

March 13, 2009

Mr. John Kessler  
Project Manager  
Attn: Docket No. 07-AFC-8  
California Energy Commission  
1516 9<sup>th</sup> Street, MS-15  
Sacramento, CA 95814-5512

<b>DOCKET</b> 07-AFC-8
DATE <u>MAR 13 2009</u>
RECD. <u>MAR 18 2009</u>

**Subject: Bollard Acoustical Consultants, Inc. (BAC), review of noise mitigation plan for the Carrizo Energy Solar Farm Project on behalf of Michael Strobridge**

Dear Mr. Kessler:

Pursuant to the request of Mr. Michael Strobridge, I have completed a review of the Noise Mitigation Plan prepared for the Carrizo Energy Solar Farm, dated February 2009. This review was specifically undertaken to evaluate the effectiveness of the proposed Noise Mitigation Plan in mitigating significant noise-related impacts at the Strobridge Residence during both project construction and operation. This letter contains the findings of my review.

In preparing this evaluation, I reviewed the project preliminary Staff Assessment (November 2008), the Noise Mitigation Plan (February 2009), e-mail correspondence from Mr. Strobridge, the Reyes Residence Noise Impact Analysis, the noise monitoring data collected at the Strobridge Residence by Brown-Buntin Associates (October 16, 2008), and the applicants comments on the Preliminary Staff Assessment. It should be noted, however, that although each of these documents was reviewed, the focus of this letter is on BAC's assessment of the Noise Mitigation Plan. Specifically the effectiveness of that plan in preventing significant noise impacts at the Strobridge Residence during construction and operation of the project.

**Comments on Ambient Noise Conditions at the Strobridge Residence**

It is unclear to me why there is such a large disparity between the ambient noise measurement data collected at the Strobridge Residence by URS, and the data collected by Brown-Buntin Associates (BBA). I am in full agreement with CEC staff, however, that the BBA results should be utilized to establish baseline conditions at the Strobridge Residence, and not the URS data. The disparity does, however, call into question the validity of other aspects of the noise analysis prepared by the applicant's consultant.

### **Comments on the Project Standards of Significance**

I concur with the CEC Staff conclusion that, although preliminary estimates of project noise generation (assuming they are accurate), indicate the project would comply with applicable Laws, Ordinances, Regulations, and Standards (LORS), impacts should be assessed relative to the low measured ambient noise conditions. I also concur with CEC staff that noise level increases of less than 5 dB would not likely result in significant noise impacts, but because the project would introduce a new source of noise into the community, I believe that any increase in excess of 5 dB increase may be significant. In light of this belief, the CEC Staff recommendation of using a 6 dB threshold is not unreasonable.

### **Comments on Project Construction Noise**

Although construction noise is technically exempt from the provisions of the San Louis Obispo County Noise Ordinance provided such activities occur during certain daytime hours, I agree with the CEC staff opinion that the 3-year construction period cannot reasonably be considered temporary. Therefore, I agree that construction noise impacts should be evaluated at the Strobridge Residence, even during daytime periods.

While I believe the preliminary construction noise forecasts prepared for the Strobridge Residence were likely dramatically overstated, I believe the revised construction noise estimates are reasonable. Overall, the reference levels used in the Mitigation Plan, as well as the assumption that 80% of the construction equipment will be concentrated in the power block area, appear reasonable to me.

Overall, I believe the construction noise assessment in the Mitigation Plan is far superior to what URS had offered by way of construction noise analysis previously, and I cannot professionally find significant fault with it. However, I am glad to see CEC Staff's requirement to restrict construction activities during the most sensitive nighttime hours (i.e. 9 pm to 7 am, with an extension to 5 am during construction pours only as necessary). I believe between this requirement, coupled with the provision that the applicant mitigate typical construction noise to less than 40 dB Leq at the Strobridge Residence, the potential for adverse noise impacts at the Strobridge Residence will be greatly diminished.

### **Comments on Project Operational Noise**

Assessing the accuracy of the URS noise computations for project operations is more difficult than for construction, as operational noise will hinge on the noise generation of the actual equipment which is ultimately installed, as well as the level of sound suppression included with that equipment. However, because Condition NOISE-4 requires that the project not generate noise levels in excess of 39 dB at the Strobridge Residence, and because acoustic testing is required to demonstrate compliance with that performance standard, the accuracy of the modeling is not as critical.

If, however, the applicant is suggesting eliminating the NOISE-4 requirement due to their newly modeled levels (which indicate the project will be in compliance with the CEC threshold of 39), then the modeling accuracy is crucial. I would strongly suggest that the conditions of NOISE-4 remain intact, as it is the only assurance Mr. Strobridge has that Carrizo will be required to continue to mitigate until the noise levels at the Strobridge Residence are satisfactory.

It is important to note that the following statement from page 2-7 of the Noise Mitigation Plan (1<sup>st</sup> full paragraph), is completely lacking in enforceability: "...however, if daytime operational noise levels were louder than expected, the Applicant would *consider* (emphasis added) mitigation measures including sound insulation upgrades for Strobridge and/or installation of a barrier between the ACC pair and northerly receivers.

