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ENVIR. APPEALS BOARD

I hereby certify that copies of Opening statement of Rob Simpson in the matter of Russell City Energy Center was served in the following manner.

By placing the document in a sealed envelope with postage fully paid in the United States mail addressed to :

Alexander Crockett  
Assistant General Counsel  
Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco CA 94109

I declare under the penalty of perjury under the laws of the State of California that the foregoing is true and correct

Executed on March 27, 2008 at Hayward California



Rob Simpson

**BEFORE THE ENVIRONMENTAL APPEALS BOARD  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON DC**

In the matter of  
Russell City Energy Center

)  
)  
)  
)

Appeal No. 08-01

2008 MAR 19 PM 2:32  
ENVIR. APPEALS BOARD

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**APPELLANT ROB SIMPSON'S REQUEST FOR JUDICIAL NOTICE**

Pursuant to Rule 201 of the Federal Rules of Evidence, I respectfully request that the Environmental Appeals Board take judicial notice of the following decision by the Bay Area Air Quality Management District (BAAQMD) Hearing Board:

1. On March 6, 2008, the BAAQMD Hearing Board dismissed my appeal (App. No. 15487) for lack of jurisdiction and cited EAB jurisdiction. At this time, the official order has not been posted

Dated: March 14, 2008

\_\_\_\_\_  
pro per

By:

  
Rob Simpson, in

## PROOF OF SERVICE

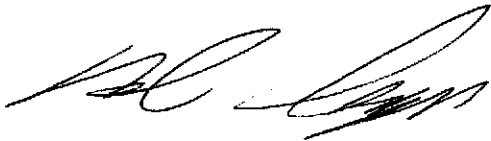
I hereby certify that copies of APPELLANT ROB SIMPSON'S REQUEST FOR JUDICIAL NOTICE in the matter of Russell City Energy Center was served in the following manner.

By placing the document in a sealed envelope with postage fully paid in the United States mail addressed to :

Alexander Crockett  
Assistant General Counsel  
Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco CA 94109

I declare under the penalty of perjury under the laws of the State of California that the foregoing is true and correct

Executed on March 19, 2008 at Hayward California

A handwritten signature in black ink, appearing to read 'Rob Simpson', is written over a horizontal line.

Rob Simpson

**BEFORE THE ENVIRONMENTAL APPEALS BOARD** MAR 31 AM 10:39  
**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**WASHINGTON, D.C.** ENV. APPEALS BOARD

In the matter of )  
Russell City Energy )  
Center )  
)  
Appeal No. 08-01

## Opening statement of Rob Simpson

**The California Energy Commission CEC Was the lead agency in this this case that is not disputed.**

The CEC Monasmith declaration states that "several comment letters were filed by various parties addressing Air quality issues, as shown on the docket index, but none were filed between April 2, 2007 and May 12, 2007.... the energy commission did not hold any public hearings during this time period and thus received no oral comment during this period" CEC Monasmith Decl 3 of 32

**Calpine states in an April 5<sup>th</sup>, 2007 status Report: (exhibit 27)**

"The Applicant recommends that the Staff Assessment on Air Quality be issued during the 30 day public comment period following the issuance of the PDOC, that the BAAQMD and the public may be informed of any concerns or questions that the staff may have with the PDOC... There is clear precedent for a schedule that requires the staff to file its Assessment after the Districts Preliminary Determination of Compliance but before the Districts final determination."

10 of 14

**The CEC did not issues its Air Assessment until July 2<sup>nd</sup>, 2007 well after the comment period.** This prevented the public from being informed of necessary information to effectively comment on the PDOC

Extensive air data is offered during the comment period by Calpine. Response to Data Requests 73-96 and 16 and 55-72 (exhibit 28)

**An Air Quality “WORKSHOP” was conducted by the CEC and BAAQMD on April 25, 2007** during the comment period in the same room (City Council Chambers) with the same Public hearing format as used in their “Public Hearings” but no record was kept of the “Workshop” Notice Posted: April 13, 2007. (Exhibit 27) 27

“The California Energy Commission staff will conduct a Data Response, Issue Resolution workshop for the Russell City Energy Center. The purpose is to discuss the project owner's responses to staff's data requests and to work toward resolving issues on the topics listed below. Discussion will also focus on comments and concerns from the City of Hayward's public agencies. All interested agencies and members of the public are invited to participate.

Wednesday, April 25, 2007

5:00 p.m. to 8:00 p.m.

HAYWARD CITY HALL BUILDING

Room 2A

777 B St., Hayward, CA 94541

(Wheelchair Accessible)

(Map to Location)

Discussion Topics

Air Quality

Land Use

Traffic and Transportation

**The public attended this workshop believing that this was a hearing and made “comments” believing that they would be considered.** Their comments were not considered or even recorded and no record of attendance has been offered.

When one opens the PDOC on the CEC website posted May 3rd (31 days after the start of the “public comment period”) it opens to page 2 of the document skipping the notice page. I must have read it 50 times and never noticed to scroll back from where it opened to find the notice until these hearings started, other members of the public may have had the same experience.

**40cfr 51.161 requires that the notice include “the local agency’s analysis of the effect on air quality”** because the notice does not contain this information the public was not informed of this vital decision making information and thus could not effectively consider or comment on the project during the purported comment period.

The Districts contention that agencies opted out of the notice by purportedly failing to respond to a third party agencies notice that made no reference to air Quality or PSD permitting is flawed. The opt out provision of 40cfr124.10 must refer to an affirmative action of the opting agency and cannot be construed as the District would contend. The District also offers no explanation of failing to provide notice to Communities for a Better Environment, San Francisco Bay Conservation and Development Commission, and

for failing to provide notice of the permitting action to the 600+ commenters and those who made public comments at the Air Quality Workshop. The question should not focus only on Did the District provide notice to Rob Simpson but did the District follow the required procedures to issue the PSD permit including the requirements for notice. Because they did not follow the procedures the EAB should either remand this issue to the District, allow the appeal to proceed and or investigate this matter on its own accord.

Respectfully submitted  
On March 27, 2008

Rob Simpson

Exhibit # 27

STATE OF CALIFORNIA

Energy Resources Conservation  
and Development Commission

IN THE MATTER OF: )  
 )  
PETITION TO AMEND THE COMMISSION )  
DOCKET NO. 01-AFC-7C )  
DECISION APPROVING THE APPLICATION )  
FOR CERTIFICATION FOR THE )  
RUSSELL CITY ENERGY CENTER )  
\_\_\_\_\_ )

Docket No. 01 AFC 7C

**APPLICANT'S STATUS REPORT #1**

The Russell City Energy Center LLC ("Applicant") submits this Status Report in response to the Committee's order of December 21, 2006.

**I. Status of the Proceeding**

The status of the proceeding is as follows:

(1) The Applicant has cooperated fully and in a timely manner with the Staff's investigation. The Applicant and Staff have been conferring weekly to review the status of the Staff's review. The Applicant has responded fully to all Staff Data Requests within the deadlines specified by Staff. As a result of this cooperation, the Staff has concluded its investigation of at least 16 of the 20 technical areas. For these areas, there are no disputed issues and the areas are "ready for publication."<sup>1</sup>

(2) The Bay Area Air Quality Management District (BAAQMD or District) is proceeding in a timely manner in its assessment of the air quality impacts of this project. The RCEC

<sup>1</sup> CEC Staff Status Report #1, February 27, 2007, p. 1.

Application to the BAAQMD was accepted as an Amendment and was deemed complete by the District on December 14, 2007. Following typical BAAQMD procedures, the PDOC will be issued on or before April 2, 2007 and the FDOC will be issued (following a 30 day public comment period) on or before June 1, 2007.

(3) On February 1, 2007, the Alameda County Local Area Formation Commission (LAFCO) approved the Mt. Eden Reorganization (Phase 1) Annexation of Territory to the City of Hayward and Corresponding Detachments from the Alameda County Library District and the Alameda County Fire Department. The approved annexation includes the unincorporated "islands" of territory known as the Depot Road Island where the northern portion of the proposed RCEC is located.

