



BrightSource

DOCKET
11-AFC-4

DATE APR 27 2012

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April 27, 2012

Pierre Martinez
Project Manager
Systems Assessment & Facility Siting Division
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

Subject: Supplementary Response to Center for Biological Diversity Data Request No. 3 dated March 15, 2012, Rio Mesa Solar Electric Generating Facility (11-AFC-04)

Dear Mr. Martinez:

On behalf of Rio Mesa Solar I, LLC, Rio Mesa Solar II, LLC, and Rio Mesa Solar III, LLC, please find enclosed a copy of our Supplementary and corrected Response to Center for Biological Diversity Data Request No. 3 dated March 15, 2012 in response to Staff's Data Requests filed on February 7, 2012. The correction is that the Solar Receiver Steam Generator (SRSG) is a 32 sided polygon rather than an octagon. Electronic copies will be sent to the Staff and the Proof of Service List.

Sincerely,

Todd Stewart
Director, Project Development

Enclosure

Cc: POS List
Project File

SUPPLEMENTARY AND CORRECTED RESPONSE:

Center for Biological Diversity Data Request No. 3 dated March 15, 2012

Data Request

3. All original data, modeling and modeling assumptions relied on for statements regarding the SEDC project and Rio Mesa proposed project in the powerpoint presentation titled “RIO MESA SOLAR ELECTRIC GENERATING FACILITY CEC BIOLOGICAL RESOURCES WORKSHOP March 13, 2012”, docketed with the Commission, and posted on the web on March 14, 2012.

Response:

For the purpose of this response, we presume that the request for “data, modeling and modeling assumptions” relied on for statements regarding the SEDC project and the Rio Mesa Project, refers to the statements on the powerpoint slide entitled “Rio Mesa Solar – Risk Factors for Tower Technology”.

In the March 13, 2012 CEC workshop, Applicant presented a report titled “*Air Temperature Surrounding the SRSG*” (the “**Air Temp Report**”). **The Air Temp Report was prepared by Applicant utilizing modeling data that was created by Applicant’s consultant in Israel using** a Computational Fluid Dynamics (CFD) modeling program. The CFD was used to determine the air temperature profiles near the SRSG for SEDC and Ivanpah. The Air Temp Report was docketed as an Appendix to the Applicant’s March 14th, 2012 reply brief. The results of this report are applicable to the Rio Mesa project because the physical heat transfer and natural convection mechanisms are the same for a hot body in ambient air, and differences in the size, relative shape, and elevation do not alter the basic physics. The two differences between the Ivanpah and the Rio Mesa SRSG are as follows:

First, the Rio Mesa Tower is 290’ taller than the Ivanpah tower. This is significant because wind speed tends to increase at higher altitude. Higher wind velocity speeds heat dissipation. Because, wind speed tends to increase at higher altitude, it is likely that heat dissipation at Rio Mesa will be more rapid than the rate of heat dissipation shown in the model for Ivanpah.

Second, whereas the Ivanpah SRSG is a square section, the Rio Mesa SRSG is a **32 sided polygon**. The near circular section of the Rio Mesa SRSG has no acute angles and thus is prone to a more efficient airflow around it than is a square section (due to a more continuous boundary layer). This, in turn, creates fewer low pressure zones (vortices) where hot air off the SRSG skin tends to linger. This geometrical difference will result in a slightly smaller heat loss from the SRSG surface for Rio Mesa than the rate of heat dissipation shown in the model for Ivanpah.

As mentioned above, the modeling work was conducted for Applicant by a consultant who specializes in CFD modeling. The Air Temp Report includes the relevant input data (boiler dimensions and geometry, tube surface temperatures, and ambient conditions). Applicant does not own the expensive (~\$75,000/seat) ANSYS FLUENT 3-D modeling software. However, with access to the software and the expert(s) to use it, the Air Temp Report contains the necessary data to recreate the model.



**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 *RIO MESA SOLAR*
*ELECTRIC GENERATING FACILITY***

**DOCKET NO. 11-AFC-04
PROOF OF SERVICE
(Revised 2/27/12)**

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DECLARATION OF SERVICE

I, Michelle L. Farley, declare that on April 27, 2012, I served and filed copies of the attached Supplementary Response to Center for Biological Diversity Data Request No. 3 dated March 15, 2012, dated April 27, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: [\[http://www.energy.ca.gov/sitingcases/riomesa/index.html\]](http://www.energy.ca.gov/sitingcases/riomesa/index.html).

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(Check all that Apply)

For service to all other parties:

Served electronically to all e-mail addresses on the Proof of Service list;

Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "e-mail preferred."

AND

For filing with the Docket Unit at the Energy Commission:

by sending electronic copies to the e-mail address below (preferred method); **OR**

by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT

Attn: Docket No. 11-AFC-4
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission
Michael J. Levy, Chief Counsel
1516 Ninth Street MS-14
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I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.



Michelle L. Farley