

Memorandum

Date: December 11, 2006
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To: John L. Geesman, Presiding Member
Jeffrey D. Byron, Associate Member

From: **California Energy Commission**
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Ms. Jeri Zene Scott, Project Manager

Subject: **RUSSELL CITY ENERGY CENTER ISSUES IDENTIFICATION REPORT
(01-AFC-7C)**

Attached is the Energy Commission staff's Issues Identification Report. This report serves as a preliminary scoping document of the major project issues that have been identified to date. Energy Commission staff will discuss the issues in this report at the Informational Hearing and Site Visit scheduled for December 15, 2006.

cc: Proof of Service List

ISSUES IDENTIFICATION REPORT

RUSSELL CITY ENERGY CENTER AMENDMENT PETITION (01-AFC-7C)

**MS. JERI Z. SCOTT, PROJECT MANAGER
Energy Facilities Siting Division**

ISSUES IDENTIFICATION REPORT
RUSSELL CITY ENERGY CENTER AMENDMENT
(01-AFC-7C)

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ISSUES IDENTIFICATION REPORT

This report has been prepared by the California Energy Commission staff to inform the Committee and all interested parties of the potential air quality issues that have been identified thus far. These issues have been identified as a result of discussions with the Bay Area Air Quality Management District, and our combined review of the Russell City Energy Center Amendment Petition, Docket Number 01-AFC-7C. This Issues Identification Report contains a description of the amendment request, summary of potentially significant air quality issues, and a discussion of the proposed project schedule. The staff will address the status of potential air quality issues and progress towards their resolution in periodic status reports to the Committee.

AMENDMENT DESCRIPTION

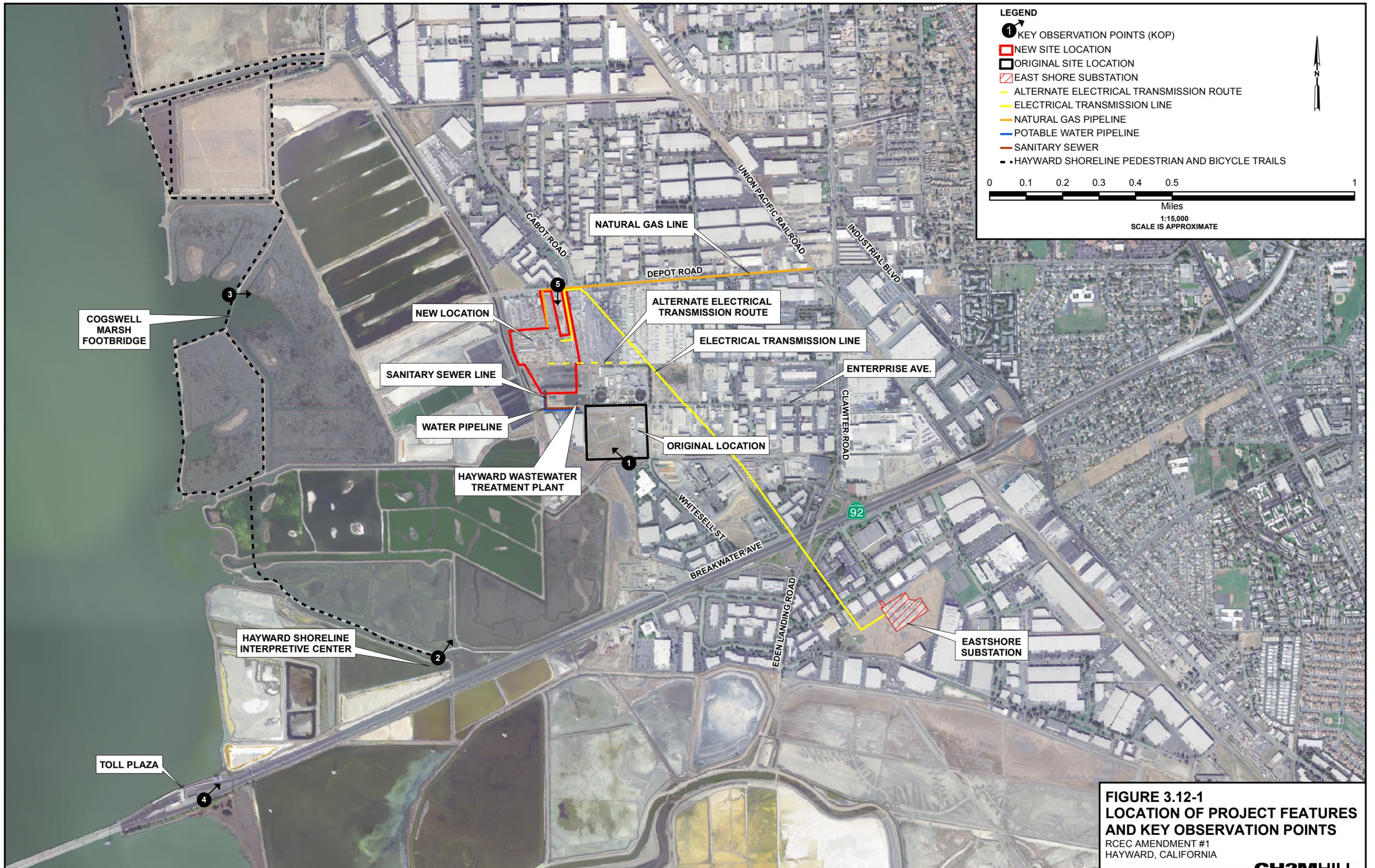
On November 17, 2006, the Russell City Energy Company, LLC filed a petition with the California Energy Commission requesting to modify the Russell City Energy Center (RCEC) Project. The 600 megawatt project was certified by the Energy Commission on September 11, 2002, and is expected to begin construction in the second quarter of 2008. The facility will be located in the City of Hayward, in Alameda County.