In short, the proceeding has moved forward in a timely manner. At least 16 of 20 technical areas are "ready for publication" at this time. The Applicant submits that the Staff Assessment should be issued promptly for all technical areas that are "ready for publication."

## **II Technical Areas Ready For Publication**

The Staff's Status Report #1 identifies 16 technical areas that the Staff has determined "have no issues and are ready for publication."<sup>2</sup> Because the Staff has completed its analysis of these subject areas, because the areas have no unresolved issues and because these issues are "ready for publication" the Applicant respectfully submits that the Staff promptly publish its Assessment on these 16 issues. Following publication of these issues, the Applicant recommends that there be an opportunity for a Staff Assessment Workshop, if any party so requests. If no party requests a Workshop, then the Workshop need not be scheduled. The

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<sup>2</sup> *Id.*



Applicant recommends that Agency comments on these issues be requested fifteen days after issuance of this Assessment, consistent with the time period provided in the current Committee schedule. The Applicant's proposed schedule is discussed further in Section IV below.

### **III. Technical Areas That May Have Unresolved Issues**

The Staff has listed four technical areas that it believes still have "issues". Except for Air Quality, it is not clear whether Staff believes that these other issues are ready for publication or will be ready for publication soon. We address each of these areas below.

#### **A. Air Quality**

The BAAQMD has informed the Staff and Applicant that it intends to issue a PDOC on or before April 2 and an FDOC on or before June 1. This is not a change in the District's planned procedures for processing the Amendment to the RCEC FDOC. In a pre-filing meeting with the CEC Staff on November 9, 2007 (this Amendment was filed on November 17) the Applicant explicitly discussed with the CEC Air Quality Staff that the District would prepare both a PDOC and a FDOC. Therefore, when the Staff proposed in its Issues Identification Report (IIR) to release its Staff Assessment on February 23, 2007, it knew or should have known that the FDOC would be released after February 23. Moreover, even if the Staff did not understand the District's schedule when it issued its IIR, the Staff had further opportunity to clarify its understanding with Mr. Weyman Lee (the District's Senior Air Quality Engineer who will be reviewing the RCEC Application at the District) when he attended the informational hearing and site visit on December 15, 2006.

The Applicant respectfully submits that the Staff should issue its Assessment of Air Quality issues after issuance of the PDOC. The PDOC for the Amended project will be very similar to the FDOC for the current project. Moreover, based on our extensive experience with

the BAAQMD, there is a very low probability that there will be any significant changes between the PDOC to be issued on or before April 2 and FDOC to be issued on or before June 1.

If the Staff issues its Assessment of Air Quality issues after release of the PDOC, two important purposes are served. First, if the Staff has any questions or concerns about the PDOC, the public interest is served by the Staff making these concerns known to the District and to the public after the PDOC is issued so that these concerns may be taken into consideration by the District in its preparation of the FDOC. Second, if the FDOC does not require any changes to the PDOC, the Staff Analysis is complete and this proceeding may move forward more promptly. In the unlikely event that there are any changes between the PDOC and FDOC, the schedule should allow the Staff an opportunity to supplement its air analysis (as provided in the current Committee schedule.)

#### **B. Land Use**

Under the category of Land Use, the Staff raises issues regarding thermal plumes, zoning and traffic impacts. The Applicant submits that while these issues represent matters that may be points of disagreement between the Applicant and Staff (issues that we are hopeful will be resolved), these are not reasons to delay issuance of the Staff Assessment on Land Use.

##### **1. Thermal Plumes**

The Staff states that (1) the Applicant is required to submit a Form 7460-1 to the Federal Aviation Administration (FAA), (2) the FAA must review the form and (3) the Alameda Airport Land Use Commission (AALUC) must receive the FAA response to the Form 7460-1 before the AALUC makes its determination regarding the compatibility of the new proposed location with airport land use plans.<sup>3</sup>

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<sup>3</sup> *Id.* at 2.

These statements by Staff are premised on a misreading of Applicable LORS. First, the Staff assumes that potential thermal plumes from the RCEC require the filing of a Form 7460-1. This is incorrect. According to the FAA, the Form applies only to solid structures. Because the RCEC does not penetrate the airport's horizontal surface or any of the approach surfaces, RCEC does not qualify under the 14 CFR Part 77.13 rules as a project that is a potential obstruction to air navigation and the FAA form is therefore not required.

Second, the staff assumes that the AALUC makes determinations of compatibility for specific projects.<sup>4</sup> This is also incorrect. According to the AALUC, it has no review authority over individual projects.

The Applicant will shortly submit a memorandum that addresses this issue with citation to applicable LORS and with records of conversation with the relevant agencies. However, it is not necessary to determine at this time whether the Staff's interpretation of FAA LORS is correct.

The significant point here is that the Staff should publish its interpretation in the Staff Assessment so that the Applicant and other interested agencies may formally respond. That is the normal process in Commission proceedings. The very purpose of the Staff Assessment is to place issues on the record for discussion and resolution. There is no basis for delaying issuance of the Staff Assessment on this issue.

## 2. Zoning

The Staff states that the City of Hayward would be required to issue the project owner an amended or new resolution for RCEC which has not occurred.

To the Applicant's knowledge, the City has not indicated that it agrees with the Staff's

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<sup>4</sup> *Id.*

interpretation of City LORS. The City Council has expressly endorsed this Project and has endorsed moving forward with the Amendment.<sup>5</sup> In any event, where the Staff believes that further input is required by a local agency, Staff should publish its interpretation in the Staff Assessment and allow the City to respond as appropriate. As noted above, that is the normal process in Commission proceedings. There is no basis for delaying issuance of the Staff Assessment on this issue.

### **3. Alternative parking sites**

The Staff states that cumulative traffic impacts *may* require relocation of offsite parking for workers during construction “but no alternative sites have been identified by the project owner.”<sup>6</sup> No alternatives have been offered by the Applicant because the Staff has not heretofore shared with the Applicant the reasons why it believes relocation may be required, nor has the Staff requested that the Applicant provide alternative locations. At this time the Staff should publish its Assessment of the issue. Then the Applicant can review the Assessment and either propose alternative sites or offer information why such sites are not required. Once again, there is no basis for delaying issuance of the Staff Assessment on this issue.

### **C. Traffic and Transportation**

The Staff correctly notes that it issued a supplemental data request on February 5, 2007 and requested a response by March 5, 2007. The Applicant submitted its response on March 2, 2007. With this response, the Staff should have all of the information it needs to promptly issue its Assessment on this technical area.

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<sup>5</sup> Informational Hearing, December 15, 2006, Tr. Page 6

<sup>6</sup> CEC Staff Status Report #1, February 27, 2007, p. 2

#### **D. Waste Management**

The Staff states that "Both the Energy Commission and DTSC [Department of Toxic Substances Control] recognize that there are deficiencies in the potential level of contamination on the parcels for the proposed new location."<sup>7</sup> To date, the Staff has not identified these alleged deficiencies to the Applicant. That is the purpose of the Staff Assessment.

Staff correctly notes that DTSC has provided Commission staff and the project owner with a draft copy of their comments and that we are in the process of responding to these comments. We expect that the DTSC will finalize its comments very soon. The Applicant expects to respond by March 9, 2007.

The Staff also states that Staff is working with the Regional Water Quality Control Board (Water Board) and the DTSC to understand which agency will be the administering agency. In a telephone conference call on February 27, 2007, between the Staff, Applicant, Water Board and DTSC, it was mutually agreed that the City of Hayward Fire Department is the preferred administering agency. The Applicant will ask the Hayward Fire Department to accept this role.

With the Applicant's response to the DTSC to be filed by March 9, 2007 and the Hayward Fire Department's agreement to be the administering agency, the Staff will have all of the information necessary to complete the Staff Assessment on this technical area.

#### **IV. Schedule**

As an Alternative to the Staff's proposed schedule, the Applicant proposes the schedule set forth below.

