Memorandum

Date: November 2, 2009
Telephone: (916) 651-0966

To: Karen Douglas, Chairman and Presiding Member
       Jeffrey D. Byron, Commissioner and Associate Member, and
       Docket number 08-AFC-2 Proof of Service List

From: California Energy Commission – Eric K. Solorio, Project Manager
       1516 Ninth Street
       Sacramento, CA 95814-5512

Subject: Final Staff Assessment (FSA) for Beacon Solar Energy Project (08-AFC-2)

On October 22, 2009, staff served the parties with a copy of the Final Staff Assessment (FSA) for the Beacon Solar Energy Project (BSEP) Application for Certification (08-AFC-2). Staff inadvertently omitted two sets of figures that should accompany the FSA. The figures titled “Cultural Resource, Figure 1 and Figure 2” should be inserted at the end of the Cultural Resources section of the FSA following page 4.3-2. The second set (7 pages) of figures, titled “Appendix B Figure(s) 1-13” should be inserted at the end of the Alternatives, Appendix B section of the FSA, directly behind “Alternatives Figure 4”. Staff appreciates your assistance with inserting these two sets of figures that were inadvertently omitted from the FSA and staff apologizes for any inconvenience this may cause.

If you have any questions about this letter please contact Eric Solorio, Siting Project Manager, at the address on this letterhead or by email to esolorio@energy.state.ca.us.

Attachments: Cultural Resources Figure 1 and Figure 2
                  Alternatives, Appendix B, Figures 1-13
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APPLICATION FOR CERTIFICATION  
For the **Beacon Solar Energy**  
Project

Docket No. 08-AFC-2  
PROOF OF SERVICE  
(Revised 4/28/09)

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*Reference Note: Diane Fellman is listed as a Director West Region for NextEra Energy Resources, but her role and contact information are also provided, indicating her involvement in the application.
DECLARATION OF SERVICE

I, Maria Santourdjian, declare that on November 3, 2009, I served and filed copies of the attached Beacon Solar Energy Project (08-AFC-2) Letter regarding the Final Staff Assessment. 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, in the following manner:

(Check all that Apply)

FOR SERVICE TO ALL OTHER PARTIES:

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

__x__ by personal delivery or by depositing in the United States mail at Sacramento 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:

__x__ 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. __________
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.

__________________________
Maria Santourdjian
CULTURAL RESOURCES - FIGURE 1
Beacon Solar Energy Project - Project Site Landforms
Variations in Gross Cycle Efficiency vs. Steam Flow (wet cooled turbine)

Turbine Gross Efficiency vs. Flow (turbine selected for use with wet cooling system)

Variations in Gross Cycle Efficiency vs. Turbine Exhaust Pressure (for different steam flow rates)

Plant Efficiency vs Backpressure and Flow

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION, SEPTEMBER 2009
SOURCE: APPENDIX B Maulbetsch 8-30-09

SEPTEMBER 2009 APPENDIX B
APPENDIX B - FIGURE 3 & 4
Beacon Solar Energy Project

Dry Cooled Plant Cycle Efficiency (% of design steam flow as parameter)

Dry Cooling Turbine Efficiency vs. Backpressure (flow as parameter)

Dry Cooling Turbine Efficiency vs. Steam Flow (Backpressure of 2. in Hga)

Dry cooled plant cycle efficiency vs % steam flow
(Turbine exhaust pressure = 2. in Hga)

y = -1.207309E+01x^6 + 4.149155E+01x^5 - 5.721130E+01x^4 + 4.042227E+01x^3 - 1.551395E+01x^2 + 3.169736E+00x + 7.349901E-02

% Flow

Cycle Efficiency, %

Exhaust Pressure, in Hga

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMETAL PROTECTION DIVISION, SEPTEMBER 2009
SOURCE: APPENDIX B Maulbetsch 8-30-09
Cycle Efficiency Comparison of Wet and Dry Cooled Plants

Gross Efficiency Comparison vs. Flow

- Wet cooled turbine
- Dry cooled turbine

Net Output Comparison of Wet and Dry Cooled Plants

Comparison of Net Output Profiles

- Wet cooled plant
- Dry cooled plant
Comparison of Cycle Efficiencies for Three ACC's

Cycle Efficiency of Three ACC's

<table>
<thead>
<tr>
<th>Temperature (F ITD)</th>
<th>Cycle Efficiency (%)</th>
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<tbody>
<tr>
<td>40</td>
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<tr>
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<tr>
<td>45</td>
<td>34.00%</td>
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</table>

Comparison of Plant Net Output Profiles for Three ACC's

Comparison of net plant output for three ACC's

<table>
<thead>
<tr>
<th>Temperature (F ITD)</th>
<th>Net MWe</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td></td>
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</tr>
</tbody>
</table>

CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION, SEPTEMBER 2009

SOURCE: APPENDIX B Maulbetsch 8-30-09
APPENDIX B - FIGURE 9 & 10
Beacon Solar Energy Project

Comparison of Net Output Profiles

- Dry cooled plant--Expanded
- Dry cooled plant--Base

Net Plant Output, MWe

Expanded Field Performance (12% Expansion)

Comparison of Net Output Profiles

- Wet cooled plant
- Dry cooled plant--Expanded
APPENDIX B - FIGURE 11 & 12
Beacon Solar Energy Project

“All Dry” Operation Conditions With Boundary

"250 MW" Hybrid System---All dry operating boundary

Ambient Temperature, F

Solar input to power block, MWth

Annual Operating Profile for Plant with “250 MW” Hybrid System

Plant Net Output Power with "250 MW" Hybrid Cooling System

Net Power Output, MWe

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Comparison of Net Output Profiles

- **Wet cooled plant**
- **Hybrid plant--Expanded**