SES Solar One

In Response to Defenders of Wildlife Data Requests, Set 1: Data Requests 1-11

In Response to Basin and Range Watch Data Requests, Set 1: Data Requests 1-3

Application for Certification (08-AFC-13)

December 2009

DOCKET
08-AFC-13
DATE DEC 04 2009
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Submitted to:
Bureau of Land Management
2601 Barstow Road
Barstow, CA 92311

Submitted to:
California Energy Commission
1516 9th Street, MS 15
Sacramento, CA 95814-5504

Submitted by:
SES Solar Three, LLC
SES Solar Six, LLC

Stirling Energy Systems
4800 N. Scottsdale Road, Suite 5500
Scottsdale, AZ 85251

Tessera Solar™
power from stirling energy systems

December 4, 2009

Mr. Christopher Meyer
CEC Project Manager
Attn: Docket No. 08-AFC-13
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Mr. Jim Stobaugh
BLM Project Manager
Attn: Docket No. 08-AFC-13
Bureau of Land Management
P.O. Box 12000
Reno, NV 89520

RE: SES Solar One Project
Applicant's Responses to Defenders of Wildlife Data Requests Set 1 (Data Requests 1-11)
Applicant's Responses to Basin and Range Watch Data Requests Set 1 (Data Requests 1-3)

Dear Mr. Meyer and Mr. Stobaugh:

Tessera Solar hereby submits the Applicant's responses to Defenders of Wildlife Data Requests Set 1 (Data Requests 1-11) and Basin and Range Watch Data Requests Set 1 (Data Requests 1-3).

20 CCR 1716 (e) specifies that "all requests shall be submitted no later than 180 days from the date the Commission determines an application is complete,. . ." The Commission determined this application to be complete on May 6, 2009, well over 180 days ago. Despite the fact that these requests have been filed out of time, the Applicant voluntarily agrees to respond to these data requests. However, the Applicant will not perform the geologic study which would respond to Basin and Range Watch Data Request 3, as this information is not readily available and would require a detailed study. (20 CCR 1716 (b)).

The Applicant has now agreed to respond to three separate data requests made by Basin Range Watch, Defenders of Wildlife, and CURE, all made after the 180 day limit. Henceforth, the Applicant will not respond to further requests for information without a persuasive showing of need for the information on the part of the requesting party, or an order from the Assigned Committee of Commissioners.

I certify under penalty of perjury that the foregoing is true, correct, and complete to the best of my knowledge.

Sincerely,

Camille Champion
Project Manager

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 1: Please identify all past, present and future foreseeable projects that may have cumulatively significant effects on desert tortoise and bighorn sheep migration corridors.

Response: The need for connectivity between conserved habitats for specific species is dependent on the sustainability of the conserved populations. For example, the 1994 tortoise recovery plan determined that conserved tortoise populations within a 500 – 1000 square-mile area would be sustainable from both demographic and genetic concerns. By establishing eight tortoise conservation areas exceeding this size, the need for connectivity between these conserved populations is reduced. Occasional translocations between these areas would be a benefit, but not a necessity. The potential connectivity routes between tortoise conservation areas in the vicinity of the Solar One Project occur west of the Project area.

Big Horn Sheep (BHS) are distributed among the geographically distinct higher elevation areas located throughout the desert and herds function as semi-independent subpopulations within a larger metapopulation. Adjacent herds occasionally exchange individuals. Herds are isolated by distance from more distant herds. The Cady Mountains herd is connected to herds located east and north of Interstate 40. Exchange with herds south of Interstate 40 appears to be limited (Epps et al. 2007). The cumulative effect on BHS movement would be an issue if future projects were approved within the BHS movement corridor between the Cady Mountains herd and herds east and north of Interstate 40. BLM has designated nearly continuous areas as wilderness areas (Cady Mountains, Kelso Dunes, and Bristol Mountains) that would allow for BHS exchange between herds.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 2: Please identify the methodology for assessing cumulative effects on desert tortoise and bighorn sheep migration corridors.

