnection agreement must allow for delivery of the full 250 Mw of Beacon generation at all times when the Owens Gorge – Rinaldi line and Barren Ridge switching stations are in service (i.e., under N-0 conditions), and

● the interconnection agreement must not be based on LADWP sacrificing some of its own generating capacity to make room for Beacon generation.

(Exh. 616, p. 3.)

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Respectfully submitted

_____/s/_____

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STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

In the Matter of: The Application for Certification for the BEACON SOLAR ENERGY PROJECT	Docket No. 08-AFC-2

PROOF OF SERVICE

I, Bonnie Heeley, declare that on April 19, 2010 I served and filed copies of the attached **OPENING BRIEF OF CALIFORNIA UNIONS FOR RELIABLE ENERGY.** 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/beacon. 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 via email and by U.S. Mail with first-class postage thereon, fully prepaid and addressed as provided on the Proof of Service list to those addresses NOT marked "email preferred." An original paper copy and one electronic copy, mailed and emailed respectively, was sent to the Docket Office.

I declare under penalty of perjury that the foregoing is true and correct. Executed at South San Francisco, CA on April 19, 2010.

_____/s/_____
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