The petition contains several proposed modifications. The first one is the relocation of the project facilities approximately 1300 feet northwest of the original location (see Figure 3.21-1 from the amendment petition). The remaining modifications are related to changes of equipment and plant layout.

The proposed RCEC will include two Siemens Westinghouse "F-class" combustion turbine generators equipped with dry, low oxides of nitrogen combustors and steam injection capability; two heat recovery steam generators; a single condensing steam turbine-generator; a deaerating surface condenser; a wet mechanical-draft nine-cell cooling tower; and an emergency fire pump engine.

The project will use the Best Available Control Technology (BACT) to control emissions of nitrogen oxide (NO_x), volatile organic compounds (VOCs also referred to as POC), sulfur dioxide (SO₂), and Particulate Matter Less Than 10 Micron (PM₁₀)/2.5.

Following the completion of the certification process in September 2002, the project owner was granted permission by the Energy Commission to construct the RCEC project at the southwest corner of the intersection of Enterprise Avenue and Whitesell Street, directly south of the City of Hayward's Water Pollution Control Facility (WPCF). The project owner is now proposing to locate the facility directly west of the City of Hayward's WPCF between Depot Road and Enterprise Avenue, approximately 1300 feet northwest of the original location (300 feet boundary to boundary). The new location will total approximately 18.8 acres in both the City of Hayward and presently unincorporated Alameda County.



LEGEND

- ① KEY OBSERVATION POINTS (KOP)
- ▭ NEW SITE LOCATION
- ▭ ORIGINAL SITE LOCATION
- ▨ EAST SHORE SUBSTATION
- ALTERNATE ELECTRICAL TRANSMISSION ROUTE
- ELECTRICAL TRANSMISSION LINE
- NATURAL GAS PIPELINE
- POTABLE WATER PIPELINE
- SANITARY SEWER
- - - HAYWARD SHORELINE PEDESTRIAN AND BICYCLE TRAILS

0 0.1 0.2 0.3 0.4 0.5 1
Miles
1:15,000
SCALE IS APPROXIMATE

FIGURE 3.12-1
LOCATION OF PROJECT FEATURES
AND KEY OBSERVATION POINTS
 RCEC AMENDMENT #1
 HAYWARD, CALIFORNIA

As a result of this proposed change, no facilities will be located on the KFAQ radio tower parcel, thus eliminating the impact of a seasonal wetland on that parcel, and eliminating the impact that would have occurred from relocating the KFAQ radio towers adjacent to East Bay Municipal Utility District facilities and trailhead.

The natural gas pipeline route and a small portion (approximately 500' to 1,000') of the transmission line route will be re-located. Natural gas will be delivered to the new location via a new gas line from Pacific Gas and Electric Company's (PG&E) line 153 located along the Union Pacific Railroad easement to the east of the project. The natural gas pipeline will run entirely under Depot Road to the easement for a distance of approximately 3,800 feet (0.7 mile).

The proposed new 230 kV transmission line will run in the existing 115 kV Grant-Eastshore transmission corridor between the RCEC Project and the PG&E Eastshore substation. (The use of the existing PG&E corridor remains unchanged.) There are two alternatives for the new route, Alternative 1 and Alternative 2.

Alternative 1 would extend from the RCEC switchyard east to the eastern edge of the RCEC property and then north towards Depot Road. It will then turn east and run approximately 230 feet to the existing Grant-Eastshore 115 kV corridor. The remaining portion of the generation tie-line will run parallel to the existing 115 kV line for approximately 6,780 feet to the Eastshore substation. The entire Alternative 1 generation tie-line route from the RCEC property to the Eastshore substation will be approximately 7,010 feet (1.3 miles) long.