Response: Epps et al. 2007 indicate that BHS movement occurs east of the Cady Mountains and north of Interstate 40 (please see the figure provided within this response). Projects proposed in this movement area could potentially impact BHS movement. The winter range of the Cady Mountains herd includes the Pisgah ACEC. Any potential BHS movements south of Interstate 40 would be associated with this BHS use area. Establishment of new herds through translocation between existing herds would enhance metapopulation function through inter-herd exchange of individuals. The Solar One Project is located west of potential BHS movement areas and would not impact BHS movement routes.

No desert tortoise movement corridors have been identified by the wildlife agencies. Potential connectivity areas via tortoise suitable habitat between designated tortoise conservation areas occur west of the Solar One Project site (please see attachment BIO-1, located behind this response).

References Cited:

Epps et al. 2007. *Journal of Applied Ecology* **44**:714–724

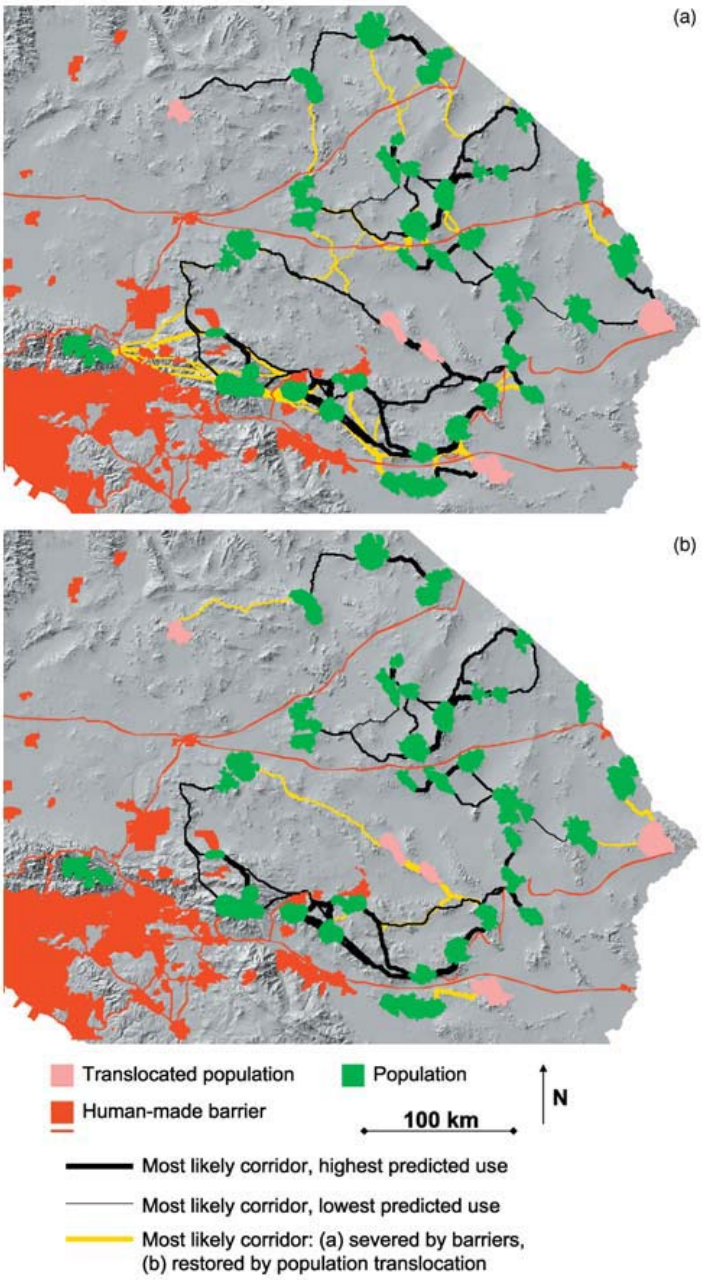

Fig. 4. Dispersal corridors predicted by the best-fitting dispersal model (15/0·10) and the HM population model, depicted with hill-shade topography. Black lines indicate least-costly corridor routes for corridors with cost < EGD_{MAX}, yellow lines indicate least-costly corridor routes that (a) were severed by anthropogenic barriers; or (b) were re-established by translocated populations. Corridors are presented based on (a) all extant populations within the study area, with and without current anthropogenic barriers considered; and (b) extant populations with and without those successfully re-established by translocation, with current anthropogenic barriers considered.

