

22



Description:

Plot 1

Predicted Sound Contours (dBA)
of Attenuated Baseline Plant
Operating at Base Load

Project:

Russell City Energy Center

Drawing Number:

RCEC-Rev-B-1-2

Date:

November 14, 2006

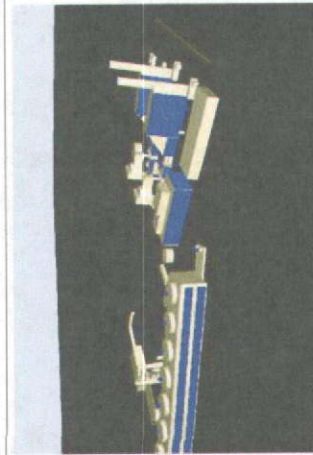
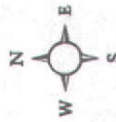
Prepared for:

Calpine

Legend:

Property Line

Access Road Easement



3D View of Model

FIGURE 3.7-1
NOISE CONTOURS
RCEC AMENDMENT #1
HAYWARD, CALIFORNIA

SOURCE: Hessler Associates, Inc., 2006

EY112006002SAC figure_3_7_1.ai 11-14-06 tdaus

CH2MHILL

NOISE AND VIBRATION

Testimony of Steve Baker

SUMMARY OF CONCLUSIONS

The Noise and Vibration findings and conclusions incorporated in the Energy Commission's original decision (Decision) (CEC 2002b) remain valid. The project, as amended, would likely comply with all applicable noise and vibration laws, ordinances, regulations and standards (LORS), and would likely cause no significant adverse noise or vibration impacts. To ensure that such is the case, staff recommends that the conditions of certification embodied in the original Decision be retained, with minor revisions.

INTRODUCTION

This analysis addresses only those aspects of the RCEC that would change as a result of the proposed amendment and that could affect the project's noise and vibration impacts and its compliance with noise and vibration Laws, Ordinances, Regulations and Standards (LORS).

Changes due to the proposed amendment that could affect project noise and vibration include: relocating the project approximately 1,300 feet (1/4 mile) to the northwest of its permitted location; replacing the Advanced Water Treatment plant with a Zero Liquid Discharge facility; deleting the standby generator; installing a new natural gas pipeline in Depot Road; and, constructing a sound wall along the southern edge of the project site (RCEC 2006a). (See original Decision for the project at

.)

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS) — COMPLIANCE

Applicable LORS have not changed since the Energy Commission certified the project (CEC 2002b).

SETTING

Two aspects of the proposed amendment could act to change project noise and vibration impacts and compliance with LORS. One is changes to the project equipment list, specifically: the substitution of a Zero Liquid Discharge facility for the Advanced Water Treatment facility; the deletion of the standby generator; the installation of a new natural gas pipeline; and, the construction of a sound wall along the southern edge of the project site. The other is the relocation of the facility 1/4 mile to the northwest, which increases the distance between the facility and nearby sensitive noise receptors. The nearest residential receptor, a residence at 2627 Depot Road, now lies 0.96 miles distant, an increase from its prior distance of 0.82 miles (RCEC 2006a, Table 3.7-1).

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

As described in the Decision (CEC 2002b, p. 195), staff examines the proposed project's likely noise and vibration impacts, during project construction and during plant operation, for compliance with applicable LORS, and evaluates these impacts for significance. This same method is employed in analyzing this amendment.

DIRECT/INDIRECT IMPACTS AND MITIGATION

Construction Impacts and Mitigation

The project owner explains that relocating the project and the construction parking area will still comply with all applicable noise and vibration LORS, and will cause no new significant impacts (RCEC 2006a, pp. 3-109, 3-110). The new natural gas supply pipeline will be buried in Depot Road. The surroundings of the new site are of the same character as the site certified by the Energy Commission, and likely noise receptors are similar in nature.

Staff agrees with this characterization. Since construction will be governed by the same conditions of certification incorporated in the original Decision, applicable LORS must still be complied with, and no new impacts are likely.

Operation Impacts and Mitigation

The project owner lists changes to the project design that could affect noise emissions (RCEC 2006a, pp. ES-1, 1-1, 2-2, 2-4). These include the substitution of a Zero Liquid Discharge facility for the Advanced Water Treatment facility and the deletion of the standby generator. The City of Hayward has submitted a letter (Hayward 2006) announcing that the project owner has committed to constructing a sound wall along the southern edge of the project site. To ensure that this wall is actually built, staff has proposed a modification to Condition of Certification **NOISE-6** below.