Alternative 2 would run from the RCEC switchyard east to the eastern edge of the RCEC property and then south to the southern edge of the RCEC property. It will then turn east and run approximately 950 feet along the southern boundary of several parcels that face Depot Road (also the northern boundary of the City of Hayward WPCF), to the Grant-Eastshore 115 kV transmission corridor. The segment from the existing Grant-Eastshore 115 kV transmission corridor to the Eastshore substation will be approximately 5,460 feet. This entire route will be approximately 6,410 feet (1.2 miles) long.

The City of Hayward WPCF will provide secondary effluent for the process water supply. A Zero Liquid Discharge (ZLD) system, which will be placed to the west of the switchyard and a Title 22 Recycled Water Facility (RWF), which will be located east of the power block, will be added to the new location to replace the proposed Advance Water Treatment facility. New construction laydown and worker parking areas will be added in close proximity to the new location.

There will be numerous minor adjustments made to the site layout that can be grouped into either (1) equipment additions or subtractions and (2) new equipment locations.

Equipment additions or subtractions, compared with the project as licensed, are as follows:

- The standby generator has been removed from the project.
- The architectural treatment has been removed from the project.
- A cooling tower chemical feed pavilion has been placed south of the ZLD area, to the east of the cooling tower.
- The stormwater retention basin has been removed from the project.
- A single recycled water storage tank replaces the two final product water storage tanks
- One of the two demineralized water storage tanks have been removed from the project
- The cooling tower now has nine cells instead of ten cells

The following are changes in equipment locations, compared with the project as licensed:

- The facility has been moved approximately 1,300 feet to the northwest (less than 300 feet boundary to boundary).
- The cooling tower has been realigned from a north-south orientation to a northwest-southeast orientation.
- The administration/ control building area has been moved to the southwestern corner of the project site.
- The aqueous ammonia tank has moved to the southeastern corner of the project in between the eastern combustion turbine and the RWF.
- A recycled water storage tank has been placed adjacent to the northeast corner of the power block, southeast of the proposed switchyard
- A reclaimed water storage tank has been placed adjacent to the northeast corner of the power block, south of the proposed switchyard.
- The demineralized water storage tank has been placed to the northwest of the power block, adjacent to the cooling tower.
- The fire water storage tank has been placed in the northwest corner of the power block.
- The fire pumps have been moved to the northwest corner of the power block adjacent to the fire water storage tank.
- The warehouse has been placed at the northern end of the project site.
- The fuel gas yard and compressor area has been moved to the north end of the project location, just north of the switchyard, and adjacent to the warehouse (a separate PG&E gas metering yard will be located adjacent to Depot Road).

- The gas compressors are now located outdoors instead of inside a building.
- The steam turbine has been moved north slightly so that it is parallel to the combustion turbines.
- The laboratory and sample panel has been separated from the administration building and is now located in an enclosure under the east-west pipe rack.
- The water treatment equipment has been separated from the administration building with water treatment equipment now located in a pavilion north of the ZLD area and cycle chemical feed systems located in a pavilion east of the administration building.
- The unit auxiliary transformers and power distribution center are now located at the east end of the east-west pipe rack, whereas previously they were located just south of the CTG generator step-up transformers.
- The combustion turbine inlet air filters are now located above the generators instead of east of the respective combustion turbines.

AMENDMENT PETITION PROCESS

This amendment process will be overseen by the Energy Facilities Siting Committee consisting of two commissioners. Staff is conducting a review of the RCEC amendment petition. The review will include an analysis of potential impacts on the environment, public safety and the transmission system, as well as a review of all applicable laws, ordinances, regulations and standards. The review will also include a thorough assessment of all new components of the proposed project and whether additional conditions of certification will be required. Additionally, staff is reviewing the consistency of the proposed amendment with the existing Commission Decision. Staff will produce a Staff Assessment for this amendment petition, which will serve as its testimony for evidentiary hearings conducted by the Siting Committee. The Siting Committee will prepare a proposed decision to be considered for approval by the full Commission.

POTENTIAL MAJOR ISSUES

This portion of the report contains a discussion of the potential air quality issues the Energy Commission staff has identified to date. This report may not include all the significant issues that may arise during the case, as discovery is not yet complete, and other parties have not had an opportunity to identify their concerns. The identification of the potential air quality issues contained in this report was based on our judgment of whether any of the following circumstances will occur:

- Significant impacts may result from the project which may be difficult to mitigate;
- The project as proposed may not comply with applicable laws, ordinances, regulations or standards (LORS);

- Conflicts may arise between the parties about the appropriate findings or conditions of certification for the Commission decision that could result in a delay to the schedule.