From Epps et al. 2007 *Journal of Applied Ecology* **44**:714–724

LEGEND

- 1-Mile Buffer
- Project Boundary
- N.A.P. (Not A Part)
- 10-Mile Buffer
- Desert Tortoise Critical Habitat
- Desert Tortoise Movement Corridors

Desert Tortoise Observations

- Active Tortoise Burrow
- Inactive Tortoise Burrow
- Live Desert Tortoise
- Tortoise Carcass
- Tortoise Drinking Pan
- Tortoise Pallet
- Tortoise Scat

Modeled Potential Desert Tortoise Habitat Suitability

- 0 - 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.4
- 0.4 - 0.5
- 0.5 - 0.6
- 0.6 - 0.7
- 0.7 - 0.8
- 0.8 - 0.9
- 0.9 - 1
- BNSF Railroad

SOURCES:
Huitt-Zollars, Inc (site plan Aug. 2009);
USFWS (desert tortoise critical habitat 1994);
CNDDB (sensitive species Sept. 2008);
ESRI (overview); TIGER (railroad 2000);
USDA (NAIP aerial 2005).

MODELED POTENTIAL DESERT TORTOISE HABITAT AND DESSERT TORTOISE MOVEMENT CORRIDORS IN THE VICINITY OF SOLAR ONE PROJECT

URS

1.5 0 1.5 3 Miles

SCALE: 1" = 3 Miles (1:190,080)
SCALE CORRECT WHEN PRINTED AT 11X17

CREATED BY: LG	DATE: 09-03-09	FIG. NO:
PM: WM	PROJ. NO: 27658189.20001	13

Path: G:\gis\projects\27\27658\100\mxd\BioExhibit\bio_SI_DT_movement_routes.mxd, 10/19/09, jason_sokol

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 3: Based on data in the UCSB Study indicating that development of the Pisgah CREZ results in connectivity being shifted large distances (on the order of >50 km), please provide an assessment of impacts to desert tortoise and bighorn sheep movement corridors from the Project.

Response: Large segments of the Pisgah CREZ are proposed as only Transmission Line or wind energy projects. These linear segments are tens of kilometers long that would allow for wildlife movement past any solar project sited in the vicinity. Large areas are designated as BLM conserved lands (ACECs, DWMA, wilderness areas) and military lands that are managed in a way that would allow for continued wildlife movement. Wildlife connectivity would not be shifted large distances due to solar energy projects so long as future siting takes this issue into account.

Technical concerns about the UCSB assessment are provided below:

- Transmission Lines and Wind Energy projects do not affect wildlife movement. Large segments of solely transmission line development, or proposed wind energy projects will allow for wildlife movement past solar energy projects.

- Siting of solar projects outside of designated conservation areas (ACECs, DWMAs, wilderness areas, and designated Critical Habitat) will allow for regional wildlife movement between conserved habitat areas.

- Tortoise Recovery Plan and West Mojave Plan did not identify the need to connect conserved tortoise habitat areas due to their large size and they support self-sustaining populations.

- Extensive areas of additional tortoise habitat occur on State, military, and National Park Service Lands that are managed with tortoise as a key species of concern. These additional tortoise areas are not considered in the UCSB assessment.

- Cady Mountains BHS herd is connected to herds located east and north of Interstate 40. No existing connection to BHS herds south of Interstate 40 has been identified.

- Climate change effects on BHS habitat will be minimal due to this species' preference for high elevation habitats. BHS metapopulation configuration limits exchange to between nearest neighbor herds (isolation by distance).

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 4: Please identify the incremental contribution of the Project to cumulative impacts, including a total build-out scenario of the Pisgah CREZ.