The CEC should absolutely mandate that the project comply with the established 39 dB standard at the Strobridge Residence, and that acoustic testing be required as identified in NOISE-4 to verify such compliance. The installation of additional acoustical insulation at the Strobridge Residence is lacking as a mitigation measure as it would have no influence on exterior levels and would provide no benefit when windows are in the open configuration.

Incidentally, Table 11 of the Noise Mitigation Plan shows an A-weighted Sound Power Level (PWL) of 112 dB for the ACC unit, with a source height of 21 meters (69 feet). Assuming spherical spreading of sound between the source and receiver (6 dB per doubling of distance from the source), and an additional attenuation rate of 1.5 dB per thousand feet for atmospheric absorption and excess ground attenuation, the computed level at the Strobridge Residence from this one source alone would be approximately 47 dB Leq, or 9 dB higher than levels predicted for the entire facility within the Mitigation Plan. Given the elevated source position, inclusion of excess ground attenuation into the computation may not be justified, so actual levels could be even higher. The applicant should be very concerned about being required to retrofit the facility to achieve an additional 9 dB of noise reduction should their consultants computations turn out to be incorrect.

I believe that, given the fixed locations of the project equipment (as opposed to the mobile locations of project construction equipment), substantive reductions in industrial noise levels may be feasible through the use of state-of-the-art engineering controls or other site design options. I do not agree with the arguments included in the Mitigation Plan stating why various mitigation options would be impractical. For example, if a barrier is impractical now, as stated in Section 2.2.1.2 of the Mitigation Plan, then why would it become practical later should noise measurements indicate that "operational noise levels were louder than expected."? These statements are completely contradictory.

It is not surprising that the Mitigation Plan concludes a barrier between the ACC units and the Strobridge Residence would not provide appreciable noise reduction (Table 12 of that Plan shows no noise reduction for barrier heights of 40, 50 and 60 feet). Because Table 11 shows that the top of the ACC unit is 68 feet tall (21 meters), a 40, 50 or 60-foot tall barrier located less than 100 feet from the source would naturally be ineffective, as it would not intercept line of sight between the source and receiver. An additional 10 feet of barrier height would have intercepted line of sight, resulting in a minimum noise reduction of 5 dB. The fatal flaw in the Mitigation Plan barrier analysis is simply that the barriers considered stopped short of intercepting line of sight between the source and receiver, and were therefore considered ineffective.

Finally, I disagree with the assertion that the power block could not be relocated without resulting in adverse effects at others. At the position currently proposed for the power block, the noisiest project component (ACC) would reportedly be located approximately 3200 feet from the Strobridge Residence. If the power block were relocated to the center of the site, the distance would increase to approximately 5,400 feet. The resulting decrease in noise would be approximately 8 dB based on spherical spreading of sound and 1.5 dB attenuation due to atmospheric absorption and excess ground attenuation. Even with the relocation, the Strobridge Residence would still be one of the closest to the power block. I see no concrete analysis provided to indicate that such a logical relocation would adversely affect others.

Incidentally, given the shape of the site, it seems that there would be engineering efficiencies associated with the superheated water travelling shorter distances from the reflectors to the power block if it were relocated to the center of the site, without any apparent drawbacks. This measure would also have the added benefit of locating 80% of the construction equipment, which is asserted to be concentrated at the power block, further away from the nearest residences during project construction as well. Plus, should operational noise levels be higher than anticipated, the added distance between the power block and the Strobridge Residence would reduce the degree of additional noise control measures required of the applicant to comply with NOISE-4.

## **Conclusions**

The applicant indicates that, following predictive analysis refinements and consideration of several potential noise mitigation options, noise levels for all construction and operational phases of the project can be mitigated to less than significant levels.

With the number of variables involved in the applicant's computations of both construction and operational noise levels at the nearest residences, BAC is unable to state with certainty whether or not project construction and operation noise levels would, in fact, satisfy the CEC's requirements. I think it is precisely because of these modeling variables that the CEC should not consider eliminating or revising NOISE-4, as it provides specific performance standards for the applicant which must be verified through testing.

Mr. John Kessler  
March 13, 2009  
Page 5

Because I believe the applicant's noise forecasts for the ACC unit may be optimistic, and because they do not provide any margin of safety relative to the CEC's performance standards at the Strobridge Residence, I believe the applicant should seriously consider relocating the power block to the center of the site. Should, for example, follow-up acoustic testing indicate that the power block noise generation noise exceeds the projects performance standards at the Strobridge residence, thereby requiring very costly acoustic retrofits, the opportunity to relocate the power block to the center of the site will have been lost.

In conclusion, I understand that this is a very complex acoustical situation, and I appreciate your willingness to work with Mr. Strobridge and his neighbors to ensure that the project is ultimately successful in achieving compatibility between the power plant and those neighbors. I do not have serious reservations with the updated construction noise forecasts contained in the Noise Mitigation Plan, but I am concerned for both the local residents and the applicant about the ability of the project to satisfy the standards of significance in its current configuration.