(1) The Applicant recommends that the Staff promptly issue its Assessment on all

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<sup>7</sup> *Id.* at 3.

technical areas that are “ready for publication” and that the Committee process these technical areas into the record, without awaiting the Staff Assessment on Air Quality. The uncontested technical areas represent 80% or more of the technical areas. If these technical areas are processed now by the Committee, the Committee can begin preparation of substantial portions of the Proposed Decision without awaiting the issuance of the FDOC. Then, once the FDOC is issued, the only remaining issue will be Air Quality and this issue can be addressed much more quickly if it is the only outstanding issue to be resolved.

The Staff Schedule proposes to delay issuance of the Assessment on Phase I technical areas until March 30, 2007. This is more than 5 weeks after the date previously proposed by Staff. Because most technical areas are ready for publication, there should be no reason why the Staff Assessment on all technical areas except for Air Quality cannot be issued by March 15.

(2) In its revised schedule, the Staff proposes that its Assessment on Air Quality be filed after issuance of the FDOC. The Applicant recommends that the Staff Assessment on Air Quality be issued during the 30 day public comment period following issuance of the PDOC, so that the BAAQMD and the public may be informed of any concerns or questions that the Staff may have with the PDOC. If the District is informed of the Staff’s concerns in a timely manner, the District can address these concerns in the FDOC. In most cases, there are few if any substantive differences between the PDOC and the FDOC. In the unlikely event that the FDOC is different from the PDOC, the Staff should be permitted to supplement its Assessment on Air Quality after issuance of the FDOC.

There is clear precedent for a schedule that requires the Staff to file its Assessment after the District’s preliminary determination but before the District’s final determination. As shown below (emphasis added), the suggested 6-month schedule published by the Siting Division

provides for exactly this sequence of PDOC – Staff Assessment – FDOC – Addendum (or Errata) to Staff Assessment.

## **6-Month Energy Facility Licensing Process<sup>8</sup>**

### **Example 6-Month Schedule**

<b>Activity</b>	<b>Day</b>
Applicant files Application for Certification (AFC)	-45
Executive Director's recommendation on data adequacy	-15
Decision on data adequacy at the business meeting	0
Staff files data requests	10
Staff files Issue Identification Report	35
Applicant provides data responses	40
Information hearing and site visit	45
Data response and issue resolution workshop	50
<b>Local, state and federal agency draft determinations</b>	<b>60</b>
<b>Staff Assessment filed</b>	<b>75</b>
<b>Staff Assessment workshop</b>	<b>85</b>
<b>Local, state and federal agency final determinations</b>	<b>100</b>
<b>Addendum to Staff Assessment filed</b>	<b>120</b>
Evidentiary hearings	130
Committee files Proposed Decision (20 days after hearing)	150
Hearing on the Proposed Decision	160
Close of Public Comments on the Proposed Decision (15 days after the filing of the Proposed Decision)	165
Commission Decision	180

(3) Under the Committee's adopted schedule, there is a 14 day period for agency comments on the Staff Assessment and a 21 day period after receipt of comments for the Staff to issue its errata. Under the Staff's proposed revisions to the Schedule, there is a 30 period for agency comment on the Assessment and a 115 day period after receipt of comments for Staff to issue its errata. Assuming that evidentiary hearings cannot be held until after the errata is filed, the Staff's schedule would push a final decision on this Amendment into the fall.

<sup>8</sup> [http://www.energy.ca.gov/sitingcases/6-MONTH\\_12-MONTH\\_SPPE\\_PROCESS.PDF](http://www.energy.ca.gov/sitingcases/6-MONTH_12-MONTH_SPPE_PROCESS.PDF)

The Applicant's schedule would preserve the same time periods for agency comment and preparation of the errata and would allow the Committee to conduct evidentiary hearings on all technical areas except Air Quality this spring, rather than next fall.

(4) The schedule originally proposed by the Staff in this proceeding targeted a final Commission decision on this Amendment by June 11, 2007. As the Applicant explained at the Informational Hearing a decision by the Commission in June 2007 is a critical milestone in achieving commercial operation by June 2010. A timely decision by the Commission on the Amendment is necessary for the RCEC project to obtain financing and for PG&E to apply for a CPCN at the California Public Utilities Commission.

The Applicant has cooperated fully with the Staff and has responded to all Staff requests in a timely manner. Most technical areas have no disputed issues and are ready for publication. The Air District will issue its PDOC on or before April 2, 2007. Given these facts, there is simply no justification for the lengthy delays proposed by the Staff in its revised schedule. The Applicant urges the Committee to adopt the schedule set forth below.

March 2, 2007

Respectfully submitted,

ELLISON, SCHNEIDER & HARRIS L.L.P.

By Gregory L. Wheatland (13)

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Jeffery D. Harris  
2015 H Street  
Sacramento, California 95814-3109  
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Attorneys for Calpine Corporation



***Applicant's Proposed Schedule***

<b>Activity</b>	<b>Day</b>	<b>Date</b>
Petition filed by project owner	0	Nov 17, 2006
Committee assigned to oversee petition process	0	Nov 17, 2006
Staff files Issues Identification Report	24	Dec 11, 2006
Committee holds information hearing and site visit	28	Dec 15, 2006
Staff files data requests	33	Dec 20, 2006
Project owner provides data responses	59	Jan 15, 2007
Local, state, and federal agency preliminary determinations and comments from all agencies except BAAQMD	61	Jan 17, 2007
Possible Staff data response workshop (Not Required)	66	Jan 22, 2007
<b>Staff Assessment Part I filed on all issues except air quality</b>	<b>118</b>	<b>Mar 15, 2007</b>
<b>BAAQMD issues PDOC</b>	<b>135</b>	<b>Apr 2, 2007</b>
<b>Agency comment due on Staff Assessment Part 1</b>	<b>135</b>	<b>Apr 2, 2007<sup>9</sup></b>
<b>Staff issues Errata on Part 1 issues</b>	<b>156</b>	<b>Apr 23, 2007<sup>10</sup></b>
<b>Staff Assessment Workshop on Part 1 and Discussion of PDOC</b>	<b>158</b>	<b>Apr 24, 2007</b>
<b>Staff issues Assessment on Air Quality</b>	<b>163</b>	<b>Apr 30, 2007<sup>11</sup></b>
<b>Prehearing Conference on Part 1</b>		<b>May TBD<sup>12</sup></b>
<b>Evidentiary Hearing on Part 1 (if necessary)</b>		<b>May TBD</b>
<b>BAAQMD Issues FDOC (tentative)</b>		<b>May 16 -Jun 01, 2007</b>
<b>Staff issues errata to Air Quality Assessment 15 days after Issuance of FDOC (if necessary)</b>		<b>Jun 1 -15, 2007<sup>13</sup></b>
<b>Evidentiary hearing on Air Quality (if necessary)</b>		<b>Jun TBD</b>
<b>Committee files Proposed Decision on Amendment</b>		<b>TBD</b>
<b>Commission decision</b>		<b>TBD</b>

<sup>9</sup> 14 days after SA filed, per Committee Schedule for the RCEC Amendment.

<sup>10</sup> 21 days after agency comment deadline per Committee Schedule.

<sup>11</sup> On the last day of the 30 day public comment period on the PDOC.

<sup>12</sup> 14+ days following filing of errata per Committee Schedule

<sup>13</sup> 15 days after issuance of the FDOC

Exhibit 28

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*Supplemental Filing*

**Response to Data Requests  
16 and 55 through 72**

In support of the

**Petition for Amendment No. 1**

for the

**Russell City Energy Center**

Hayward, California  
(01-AFC-7C)

Submitted to the:  
**California Energy Commission**

Submitted by:  
**Russell City Energy Company, LLC**

With Technical Assistance by:



Sacramento, California  
March 2007

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# Introduction

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Attached are Russell City Energy Company, LLC's responses to California Energy Commission (CEC) Staff data requests numbers 16 and 55 through 72 for the Russell City Energy Center (RCEC) Petition for Amendment No. 1 (01-AFC-7C). The CEC Staff served Data Requests 55 through 72 on March 8, 2007, as part of the discovery process for the RCEC amendment petition. The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as CEC Staff presented them and are keyed to the Data Request numbers (1 through 72). New or revised graphics or tables are numbered in reference to the Data Request number. For example, the first table used in response to Data Request 15 would be numbered Table DR15-1. The first figure used in response to Data Request 28 would be Figure DR28-1, and so on.