Response: The Solar One Project would contribute about 8,230 acres of habitat loss, but this impact is being mitigated offsite per the West Mojave Plan and CDFG 2081 requirements. Existing conserved lands east and north of the site provide for continued wildlife movement through the Project vicinity.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 5: Please identify the mitigation measures that will be implemented for cumulatively significant impacts of the Project on biological resources in a total build-out scenario of the Pisgah CREZ.

Response: The Project site is located in an appropriate area and is consistent with the West Mojave Plan and the Desert Tortoise Recovery Plan. BLM has accounted for cumulative impacts in their West Mojave Plan, and this Project tiers off of that Plan. The Project's contribution to cumulative impacts is incremental and roughly proportional to the Project size. The Project location avoids key areas of biological concern (ACECs, DWMAs, wilderness study areas, and designated critical habitat). Consistent with the West Mojave Plan, additional lands offsite will be conserved to benefit sensitive biological resources.

TECHNICAL AREA: ALTERNATIVES

Data Request 6: Please identify the methodology used in locating alternative sites.

Response: The methodology used in locating suitable alternative sites for this Project was consistent with the evaluation criteria established in the AFC. The Applicant developed the criteria listed below to evaluate the suitability of sites for solar power development. These screening criteria were used to evaluate the potential alternative sites and select the site for the Project.

Solarity: The site needed to be located in an area with long hours of sunlight (low cloudiness). Ideally, insolation, the rate of delivery of direct solar radiation per unit of horizontal surface**,** levels would be at least seven kilowatt-hours per square meter per day. Solar intensity was the most important screening criteria from a perspective of selecting general regions in California for development of the Project.

Topography: The site needed to be relatively flat; site grade may be up to five percent. Topography, combined with wind speed, represents the second most critical site selection criteria for a Project of this nature.

Wind Speed: The wind speed needed to be less than 35 miles per hour 98 percent of the time.

Land Area: There should be sufficient land area to accommodate a minimum number of acres of solar generation.

Site Control: The land needed to be available for sale or use (e.g., lease or use of an ROW). If private land, the landowner must be willing to negotiate a long-term option agreement so that site control does not require a large capital investment until the license is obtained.

Proximity to Infrastructure: The site needed to be located in close proximity to high-voltage CAISO transmission lines with adequate capacity. Ideally, the site should be located within 10 miles of existing transmission lines and should have an adequate water supply.

Accessibility: The site should have ease of access; close proximity to access roads and railroads is preferred.

Environmental Sensitivity: The site had to be located outside of environmentally excluded areas (such as State and National Parks, areas of critical environmental concern) should have few or no environmentally sensitive resources (particularly biological and cultural resources) and should allow development with minimal environmental impacts.

Jurisdictional Issues: The proposed use should be consistent with existing laws, ordinances, regulations, and standards (LORS).

Land Cost: The site should be located on property currently available at a reasonable cost.

TECHNICAL AREA: ALTERNATIVES

Data Request 7: Please identify the methodology used to assess the environmental impacts of alternative sites.

Response: The Applicant conducted desk-top studies of alternative sites. Data was gathered on the existing conditions of many resource areas, including, but not limited to; biological, cultural, and land use. Results of these studies have been provided in the AFC, Applicant's responses to CEC and BLM Data Requests (most recently as the response to CEC and BLM Data Request 132). Data included CNDDB queries; cultural resources record searches, identification of sensitive land use areas. Additional analysis of each alternative identified will be provided by the Applicant during December, 2009.

TECHNICAL AREA: ALTERNATIVES

Data Request 8: Please identify the methodology used to consider the economic, environmental, social and technological factors involved for each alternative site.

Response: Economic, environmental, social and technological factors were identified that rendered some alternative sites infeasible. These factors were not evaluated for each of the sites, but rather for why each eliminated alternative site was inferior to the selected site. Alternative sites were presented and analyzed for feasibility in comparison with the selected site. Additional analysis of each alternative identified will be provided by the Applicant during December, 2009.

TECHNICAL AREA: ALTERNATIVES

Data Request 9: Please assess the feasibility of reconfiguring the proposed Project site to allow for a wildlife movement corridor along the Cady Mountains.