The change in water treatment methods will change the noise generation profile of the power plant. Deletion of the standby generator will decrease periodic noise emissions. The new sound wall will act to reduce noise propagation to the south, toward the Hayward Shoreline Interpretive Center. The project owner has modeled this altered noise regime and compared noise impacts from the amended project to ambient noise levels (RCEC 2006a, Table 3.7-2). This information is presented in **NOISE Table 1**:

NOISE Table 1
Comparison of Ambient Noise and Amended Project Noise Impacts

Monitoring Location	Average Nighttime L ₉₀ (dBA)	Amended Project Noise (dBA)	Difference (dBA)
Nearest residence – 2627 Depot Rd.	45.8	43	-2.8
Waterford Apartments	49.5	42	-7.5
Shoreline Interpretive Center	51.2	45	-6.2
Cogswell Marsh Bridge	44.5	44	-0.5

Source: RCEC 2006a, Table 3.7-2

In order to evaluate the significance of noise impacts, staff examines the increase in noise levels caused by the project at sensitive receptors. The increases at receptor locations are calculated and displayed in **NOISE Table 2**.

NOISE Table 2
Increase in Noise Levels Caused by Amended Project

Monitoring Location	Average Nighttime L ₉₀ (dBA)	Amended Project Noise (dBA)	Cumulative Level (dBA)	Increase due to Project (dBA)
Northern Project Boundary	N/A	75*	N/A	—
Nearest residence – 2627 Depot Rd.	45.8	43	47.8	+2
Waterford Apartments	49.5	42	50.5	+1
Shoreline Interpretive Center	51.2	45	52.2	+1
Cogswell Marsh Bridge	44.5	44	47.5	+3

*RCEC 2006a, Figure 3.7-1

The primary LORS applicable to project operation is the City of Hayward General Plan Noise Element (see above), which limits noise at project boundaries to between 75 dBA and 80 dBA. As seen in **NOISE Table 2** and in the Petition for Amendment (RCEC 2006a, Fig. 3.7-1), project boundary noise levels are not expected to exceed 75 dBA. This constitutes compliance with this LORS.

As explained in the Decision (CEC 2002, p. 197), increases in noise levels of 5 dBA or less, are ordinarily considered insignificant impacts. As shown in **NOISE Table 2** above, predicted increases in noise level due to the project at sensitive receptors range from 1 dBA to 3 dBA. This would constitute an insignificant impact.

The project owner notes (RCEC 2006a, p. 3-113) that Condition of Certification **NOISE-6** required measurement of project noise emissions at the five measurement sites employed in the original Application for Certification. With the relocation of the project, Measurement Site 1 is no longer appropriate. In its place, the project owner requests that this site be changed to a location along the amended project's eastern boundary, the side of the project site that faces the majority of potential noise receptors. Staff

agrees with this change, and proposes this modification in Condition of Certification **NOISE-6** below.

CUMULATIVE IMPACTS AND MITIGATION

Staff knows of no new nearby projects, subsequent to the original Decision, that could combine with the amended project to produce cumulative noise or vibration impacts.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

The only comment received regarding noise is a letter from the City of Hayward (Hayward 2006) that explains how the amended project will comply with all applicable local LORS, and reveals that the project owner has committed to construct a sound wall along the southern edge of the project site. Staff has incorporated this information into the above analysis.

CONCLUSIONS

The Noise and Vibration findings and conclusions incorporated in the original Decision remain valid, with the minor change being that the nearest residential receptors now lie further from the project site (CEC 2002b, p. 203 Finding No. 2). Specifically, the residence at 2627 Depot Road now lies one mile distant. The project, as amended, would likely comply with all applicable noise and vibration LORS, and would likely cause no significant adverse noise or vibration impacts. To ensure that such is the case, staff recommends that the conditions of certification embodied in the original Decision be retained, with minor revisions to Condition of Certification **NOISE-6** as discussed above.

AMENDED AND PROPOSED CONDITIONS OF CERTIFICATION

The conditions of certification below are the original conditions contained in the Decision, with the exception that Condition of Certification **NOISE-6** has been modified as a result of the project owner's request, as part of its Petition to Amend submitted to the Energy Commission on November 17, 2006, and as discussed above. Strikeout has been used to indicate deleted language, and underline to indicate new language.

NOISE-1 At least 15 days prior to the start of ground disturbance, the project owner shall notify the City of Hayward, the Hayward Area Recreation District, the East Bay Regional Parks District, and residents within one mile of the site, by mail or other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: The project owner shall transmit to the Energy Commission Compliance Project Manager (CPM) in the first Monthly Construction Report following the start of construction, a statement, signed by the project manager, attesting that the above notification has been performed, and describing the method of that notification. This statement shall also attest that the telephone number has been established and posted at the site.