Additional tables, figures, or documents submitted in response to a data request (supporting data, stand-alone documents such as plans, folding graphics, etc.) are found at the end of a discipline-specific section and are not sequentially page-numbered consistently with the remainder of the document, though they may have their own internal page numbering system.

## **Air Quality**

Data Request Response 16

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# Air Quality (16)

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## Cumulative Impacts Analysis

16. Please provide the cumulative impacts analysis or identify the timeline for completion and submittal of the cumulative impacts analysis.

**Response:** Localized impacts from the Russell City Energy Center (RCEC) could result from emissions of carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), directly-emitted particulate matter less than 10 microns in diameter (PM<sub>10</sub>), and directly-emitted particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>). A dispersion modeling analysis of potential cumulative air quality impacts was performed for SO<sub>2</sub>, CO, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. A cumulative multi-source modeling analysis was performed for the proposed RCEC emission sources, combined with emissions for the Eastshore Energy Center (Eastshore), a proposal to construct a new power plant energy near Industrial Boulevard in Hayward, California, approximately 0.5 miles east of the RCEC site. The BAAQMD has been contacted in order to provide information on other potential sources located within six (6) miles of RCEC. At this time, it is expected that if other sources exist within the six mile radius of RCEC, these sources would be insignificant. These sources will be included in a updated cumulative impact modeling assessment when the BAAQMD makes information about them available.

In evaluating the potential cumulative localized impacts, the proposed facility is modeled in conjunction with the impacts of existing facilities and facilities not yet in operation but that are reasonably foreseeable. At this time, modeling data for emission sources have not been finalized for projects other than Eastshore and RCEC. Projects that exist and have been in operation are reflected in the ambient air quality data that have been used to represent background concentrations; consequently, no further analysis of the emissions from this category of facilities will be performed. The cumulative multisource modeling analysis adds the modeled impacts of selected facilities to the maximum measured background air quality levels, thus ensuring that existing and proposed projects are taken into account.

Based on the results of the air quality modeling analyses described in the Amendment (Section 3.1, Air Quality), "significant" air quality impacts, as that term is defined in federal air quality modeling guidelines, have generally not been shown to occur for the RCEC. Significance is defined as the concentration levels at which a project impact could be measured. Typically, if the project's impacts do not exceed the significance levels, no cumulative impacts would be expected to occur, and no further analysis would be required under federal regulations. Notwithstanding this fact, a potential impact area in which cumulative localized impacts could be expected to occur has *typically* been identified as an area within a radius of 6 miles around the proposed site. Sources that are proposed but not yet operational located within this area (or within a search area with a radius of 6 miles beyond the project's significant impact area) are modeled in a multi-source modeling analysis. As described above, a multi-source modeling analysis has been prepared for proposed emissions from the RCEC and Eastshore facilities, which when combined, are expected to be the only two predominant sources in the area.

Given the potentially wide geographic area over which the dispersion modeling analysis may be performed, the ISCST3 model was used to evaluate cumulative localized air quality impacts for all pollutants other than the 1-hour nitrogen dioxide (NO<sub>2</sub>) concentrations. For 1-hour NO<sub>2</sub> concentrations, impacts were evaluated with the ISCOLM model as was done for the facility-only analyses. The detailed modeling procedures, model options, and meteorological data used in the cumulative impacts dispersion analysis were the same as those used for the proposed facility as described in the AFC Air Quality section. In addition to the receptor grids used in the original RCEC modeling analysis, the 10-meter spaced downwash and fence-line receptor grids from the Eastshore modeling analysis were included. Since 24-hour PM<sub>2.5</sub> maximum multi-source impacts were predicted to occur in the coarse/intermediate grids, an additional 10-meter-spaced refined receptor grid was modeled for this pollutant and averaging time.

The dispersion modeling analysis of cumulative localized air quality impacts for the proposed project was evaluated in combination with the Eastshore Energy Center and air quality levels attributable to existing emission sources, and the impacts were compared to state or federal air quality standards to determine significance. The maximum modeled concentrations were used to demonstrate compliance with California ambient air quality standards (CAAQS) and Federal (USEPA) National ambient air quality standards (NAAQS).

Supporting information used in the analysis included the following:

- Each source's respective coordinate locations
- Stack parameters for sources included in the cumulative air quality impacts dispersion modeling analysis
- Output files for the dispersion modeling analysis

Stack locations and building dimensions used for downwash considerations were the same as the facility modeling analyses for both RCEC and Eastshore. Worst-case source conditions defined by the screening analyses in the facility modeling analyses for both RCEC and Eastshore were used to define stack conditions analyzed. For CO, worst-case impacts were shown in the RCEC modeling analyses to occur for RCEC start-up conditions (RCEC fire pump assumed not to run concurrently). All of these conditions are shown in Tables DR16-1 and DR16-2.

**TABLE DR16-1**  
Stack Parameters and Emission Rates for RCEC Facility\*

	Stack Height (meter)	Stack Diam. (meter)	Stack Temp (deg K)	Exhaust Velocity (m/s)	Emission Rates (g/s) for each turbine/HRSG and cooling tower cell			
					NOx	SO <sub>2</sub>	CO	PM <sub>10</sub> /PM <sub>2.5</sub>
<b>Averaging Period: 1-hour</b>								
Turbines/HRSGs	44.196	5.4864	355.39	22.175	2.0379	0.7812	169.946	N/A
Fire Pump Diesel Engine	4.572	0.1524	665.37	53.340	0.3558	3.942E-4	N/A	N/A
<b>Averaging Period: 3-hours</b>								
Turbines/HRSGs	44.196	5.4864	355.39	22.175	N/A	0.7812	N/A	N/A
Fire Pump Diesel Engine	4.572	0.1524	665.37	53.340	N/A	1.314E-4	N/A	N/A
<b>Averaging Period: 8-hours</b>								
Turbines/HRSGs	44.196	5.4864	355.39	22.175	N/A	N/A	80.2353	N/A

**TABLE DR16-1**  
Stack Parameters and Emission Rates for RCEC Facility\*

	Stack Height (meter)	Stack Diam. (meter)	Stack Temp (deg K)	Exhaust Velocity (m/s)	Emission Rates (g/s) for each turbine/HRSG and cooling tower cell			
					NO <sub>x</sub>	SO <sub>2</sub>	CO	PM <sub>10</sub> /PM <sub>2.5</sub>
<b>Averaging Period: 24 hours</b>								
Turbines/HRSGs	44.196	5.4864	350.68	14.075	N/A	0.4284	N/A	1.1340
Fire Pump Diesel Engine	4.572	0.1524	665.37	53.340	N/A	1.640E-5	N/A	4.167E-4
Cooling Tower	18.288	9.7536	298.17	10.308	N/A	N/A	N/A	0.0396
<b>Averaging Period: Annual</b>								
Turbines/HRSGs	44.196	5.4864	356.83	21.655	1.9350	0.1755	N/A	1.0742
Fire Pump Diesel Engine	4.572	0.1524	665.37	53.340	2.112E-3	2.339E-6	N/A	5.936E-5
Cooling Tower	18.288	9.7536	300.27	10.308	N/A	N/A	N/A	0.0387

\*Annual averaging periods include startup/shutdown emissions, where applicable.  
deg K = degree Kelvin, g/s = grams per second, m/s = meters per second