Response: The Applicant, through discussions with agencies and the public, is considering an option to locate both the Project and exclusion fences below the proposed debris basins. This would open up an approximate 400-foot area which may be utilized for wildlife movement. The debris basins would be designed to allow for this movement.

Additionally, the purchase of private land parcels adjacent to the Project site, may allow a land exchange and further movement of the Project away from the Cady Mountains.

TECHNICAL AREA: ALTERNATIVES

Data Request 10: Please assess the feasibility of acquiring degraded lands in the Daggett-Yermo-Newberry Springs area to substitute for land used as a wildlife movement corridor along the Cady Mountains.

Response: The Applicant does not have information regarding land owners' desire to sell property to the Applicant, and/or prices for the purchase of adequate amounts of land for the purposes of the Project. Lands purchased for the purpose of the Project would need to be contiguous to maximize energy output and minimize environmental impacts and maximize both construction and operation efficiency.

TECHNICAL AREA: ALTERNATIVES

Data Request 11: Please assess the feasibility of deploying SunCatcher units in small modules on degraded lands in the Daggett-Yermo-Newberry Springs area to substitute for land used as a wildlife movement corridor along the Cady Mountains.

Response: Providing electricity at dispersed locations in the Daggett-Yermo-Newberry Springs area would be infeasible because it could increase the amount of land and resources needed to produce the same amount of power as the Proposed Project (located on one central site). Providing electricity at dispersed locations in the Daggett-Yermo-Newberry Springs area would require the following conditions, at minimum: 1) Each individual site would need to be located in close proximity to high-voltage California Independent System Operator (CAISO) transmission line with adequate capacity; 2) Each site would have to be located within 10 miles of existing transmission lines and would need an adequate water supply; 3) Providing access to each site could cause numerous environmental impacts. Consolidating all SunCatchers in one central location would allow necessary ancillary components to be co-located and most efficiently constructed to minimize the amount of environmental impacts per MW of power produced.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 1: Please indicate how corridors for movement of Mojave fringe-toed lizards, whether on sand or not, would be maintained to move from one suitable habitat to another to maintain genetic diversity.

Response: The 16.9-acre patch of MFTL habitat onsite is already isolated from other MFTL habitat patches by the railroad and highway. Emigrating individuals would move through the project site and through the drainage underpasses of the railroad to access suitable habitat located in the ACEC east of the project site. Patches of desert scrub habitat (75 feet wide) will remain onsite at regular intervals (every 150 feet) for these individuals to seek shelter from potential predators during their movements.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 2:

In response to CURE data request 84, SES Solar One states that "it is possible that the proposed facility may indirectly affect the quality of Mojave fringe-toed lizard habitat by impeding, slowing or redirecting the transport of sand to the existing Mojave fringe-toed lizard habitat. This potential impact can be monitored over time to determine whether such an impact actually occurs."

Please provide an alternative mitigation plan to simply monitoring over time. Why did SES Solar One fail to come up with an alternative mitigation plan that would site the project in a way that would allow sand flow to continue to maintain habitat for this sensitive species?

Response: The entire project site's vegetation (8,230 acres) is being mitigated offsite in addition to the onsite conservation of MFTL habitat. The potential for impact is speculative, hence the need to monitor the single habitat patch for such an impact. The sand is derived from alluvial transport from the Cady Mountains and is locally distributed by wind. The SunCatchers are not likely to substantially influence local wind transport of sand. Given the limited amount of MFTL habitat onsite, the current regulatory status of this species (a species of concern), and BLM's conservation of MFTL habitat in the adjacent ACEC, the offsite mitigation program and onsite retention of MFTL habitat is sufficient to mitigate impacts to this species.

TECHNICAL AREA: BIOLOGICAL RESOURCES

Data Request 3: In response to data request 85, CURE asked SES Solar One to identify the source of sand that has generated Mojave fringe-toed lizard *(Uma scoparia)* habitat within the project site and the Pisgah Area of Critical Environmental Concern. SES Solar One claims the sand is from "adjacent upstream watershed lands". This conflicts with references that indicate the sand comes from the Mojave River.