NOISE-2 Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project related noise complaints.

Protocol: The project owner or authorized agent shall:

- Use the Noise Complaint Resolution Form (see Exhibit 1), or functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise related to the complaint;
- If the noise is project related, take all feasible measures to reduce the noise at its source; and
- Submit a report documenting the complaint and the actions taken. The report shall include a complaint summary, including final results of noise reduction efforts, and, if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant's satisfaction.

Verification: Within 30 days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form, or similar instrument approved by the CPM, with the City of Hayward, and with the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 30-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is finally implemented.

NOISE-3 Prior to the start of ground disturbance, the project owner shall submit to the CPM for review a noise control program. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal-OSHA standards.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM the noise control program. The project owner shall make the program available to OSHA upon request.

NOISE-4 The project owner shall employ a low-pressure continuous steam or air blow process. High-pressure steam blows shall be permitted only if the system is equipped with an appropriate silencer that quiets steam blow noise to no greater than 86 dBA, measured at a distance of 50 feet. The project owner

shall submit a description of this process, with expected noise levels and projected hours of execution, to the CPM.

Verification: At least 15 days prior to any low-pressure continuous steam or air blow, the project owner shall submit to the CPM drawings or other information describing the process, including the noise levels expected and the projected time schedule for execution of the process.

NOISE-5 At least 15 days prior to the first steam or air blow(s), the project owner shall notify the City of Hayward, the Hayward Area Recreation District, the East Bay Regional Parks District, and residents within one mile of the site of the planned activity, and shall make the notification available to other area residents in an appropriate manner. The notification may be in the form of letters to the area residences, telephone calls, fliers or other effective means. The notification shall include a description of the purpose and nature of the steam or air blow(s), the proposed schedule, the expected sound levels, and the explanation that it is a one-time operation and not a part of normal plant operations.

Verification: Within five (5) days of notifying these entities, the project owner shall send a letter to the CPM confirming that they have been notified of the planned steam or air blow activities, including a description of the method(s) of that notification.

NOISE-6 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the project will not cause resultant noise levels to exceed the noise standards of the City of Hayward Municipal Code or Noise Element. Included shall be a sound wall along the southern edge of the project site.

No new pure tone components may be introduced. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints. Steam relief valves shall be adequately muffled to preclude noise that draws legitimate complaints.

Protocol: Within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct short-term survey noise measurements at the eastern boundary of the project site, and at monitoring sites 1, 2, 3, 4, and 5. The short-term noise measurements shall be conducted during both daytime (7 a.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) periods. The survey during power plant operation shall also include measurement of one-third octave band sound pressure levels at each of the above locations to ensure that no new pure-tone noise components have been introduced.

If the results from the survey indicate that the noise level due to the project at monitoring site 2 exceeds 44 dBA L_{eq} , or that the noise standards of the Hayward Noise Element have been exceeded at the eastern boundary of the project site or at monitoring sites 1, 4, or 5, mitigation measures shall be implemented to the project to reduce noise to a level of compliance with these limits.

If the post-construction noise survey indicates that pure tones have been introduced by plant operations, the project owner shall take any necessary corrective actions to eliminate the pure tones.

Verification: Within 30 days after completing the post-construction survey, the project owner shall submit a summary report of the survey to the CPM. Included in the post-construction survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. Within 30 days of completion of installation of these measures, the project owner shall submit to the CPM a summary report of a new noise survey, performed as described above and showing compliance with this condition.

NOISE-7 Within 30 days after the facility is in full operation, the project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility. The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure. The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

Verification: Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request.

NOISE-8 Heavy equipment operation and noisy construction work shall be restricted to the times of day delineated below:

Monday-Saturday 7:00 a.m. to 7:00 p.m.

Sundays and holidays 10:00 a.m. to 6:00 p.m.

Verification: The project owner shall transmit to the CPM in the first Monthly Construction Report a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

REFERENCES

CEC (California Energy Commission) 2002b — Decision for the Russell City Energy Center AFC, Alameda County, published on September 11, 2002.

Hayward 2006 — City of Hayward letter from Jesús Armas, City Manager, to B. B. Blevins, California Energy Commission, December 5, 2006.

RCEC (Russell City Energy Company, LLC) 2006a — Amendment No. 1, submitted to the California Energy Commission on November 17, 2006.