Please contact me at (916) 663-0500 or PaulB@bacnoise.com if you have any questions regarding this letter, or if I can otherwise be of assistance to you.

Sincerely,

Bollard Acoustical Consultants, Inc. (BAC)

  
Paul Bollard  
President



**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](http://WWW.ENERGY.CA.GOV)**

**APPLICATION FOR CERTIFICATION  
FOR THE CARRIZO ENERGY  
SOLAR FARM PROJECT**

**Docket No. 07-AFC-8**

**PROOF OF SERVICE**

**(Revised 2/18/2009)**

**APPLICANT**

Perry H. Fontana, QEP  
Vice President-Projects  
Ausra, Inc.  
2585 East Bayshore Road  
Palo Alto, California 94303  
[perry@ausra.com](mailto:perry@ausra.com)

**APPLICANT CONSULTANT**

Angela Leiba, GISP  
Senior Project Manager  
GIS Manager/Visual Resource  
Specialist  
URS Corporation  
1615 Murray Canyon Road, Suite  
1000  
San Diego, CA 92108  
[angela\\_leiba@urscorp.com](mailto:angela_leiba@urscorp.com)

Kristen E. Walker, J.D.  
URS Corporation  
1615 Murray Canyon Road, Suite  
1000  
San Diego, California 92108  
[kristen\\_e\\_walker@urscorp.com](mailto:kristen_e_walker@urscorp.com)

**COUNSEL FOR APPLICANT**

Jane E. Luckhardt  
DOWNEY BRAND  
621 Capitol Mall, 18th Floor  
Sacramento, CA 95814  
[jluckhardt@downeybrand.com](mailto:jluckhardt@downeybrand.com)

**INTERESTED AGENCIES**

California ISO  
[e-recipient@caiso.com](mailto:e-recipient@caiso.com)

**INTERVENORS**

**\*Mr. John A. Ruskovich**  
13084 Soda Lake Road  
Santa Margarita, California 93453  
[agarnett@tcsn.com](mailto:agarnett@tcsn.com)

**\*Mr. Michael Strobridge**  
9450 Pronghorn Plains Road  
Santa Margarita, California 93453  
[mike\\_76@live.com](mailto:mike_76@live.com)

California Unions for Reliable Energy  
(CURE)  
c/o Tanya Gulesserian  
Adams Broadwell Joseph & Cardozo  
601 Gateway Boulevard, Suite 1000  
South San Francisco, CA 94080  
[tgulesserian@adamsbroadwell.com](mailto:tgulesserian@adamsbroadwell.com)

John Burch  
Traditional Council Lead  
Salinan Tribe  
8315 Morro Road, #202  
Atascadero, California 93422  
[salinantribe@aol.com](mailto:salinantribe@aol.com)

**\*Environmental Center of  
San Luis Obispo (ECOSLO)**  
c/o Babak Naficy  
P.O. Box 13728  
San Luis Obispo, California 93406  
[babaknaficy@sbcglobal.net](mailto:babaknaficy@sbcglobal.net)  
**ENERGY COMMISSION**

JEFFREY D. BYRON  
Commissioner and Associate Member  
[jbyron@energy.state.ca.us](mailto:jbyron@energy.state.ca.us)

Gary Fay  
Hearing Officer  
[Gfay@energy.state.ca.us](mailto:Gfay@energy.state.ca.us)

John Kessler  
Project Manager  
[jkessler@energy.state.ca.us](mailto:jkessler@energy.state.ca.us)

Caryn Holmes  
Staff Counsel  
[cholmes@energy.state.ca.us](mailto:cholmes@energy.state.ca.us)

Michael Doughton  
Staff Counsel  
[mdoughto@energy.state.ca.us](mailto:mdoughto@energy.state.ca.us)

Elena Miller  
Public Adviser  
[publicadviser@energy.state.ca.us](mailto:publicadviser@energy.state.ca.us)

**DECLARATION OF SERVICE**

MICHAEL  
I, STROBRIDGE, declare that on 3/15/09, I served and filed copies of the attached NOISE MITIGATION Response. 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:  
**[<http://www.energy.ca.gov/sitingcases/carrizo/index.html>].** 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:**

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

\_\_\_\_\_ by personal delivery or by depositing in the United States mail at Sacramento, California 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**);

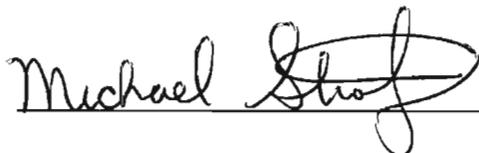
**OR**

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

**CALIFORNIA ENERGY COMMISSION**

Attn: Docket No. 07-AFC-8  
1516 Ninth Street, MS-4  
Sacramento, CA 95814-5512  
[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

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

  
\_\_\_\_\_