**TABLE DR16-2**  
Stack Parameters and Emission Rates for Eastshore Facility\*

	Stack Height (m)	Stack Diam (m)	Stack Temp (deg K)	Exhaust Velocity (m/s)	Emission Rates (g/s) for each Engine and Diesel Emer. Generator			
					NO <sub>x</sub>	SO <sub>2</sub>	CO	PM <sub>10</sub> /PM <sub>2.5</sub>
<b>Averaging Period: 1-hour</b>								
Engines (14)	21.336	1.208	628.71	22.42	1.2424	0.03024	1.8698	N/A
Black Start Diesel Engine	10.0	0.1778	735.37	41.02	0.226	4.79E-4	0.0270	N/A
<b>Averaging Period: 3-hours</b>								
Engines (14)	21.336	1.208	628.71	22.42	N/A	0.03024	N/A	N/A
Black Start Diesel Engine	10.0	0.1778	735.37	41.02	N/A	1.60E-4	N/A	N/A
<b>Averaging Period: 8-hours</b>								
Engines (14)	21.336	1.208	628.71	22.42	N/A	N/A	1.8698	N/A
Black Start Diesel Engine	10.0	0.1778	735.37	41.02	N/A	N/A	3.38E-3	N/A
<b>Averaging Period: 24 hours</b>								
Engines (14)	21.336	1.208	628.71	22.42	N/A	0.03024	N/A	0.284655
Black Start Diesel Engine	10.0	0.1778	735.37	41.02	N/A	2.0E-5	N/A	5.60E-4
<b>Averaging Period: Annual</b>								
Engines (14)	21.336	1.208	641.48	22.27	0.11535	1.395E-2	N/A	0.1474
Black Start Diesel Engine	10.0	0.1778	735.37	41.02	7.728E-4	1.640E-6	N/A	4.596E-5

\*Annual averaging periods include startup/shutdown emissions, where applicable.  
deg K = degree Kelvin, g/s = grams per second, m/s = meters per second

The proposed project was modeled with these sources in the cumulative multisource analysis to determine maximum concentrations. The maximum background concentrations were then added to this total and compared to CAAQS and NAAQS. Table DR16-3 below summarizes the results of the cumulative modeling analysis.



TABLE DR16-3  
Cumulative Impacts Modeling Results ( $\mu\text{g}/\text{m}^3$ )

Pollutant	Averaging Time	Maximum Multisource Concentration ( $\mu\text{g}/\text{m}^3$ )	Background ( $\mu\text{g}/\text{m}^3$ )	Total Ambient Concentration ( $\mu\text{g}/\text{m}^3$ )	State Standard ( $\mu\text{g}/\text{m}^3$ )	Federal Standard ( $\mu\text{g}/\text{m}^3$ )
NO <sub>2</sub>	1-hour	226.83	143.0	369.83	470	-
	Annual	0.64	32.0	32.64	-	100
SO <sub>2</sub>	1-hour	7.33	102.2	109.53	655	-
	3-hour	6.61	49.4	56.01	1300	1300
	24-hour	4.87	23.5	28.37	105	365
	Annual	0.075	8.0	8.075	-	80
CO	1-hour	1199.88	3680.0	4879.88	23,000	40,000
	8-hour	222.63	2178.0	2400.63	10,000	10,000
PM <sub>10</sub>	24-hour	8.29	51.7	59.99	50	150
	Annual	0.81	18.1	18.91	20	50
PM <sub>2.5</sub>	24-hour	4.36	37	41.36	-	65
	Annual	0.81	9.4	10.21	12	15

Modeled and Background PM<sub>2.5</sub> 24-hour averages, for comparison to the federal standard, are the maximum 3-year average of the annual 98<sup>th</sup> percentile 24-hour concentrations (i.e., for modeled impacts equal to the 8<sup>th</sup> highest concentration at each receptor).

As can be seen, maximum modeled concentrations are less than the CAAQS and NAAQS for all pollutants and all averaging times. Maximum ambient (modeled plus background) concentrations are greater than the CAAQS for 24-hour and annual PM<sub>10</sub>. Maximum ambient (modeled plus background concentrations) are greater than the CAAQS and NAAQS for annual PM<sub>2.5</sub>. Maximum ambient (modeled plus background) concentrations for all other pollutants and averaging times are less than the CAAQS and NAAQS.

Maximum ambient (modeled plus background) concentrations exceed the applicable PM<sub>10</sub> and PM<sub>2.5</sub> CAAQS/NAAQS because the background concentrations already are very nearly equal to or exceed the applicable standards (e.g., there were no modeled PM<sub>10</sub> or PM<sub>2.5</sub> concentrations without background greater than the CAAQS or NAAQS). The project is located in a state non-attainment area for PM<sub>2.5</sub> and PM<sub>10</sub>. Since the modeled multisource impacts by themselves, without considering background, are less than the PM<sub>10</sub> or PM<sub>2.5</sub> ambient air quality standards, the projects do not cause or contribute to the regional non-attainment status because the projects are located in a state non-attainment areas and will mitigate the modeled exceedances to a level of insignificance.

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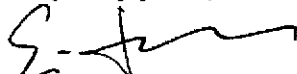
<b>DOCKET</b> <b>01-AFC-7</b>	
DATE	MAR 02 2007
RECD.	MAR 02 2007

**Re: 01-AFC-7C – Applicant’s Status Report #1**

Dear Docket Clerk,

Attached please find the Applicant’s Status Report #1, submitted in response to the Committee’s order of December 21, 2006.

Very truly yours,



Eric Janssen

Legal Assistant to Gregory L. Wheatland

Ellison, Schneider & Harris L.L.P.  
Attorneys for Calpine Corporation

Cc: Hearing Officer Paul Kramer, Jr.  
Commissioner Geesman, Presiding Member Siting Committee  
Commissioner Byron, Associate Member Siting Committee  
Ms. Jeri Zene Scott, Compliance Project Manager

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*Supplemental Filing*

Response to  
**Data Requests 73 through 96 and  
Workshop Queries 1 through 3**

In support of the

**Petition for Amendment No. 1**

for the

**Russell City Energy Center**

Hayward, California

(01-AFC-7C)

Submitted to the:  
**California Energy Commission**

Submitted by:  
**Russell City Energy Company, LLC**

With Technical Assistance by:

Sacramento, California

April 2007

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# Introduction

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Attached are Russell City Energy Company, LLC's (RCEC LLC's) responses to California Energy Commission (CEC) Staff Data Requests 73 through 96 for the Russell City Energy Center (RCEC) Petition for Amendment No. 1 (01-AFC-7C). The CEC Staff served Data Requests 73 through 81 on March 30, 2007, as part of the discovery process for the RCEC amendment petition. Although these Data Requests were numbered 71 through 79, Staff had previously issued Data Requests numbered 71 and 72 as part of the March 8, 2007 Data Request package. We have therefore renumbered this series as 73 through 81 (with the numbers as issued in parentheses). On April 10, Staff issued additional Data Requests, numbered 83 through 96. These Data Requests have not been listed by discipline, but are grouped under the heading "Reconductoring Project Impact Analysis." They are included in this response package under that heading, as well. Also included in this submittal is supplemental information in response to Data Requests 16, 57, and 62, for which responses were previously provided.

In addition, at the Data Request Response and Staff Assessment Workshop held on April 9, 2007, Staff informally asked for additional information regarding the thermal plume modeling that RCEC provided on March 23, 2007 in the response to Data Request 66. These information requests are called workshop queries (WSQ) and are assigned sequential numbers (WSQ-1 through WSQ-3).

The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as CEC Staff presented them and are keyed to the Data Request or WSQ numbers. New or revised graphics or tables are numbered in reference to the Data Request number. For example, the first table used in response to Data Request 15 would be numbered Table DR15-1. The first figure used in response to Data Request 28 would be Figure DR28-1, and so on.

Additional tables, figures, or documents submitted in response to a data request (supporting data, stand-alone documents such as plans, folding graphics, etc.) are found at the end of a discipline-specific section and are not sequentially page-numbered consistently with the remainder of the document, though they may have their own internal page numbering system.

## **Air Quality**

Data Request Responses 16S and 73-81

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# Air Quality (16S, 73-81)

## Cumulative impacts analysis (supplemental)

16S. Please provide the cumulative impacts analysis or identify the timeline for completion and submittal of the cumulative impacts analysis.