Please provide a map that illustrates the geologic process that supplies the Aeolian deposits that sustain Mojave fringe-toed lizard populations on the project site and in the Pisgah Crater Area of Critical Environmental Concern.

Response: The requested information is not readily available. The sand is derived from alluvial transport from the Cady Mountains and is locally distributed by wind. The sand sources for the ACEC are also from the Cady Mountains and are not necessarily dependent on sands coming from the project site, although some contribution from the project site could be expected if the prevailing wind is westerly.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION
For the SES SOLAR ONE PROJECT

Docket No. 08-AFC-13

PROOF OF SERVICE
(Revised 12/2/09)

APPLICANT
Felicia Bellows,
Vice President of Development
Tessera Solar
4800 North Scottsdale Road,
Ste. 5500
Scottsdale, AZ 85251
felicia.bellows@tesserasolar.com

Camille Champion
Project Manager
Tessera Solar
4800 North Scottsdale Road,
Suite 5500
Scottsdale, AZ 85251
camille.champion@tesserasolar.com

CONSULTANT
***Angela Leiba**
AFC Project Manager
URS Corporation
1615 Murray Canyon Rd.,
Ste. 1000
San Diego, CA 92108
Angela_Leiba@URSCorp.com

APPLICANT'S COUNSEL
Allan J. Thompson
Attorney at Law
21 C Orinda Way #314
Orinda, CA 94563
allanori@comcast.net

INTERESTED AGENCIES
California ISO
e-recipient@caiso.com

Jim Stobaugh
BLM – Nevada State Office
P.O. Box 12000
Reno, NV 89520
jim_stobaugh@blm.gov

Rich Rotte, Project Manager
Bureau of Land Management
Barstow Field Office
2601 Barstow Road
Barstow, CA 92311
Richard_Rotte@blm.gov

Becky Jones
California Department of
Fish & Game
36431 41st Street East
Palmdale, CA 93552
dfgpalm@adelphia.net

INTERVENORS
California Unions for Reliable
Energy (CURE)
Loulena A. Miles,
Marc D. Joseph
Adams Broadwell Joseph &
Cardozo
601 Gateway Boulevard,
Ste. 1000
South San Francisco, CA 94080
lmiles@adamsbroadwell.com

Defenders of Wildlife
Joshua Basofin
1303 J Street, Suite 270
Sacramento, California 95814
e-mail service preferred
jbasofin@defenders.org

Basin and Range Watch
Laura Cunningham
Kevin Emmerich
P.O. Box 70
Beatty, NV 89003
atomictoadranch@netzero.net

Patrick C. Jackson
600 N. Darwood Avenue
San Dimas, CA 91773
e-mail service preferred
ochsjack@earthlink.net

ENERGY COMMISSION
JAMES D. BOYD
Vice Chair and Presiding Member
jboyd@energy.state.ca.us

JEFFREY D. BYRON
Commissioner and Associate Member
jbyron@energy.state.ca.us

Paul Kramer
Hearing Officer
pkramer@energy.state.ca.us

Caryn Holmes, Staff Counsel
1516 9th Street, MS-14
Sacramento, California 95814
cholmes@energy.state.ca.us

Christopher Meyer
Project Manager
cmeyer@energy.state.ca.us

Public Adviser
publicadviser@energy.state.ca.us

*indicates change

DECLARATION OF SERVICE

I Corinne Lytle , declare that on December 4 , 2009, I served and filed copies of the attached Applicant's Responses to Defenders of Wildlife Data Requests, Set 1 and Basin and Range Watch Data Requests, Set 1. 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/solarone]**.

The documents have 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, in the following manner:

(***Check all that Apply***)

FOR SERVICE TO ALL OTHER PARTIES:

_____ sent electronically to all email addresses on the Proof of Service list;

_____ by personal delivery or by depositing in the United States mail at _____ with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

_____ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

OR

_____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-13
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.

original signed by

Corinne Lytle

*indicates change