The following table lists all the subject areas evaluated and notes those areas where critical or significant issues have been identified in this Issues Identification Report. Even though an area is identified as having no significant issues, it does not mean that an issue will not arise related to the subject area. For example, disagreements regarding the appropriate conditions of certification may arise between staff and project owner that will require discussion at workshops or even subsequent hearings. Staff currently believes such issues will not have an impact on the schedule.

Major Issue	Subject Area	Major Issue	Subject Area
Yes	Air Quality	No	Paleontological Resources
No	Biological Resources	No	Public Health
No	Cultural Resources	No	Socioeconomics
No	Efficiency and Reliability	No	Soils
No	Facility Design	No	Traffic and Transportation
No	Geology	No	Transmission Line Safety
No	Hazardous Materials	No	Transmission System Engineering
No	Industrial Safety and Fire Protection	No	Visual Resources
No	Land Use	No	Waste
No	Noise and Vibration	No	Water Resources

AIR QUALITY

The project, as amended, may cause a new violation of the State 1-hour NO₂ standard

The oxides of nitrogen (NO_x) emissions emitted during combustion turbine start up, shut down and tuning would be twice as much as the original licensing application and permit limits. In addition, the applicant requests to delete a condition that prohibits simultaneous start up of both gas turbines. This would cause a four fold increase in NO_x emissions, which could cause a new violation of the existing NO₂ standard and lead to permit denial from the Bay Area Air Quality Management District (District).

The applicant proposes to use an ozone limiting method to lessen the impacts of the project NO_x emissions to avoid causing a new violation of the standard. However, this method is highly dependent on localized ambient concentrations of ozone and NO₂, and these data are not available for the area in the vicinity of the exhaust stacks and the facility. Thus the use of the ozone limiting method is questionable, and may provide uncertain results.

Staff plans to work with the District staff and the applicant to limit the NOx emissions during the transient periods to a level that would not cause new violation of the standard.

Inter-pollutant Trading

The applicant proposes to use, as one mitigation option, inter-pollutant trading - sulfur oxides (SOx) emission reduction credits to mitigate the project's particulate matter (PM10 and PM2.5) emissions. The applicant proposes to use 3 pounds of SOx emission reduction credits that they already own to mitigate every pound of the project's new PM10 emissions. Because SOx is a precursor to PM10 air contaminant, its use for mitigation of PM10 is acceptable if the appropriate inter-pollutant trading ratio is determined for the air basin's meteorological conditions and emissions inventories.

To make this determination, Energy Commission staff, District staff and agencies must rely on analytical studies that are specifically geared toward the actual environment of the area surrounding the project site. Such a study would need to find the nexus between measured concentrations of SOx and SOx-related PM10, which in most cases requires photochemical modeling analysis. The modeling itself is not a time consuming task, but the effort to get the data for such a modeling exercise could cause a significant delay in the amendment review process.

Staff plans to work with the California Air Resources Board, United States Environmental Protection Agency, the District staff, and the applicant to find an alternative method, such as one that is based on emission inventories and ambient air quality data for SOx and PM10.

Lack of specific offsets

The applicant has provided a list of emission reduction banking credits available from the District bank. They say they will purchase credits from the bank to mitigate the project's emission impacts. The applicant has asked for a fast track review of the application for amendment, and without specific identification regarding the location and quantities of the emission reduction credits, possible delay of the staff analysis as well as the District's Preliminary and Final Determination of Compliance can be expected.

Staff plans to work with the District staff and the applicant during the discovery phase to identify the specific emission reduction credits to ensure timely amendment processing.

SCHEDULING ISSUES

The following table is staff's proposed schedule of key events. Meeting the proposed schedule will require resolving issues expeditiously, working closely and efficiently with the Bay Area Air Quality Management District and the applicant's timely response to staff's information requests.

**Energy Commission Staff's Proposed Schedule for the
Russell City Energy Center (01-AFC-7C)
Major Amendment**

Activity	Day	Date
Petition filed by project owner	0	Nov 17, 06
Committee assigned to oversee petition process	0	Nov 17, 06
Staff files Issues Identification Report	24	Dec 11, 06
Committee holds information hearing and site visit	28	Dec 15, 06
Staff files data requests	33	Dec 20, 06
Project owner provides data responses	59	Jan 15, 07
Local, state, and federal agency preliminary determinations and comments	61	Jan 17, 07
Staff data response workshop	66	Jan 22, 07
Staff Assessment filed	94	Feb 19, 07
Staff Assessment workshop	104	Mar 01, 07
Agency comment on Draft Assessment	108	Mar 05, 07
Errata filed	131	Mar 28, 07
Evidentiary hearing	142	Apr 09, 07
Committee files proposed decision	172	May 08, 07
Committee conference on the proposed decision	186	May 22, 07
Close of public comments on the proposed decision	193	May 29, 07
Commission decision	205	Jun 11, 07