**Response:** In a previous response to Data Request #16, RCEC, LLC provided a cumulative air impacts analysis of the RCEC in combination with the Eastshore Energy Center, the largest expected new source of air emissions in the RCEC project area. Because it is customary to conduct a cumulative air impacts analysis that takes into consideration all potential new or recently permitted sources (the emissions of which have not been taken into consideration in the baseline air monitoring data), the following is a supplement to the response to Data Request 16 that considers the other sources in addition to Eastshore. These sources were not considered previously because the applicable data had not yet been made available by the Bay Area Air Quality Management District (BAAQMD).

Since the previous submittal, the BAAQMD has provided an emissions inventory of sources located within six (6) miles of RCEC. These additional sources, listed below, were included in an updated cumulative impact modeling assessment. As expected, these additional sources within a six-mile radius of RCEC did not significantly change the results provided previously (Tables DR16S-1 and -2).

TABLE DR16S-1  
Modeled Stack Parameters for Proposed Sources provided by BAAQMD\*

Facility#-Source	Stack Height (meter)	Stack Diam. (meter)	Stack Temp (deg K)	Exhaust Velocity (m/s)	Stack Coordinates (meters)-NAD27		
					X	Y	Z**
#00698-Georgia Pacific Gypsum Emer. Generator	2.134	0.500	750.37	46.94	572807	4173361	7.8
#16440-Hayward Public Works Emer. Generator***	5.486	0.500	763.71	46.94	579654	4163912	3.1
#16451- Hayward Public Works Emer. Gen	2.591	0.250	740.37	56.29	575910	4168060	2.4
#17037-Elder Care Alliance Emer. Generator	2.286	0.333	844.26	49.63	585526	4160731	12.2
#17548-Alameda County Nat. Gas Boiler****	6.096	1.674	422.04	4.96	577886	4174623	129.9
#17553-Rohm & Haas Pyrolysis Furnace	7.925	1.167	1033.15	6.42	577238	4165215	3.4
#17553-Rohm & Haas Reg. Thermal Oxidizer	9.144	2.498	377.59	4.15	577238	4165215	3.4
#17621-Skywest Emer. Gen	11.582	1.333	733.15	47.03	578142	4168365	11.6
#18189-Astra Zeneca Emer. Gen	2.134	0.500	710.37	27.19	577689	4166266	7.8

\*Those facilities with emissions of pollutants other than VOC only.

\*\*Source elevations taken from nearest point in USGS DEM datafiles with 10-meter spacing.

\*\*\*Exit velocity conservatively revised to match previous similar source (BAAQMD velocity too high).

\*\*\*\*Facility emissions given for three sources (two identical boilers and one emer.gen). All emissions modeled from one of the two boilers. Stack flowrate and temperature revised to reflect available information for similar sized boilers (BAAQMD values were unrealistic).

**TABLE DR16S-2**  
**Modeled Emissions for Proposed Sources provided by BAAQMD**

Facility#-Source	Emission Rates (g/s)			
	NOx	SO <sub>2</sub>	CO	PM <sub>10</sub> /PM <sub>2.5</sub>
#00698-Georgia Pacific Gypsum Emer.Gen	0.001927	0.000086	0.000777	0.000058
#16440-Hayward Public Works Emer.Gen	0.001093	0.000058	0.000173	0.000029
#16451- Hayward Public Works Emer.Gen	0.000748	0.000029	0.000058	0.000029
#17037-Elder Care Alliance Emer.Gen	0.001093	0.000058	0.000173	0.000029
#17548-Alameda County Nat.Gas Boiler	0.080001	0.001985	0.158421	0.010701
#17553-Rohm & Haas Pyrolysis Furnace	0.004603	0.000288	0.008371	0.002273
#17553-Rohm & Haas Reg.Thermal Oxidizer	0.041137	0.000086	0.003279	N/A
#17621-Skywest Emer.Gen	0.019878	0.000633	0.002359	0.000403
#18189-Astra Zeneca Emer.Gen	0.000863	N/A	0.000432	0.000029

Table DR16S-3 summarizes the results of the cumulative modeling analysis with the Eastshore project and the BAAQMD-provided inventory. These concentrations are very similar to the concentrations provided previously to the CEC.

**TABLE DR16S-3**  
**Cumulative Impacts Modeling Results (µg/m<sup>3</sup>)**

Pollutant	Averaging Time	Maximum Multisource Concentration (µg/m <sup>3</sup> )	Background (µg/m <sup>3</sup> )	Total Ambient Concentration (µg/m <sup>3</sup> )	State Standard (µg/m <sup>3</sup> )	Federal Standard (µg/m <sup>3</sup> )
NO <sub>2</sub>	1-hour	226.83	143.0	369.83	470	-
	Annual	1.12	32.0	33.12	-	100
SO <sub>2</sub>	1-hour	7.33	102.2	109.53	655	-
	3-hour	6.61	49.4	56.01	1300	1300
	24-hour	1.10	23.5	24.60	105	365
	Annual	0.075	8.0	8.075	-	80
CO	1-hour	1199.94	3680.0	4879.94	23,000	40,000
	8-hour	222.66	2178.0	2400.66	10,000	10,000
PM <sub>10</sub>	24-hour	8.29	51.7	59.99	50	150
	Annual	0.81	18.1	18.91	20	50
PM <sub>2.5</sub>	24-hour	4.36	37	41.36	-	65
	Annual	0.81	9.4	10.21	12	15

Modeled and Background PM<sub>2.5</sub> 24-hour averages, for comparison to the federal standard, are the maximum 3-year average of the annual 96<sup>th</sup> percentile 24-hour concentrations (i.e., for modeled impacts equal to the 8<sup>th</sup> highest concentration at each receptor).

As can be seen, maximum modeled concentrations are less than the CAAQS and NAAQS for all pollutants and all averaging times. Maximum total ambient (modeled plus background) concentrations are greater than the CAAQS for 24-hour PM<sub>10</sub>. Maximum total ambient (modeled plus background) concentrations for all other pollutants and averaging times are less than the CAAQS and NAAQS.

Maximum total ambient (modeled plus background) concentrations exceed the applicable PM<sub>10</sub> CAAQS because the background concentrations already exceed the applicable standards (e.g., there were no modeled PM<sub>10</sub> concentrations without background greater than the CAAQS). The project is located in a state non-attainment area for PM<sub>10</sub>. Since the



modeled multisource impacts by themselves, without considering background, are less than the PM<sub>10</sub> ambient air quality standards, the projects do not cause or contribute to the regional non-attainment status because the projects are located in a state non-attainment area and project emissions will be mitigated for the modeled exceedances to a level of insignificance.

### Emission calculations

73 (71) Please provide actual calculations, assumptions, and methods used to estimate the facility's daily and annual emissions of NO<sub>x</sub>, VOC, SO<sub>x</sub>, CO, and PM<sub>10</sub>/PM<sub>2.5</sub> that are shown in Tables 3.1-3 through 3.1-5.

**Response:** The response is provided below for each emission category.

**Cooling tower**—The facility's cooling tower emissions are based on the standard cooling tower emission equation as follows:

$$(TDS \text{ mg/l})(gpm)(60 \text{ mins/hr})(8.33 \text{ lbs/gal})(\text{drift fraction})(0.000001)$$

These calculations and assumptions are presented in Appendix Table 3.1A-8.

**Fire pump engine**—The emissions from the proposed fire pump engine as presented in Table 3.1-4 are calculated based upon the emissions factors in terms of g/hp-hr, the rated hp of the engine, and the total proposed hours of runtime per day and per year, and the conversion factor for grams to pounds.

$$((EF \text{ g/hp-hr})(HP)(\text{runtime}))/453.59$$

These final calculations and assumptions are presented in Appendix Table 3.1A-10.

**Ammonia slip**—The ammonia slip emissions are calculated based upon the standard emissions equation as follows:

$$D6 \cdot D7 / D8 \cdot (14.0067 + 1.00797 \cdot 3) / 10^6 \cdot (0.209 - E9 / (1 - E10)) / (0.209 - 0.15) \cdot (1 - E10)$$

where: D6 = NH<sub>3</sub> limit, ppm @15%O<sub>2</sub>

D7 = exhaust rate, lbs/hr

D8 = exhaust gas molecular weight

E9 = mole fraction O<sub>2</sub> in exhaust

E10 = mole fraction H<sub>2</sub>O in exhaust

The calculations and assumptions are presented in Appendix Table 3.1A-1.

**Turbine and HRSG**—The turbine and HRSG emissions are calculated as follows:

- a. Total heat rate of each turbine/HRSG set is 2238.8 MMbtu/hr.
- b. Total heat rate of each turbine/HRSG set multiplied by the EFs (lbs/MMbtu) per Table 3.1-3 yields the normal operational (non-startup) hourly emissions
- c. The maximum daily emissions per turbine/HRSG set are the normal daily operational hours multiplied by the normal operational hourly emissions, plus the emissions from any required startups (worst case cold start) and shutdowns derived

from Table 3.1-6. Thus, the worst-case day for NO<sub>x</sub>, POC, and CO assume 18 hours of base load with duct firing plus one cold start lasting 6 hours. For SO<sub>2</sub> and PM<sub>10</sub>, the worst-case day is based upon 24-hour of base load operation with duct firing.

- d. The annual emissions per turbine/HRSG are the total normal operational emissions plus the startup and shutdown emissions (based upon the total hours of startup and shutdown per year and the types of startups expected, i.e., cold, warm, or hot).
- e. The total hourly emissions from all turbines/HRSGs are the values calculated in a. through d. above multiplied by the number of turbine/HRSG sets.

### VOC emission rates

74 (72) *Table 3.1-3 lists the proposed maximum permitted VOC emissions for each turbine as 2.82 lbs/hour, which corresponds to a VOC stack concentration of 2 ppm@15% O<sub>2</sub> (Data Response #6, pp. 10). Table 3.1A-4 (in the appendix) shows each turbine's hourly VOC emissions are equal to 5.6 lbs/hour, but still at a 2 ppm VOC concentration. Please explain the differences between the two emission rates (i.e., the lbs/hr values).*

**Response:** The 5.6 lbs/hr value is an intermediate, uncontrolled value. The "permitted stack emissions" values as delineated on page 4 of Table 3.1A-4 are the correct values. The 2.82 lbs/hr VOC emissions estimate is a controlled value based upon the assumption that the proposed CO oxidation catalyst reduces VOCs by approximately 50 percent. The VOC emission rate of 2.82 lbs/hr/turbine is equivalent to the proposed VOC BACT limit for VOC at 2.0 ppm (@15% O<sub>2</sub>).

### NO<sub>x</sub> and VOC emission reduction credits

75 (73) *Please identify additional NO<sub>x</sub> and VOC emission reduction credits to fully mitigate the project's daily ozone precursor impacts.*

**Response:** No additional NO<sub>x</sub> and POC emission reduction credits are proposed. BAAQMD regulations 2-2-215, 302, and 303 require RCEC to provide emission offsets, on a tons per year basis, when emissions exceed specified levels on a pollutant-specific basis. Regulation 2-2-302 requires NO<sub>x</sub> and POC to be offset because both NO<sub>x</sub> and POC contribute to Bay Area ozone levels. Thus, the proposed offsets of 154.8 tons per year of NO<sub>x</sub> and 27.8 tons per year of POC will fully mitigate the project's daily ozone precursor impacts.

### Mitigation measures

76 (74) *If additional emission reduction credits are not being considered, please identify other mitigation measures to reduce the daily emission liability to lessen the facility's impacts on the environment. These can be new technologies that are designed to reduce the start-ups or start-up times (e.g., Rapid Start Process by GE or Benson Once-Through boiler design by Westinghouse). Alternatively, conditions on scheduling of electrical delivery so that simultaneous start-up of both turbines, or excessive start-up events during ozone season can be avoided could be used to reduce daily emissions and impacts.*

**Response:** The ability to start both turbines at the same time on a daily basis was included in the air quality dispersion modeling analysis, which demonstrated that no impacts would

occur to ambient air quality standards. Further, the project's emissions of ozone-producing compounds, specifically NO<sub>x</sub> and POC, will be mitigated to levels of insignificance through the use of emission reduction credits.

The Applicant will not control the scheduling of electrical delivery and thus will also have no control over the simultaneous start-up of both turbines, or the total number of start-up events.

### Start-up times

77 (75) *This facility employs the Westinghouse 501 FD turbines, which are the same turbines employed in the Sutter Energy Center that are currently owned and operated by Calpine. According to available source test results, these turbines, even without improvement to reduce start-up times, have met much lower start-up and shut down emission limits than are requested in this amendment request. Please provide explanations of why such high start-up and shut down emission limits are being proposed.*

**Response:** The proposed start-up emissions are based upon potential vendor-supplied emissions data and on operating experience with other projects owned by Calpine. Source test results represent instantaneous actual emissions and are used to demonstrate compliance with the permitted potential emission limits. While actual emissions are typically lower than potential emission limits, actual data will change over time as the air pollution control devices age as well as the turbine(s). In addition, emissions during a turbine start can vary from start to start making the use of actual data difficult to use as potential emission limits.

The potential emissions during a turbine start were modeled and demonstrated compliance with the ambient air quality standards. The emission reduction credits are also based upon the potential emissions during a start. Thus, the turbine starts will not cause an exceedance of the ambient air quality standards and the projects emissions will be mitigated to levels of insignificance.

### ERC schedules

78 (76) *Please provide an approximate schedule when SO<sub>x</sub> and PM<sub>10</sub>/PM<sub>2.5</sub> emission reduction credits, which will mitigate the project's emission impacts, will be identified and then provided.*

**Response:** The RCEC project license identifies a schedule for PM<sub>10</sub>/PM<sub>2.5</sub> emission reduction credits through the use of a fireplace retrofit program. To date, no agreement with CEC Staff has been made with regards to using SO<sub>x</sub> for PM<sub>10</sub>/PM<sub>2.5</sub>. Thus, no updated schedule is proposed at this time for SO<sub>x</sub>.

### PM<sub>10</sub>/PM<sub>2.5</sub> mitigation

79 (77) *Table 3.1-5 identifies that the project PM<sub>10</sub>/PM<sub>2.5</sub> emissions would be limited to 86.8 tons/yr, and Calpine has proposed to only mitigate the project PM<sub>10</sub>, PM<sub>2.5</sub> and SO<sub>x</sub> emissions during the fall and winter months. Thus the proposed revised condition AQ-58 only identifies 43.4 tons of PM<sub>10</sub>/PM<sub>2.5</sub> liabilities (fall and winter, or half a year) to be mitigated. The January 2007 Data Response re-stated that Calpine would only provide*

*50 percent of the project's annual PM<sub>10</sub>/PM<sub>2.5</sub> emissions liability. For any one day, the project can emit 500 lbs of PM<sub>10</sub>/PM<sub>2.5</sub> and the committed emission reduction credits for mitigation would only be approximately 238 lbs/day. Thus, for any one day more than 50 percent of the project daily emissions are not mitigated. Please identify additional emission reduction credits for PM<sub>10</sub>/PM<sub>2.5</sub>.*

**Response:** The Applicant is proposing to offset the project's PM<sub>10</sub>/PM<sub>2.5</sub> emissions during the fall and winter months by providing mitigation for up to 43.4 tons of particulate matter. The PM<sub>10</sub>/PM<sub>2.5</sub> emissions would be mitigated during the traditional fall and winter PM<sub>10</sub>/PM<sub>2.5</sub> non-attainment season(s). These proposed offsets are consistent with the currently approved mitigation plan that would provide the same level of mitigation (476 lbs/day of PM<sub>10</sub>/PM<sub>2.5</sub> on a seasonal basis, or 238 lbs/day on an annual basis (43.4 tons \* 2000 lbs/ton / 182.5 days = 476 lbs/day). While the project could theoretically emit potential PM<sub>10</sub>/PM<sub>2.5</sub> emissions of up to 500 pounds per day, the actual emissions of PM<sub>10</sub>/PM<sub>2.5</sub> from the project are expected to be less, based upon source test data from similar power plants. Source data from recently-tested Calpine power plants have hourly PM<sub>10</sub>/PM<sub>2.5</sub> emission rates in the range of 5 to 7 lb/hr. Thus, whether the emissions are mitigated by the currently approved mitigation plan or by the proposal to use SO<sub>x</sub> for PM<sub>10</sub>/PM<sub>2.5</sub>, the project's daily emissions of PM<sub>10</sub>/PM<sub>2.5</sub> will be mitigated to levels of insignificance.

### **SO<sub>x</sub> for PM<sub>10</sub> trading ratio**

80 (78) *Staff asked in the December 22, 2006 Data Request for an analysis demonstrating that the use of the proposed 3 to 1 SO<sub>x</sub> for PM<sub>10</sub> trading ratio would mitigate the project's new PM<sub>10</sub>/PM<sub>2.5</sub> emissions impacts. Calpine has not provided such analysis; instead, they cited other licensed projects that use the same trading ratio to request approval for the use of such ratio. Because each area and region can have different atmospheric chemistry and emissions inventory, a previous SO<sub>x</sub> to PM trading ratio may not be appropriate for use in this case. Please provide an analysis calculating a SO<sub>x</sub> for PM<sub>10</sub> interpollutant trading ratio for this project or demonstrating that the proposed 3 to 1 SO<sub>x</sub> for PM trading ratio would mitigate this project's PM<sub>10</sub>/PM<sub>2.5</sub> emissions impact.*

**Response:** Based upon our previous response, we believe the 3:1 SO<sub>x</sub> to PM<sub>10</sub>/PM<sub>2.5</sub> ratio is more than sufficient to result in a net air quality benefit. After careful consideration, the BAAQMD Staff have recently approved an interpollutant trading ratio of 3:1 for SO<sub>x</sub> to PM<sub>10</sub>/PM<sub>2.5</sub> for at least two projects in the Bay Area District: the Potrero Unit 7 Project in San Francisco and the East Altamont Energy Center. The dispersion conditions and source inventories of PM<sub>10</sub>/2.5 and SO<sub>2</sub> for these two projects are substantially similar to conditions for RCEC. Potrero Unit 7 is upwind of RCEC and the East Altamont Energy Center is downwind of RCEC. In its final decision on the East Altamont project, the Commission thoroughly reviewed the extensive analysis presented by the Applicant, the BAAQMD, the SJVUAPCD and the Commission Staff and concluded that the proposed mitigation was adequate to mitigate PM<sub>10</sub> emissions to a level of insignificance (EAEC Final Decision, pp. 143-150). The Commission carefully reviewed the BAAQMD analysis and all of Staff's objections and found "no reason to override" the BAAQMD decision (EAEC Final Decision, p. 145). Therefore, in the absence of any showing by the Commission Staff that there are significant differences in the dispersion conditions and source inventories between RCEC, EAEC and Potrero 7, there is no need to perform any additional analysis and there is

no reason to override the BAAQMD's determination on this issue. In addition, BAAQMD staff have clearly indicated that the ratio should be based on the winter PM episode data, not annual average data.

If the Commission finds this proposed mitigation to be incorrect, the Commission can apply the mitigation plan for PM<sub>10</sub> as outlined in our approved PM<sub>10</sub> Mitigation Plan dated April 4, 2002.

### Cumulative construction impacts analysis

81 (79) *Because this facility and the recently submitted Application for Certification of the Eastshore facility have approximately the same construction timeline. Please include in the cumulative impact analysis the construction impacts of both facilities, and of the construction of Interstate 880 and Route 92 interchange that also may occur during the RCEC construction time frame.*

**Response:** An ISCST3 modeling analysis was previously provided to the California Energy Commission for air quality impacts due to construction activities associated with the proposed RCEC facility. The CEC has requested an analysis of cumulative impacts due to the potential for simultaneous construction activities at both the RCEC facility and the nearby proposed Eastshore Energy Center (Eastshore) facility (Eastshore is a proposed new power plant energy near Industrial Boulevard in Hayward, California, approximately 0.5 miles east of the RCEC site). The CEC requested also that the construction impacts of the California Department of Transportation's planned reconstruction of the Interstate 880/State Route 92 interchange be included in this analysis. At this time, no construction emissions data is readily available for the I-880/SR-92 project and so this project could not be included in the analysis. Further, based on the modeling results summarized below, the potential for cumulative construction impacts to cause violations of the ambient air quality standards is very low. Given that all three projects will have the construction impacts mitigated to levels of insignificance for CEQA compliance, little to no potential for air quality impacts is expected to occur. Current estimates of maximum construction impacts for the two facilities separately are shown below in Table DR81-1.

Maximum modeled impacts due to construction activities separately for either the RCEC or Eastshore facilities are less than the National Ambient Air Quality Standards (NAAQS) for all pollutants and averaging times. Maximum modeled impacts for RCEC construction activity impacts are greater than the California Ambient Air Quality Standard (CAAQS) for PM<sub>10</sub> 24-hour averaging times. Maximum modeled impacts due to construction activities separately for both the RCEC and Eastshore facilities are less than the CAAQS for all other pollutants and averaging times.

TABLE DR81-1  
Construction Impacts Modeling Results ( $\mu\text{g}/\text{m}^3$ ) for each facility separately

Pollutant	Averaging Time	RCEC Construction ( $\mu\text{g}/\text{m}^3$ )	Eastshore Construction ( $\mu\text{g}/\text{m}^3$ )	Background ( $\mu\text{g}/\text{m}^3$ )	State Standard ( $\mu\text{g}/\text{m}^3$ )	National Standard ( $\mu\text{g}/\text{m}^3$ )
NO <sub>2</sub>	1-hour	114.9	267.6	143.0	470	-
	Annual	5.3	16.6	32.0	-	100
SO <sub>2</sub>	1-hour	22.6	64.0	102.2	655	-
	3-hour	19.3	52.6	49.4	1300	1300

TABLE DR81-1

Construction Impacts Modeling Results ( $\mu\text{g}/\text{m}^3$ ) for each facility separately

Pollutant	Averaging Time	RCEC Construction ( $\mu\text{g}/\text{m}^3$ )	Eastshore Construction ( $\mu\text{g}/\text{m}^3$ )	Background ( $\mu\text{g}/\text{m}^3$ )	State Standard ( $\mu\text{g}/\text{m}^3$ )	National Standard ( $\mu\text{g}/\text{m}^3$ )
	24-hour	7.0	19.4	23.5	105	365
	Annual	1.6	3.8	8.0		80
CO	1-hour	50	177	3680	23,000	40,000
	8-hour	35	123	2178	10,000	10,000
PM <sub>10</sub>	24-hour	55.3	22.5	51.7	50	150
	Annual	5.8	5.3	18.1	20	50
PM <sub>2.5</sub>	24-hour	11.8	N/A	37 <sup>a</sup>	-	65
	Annual	1.5	N/A	9.4	12	15

<sup>a</sup>PM<sub>2.5</sub> 24-hour background, for comparison to the federal standard, is the 3-year average of the annual 98<sup>th</sup> percentile 24-hour concentrations. Modeled 24-hour PM<sub>2.5</sub> concentrations are the maximum modeled 24-hour concentration.

Maximum total ambient concentrations can be conservatively estimated as the sum of the maximum modeled ISCST3 impacts for each facility separately plus background (regardless of the locations and periods of meteorological data for the maximum modeled impacts). Under this conservative assumption, maximum combined impacts for SO<sub>2</sub> and CO for all averaging times and NO<sub>2</sub> for annual averaging times are less than both the NAAQS and the CAAQS. Therefore, a cumulative impact assessment was not performed for these pollutants and averaging times. In addition, the PM<sub>10</sub> combined impacts (maxima for both facilities plus background) due to construction activities are less than the NAAQS for either 24-hour or annual averaging times. Impacts for primary emissions of fine particulate matter (PM<sub>2.5</sub>) due to construction activities were not provided in the Eastshore filings to date.

Cumulative impact analyses for NO<sub>2</sub> (1-hour averaging times) and PM<sub>10</sub> and PM<sub>2.5</sub> (24-hour and annual averaging times) were prepared for construction activities at both facility sites using the information presented in the CEC filings to date. This included modeling on-site construction emissions from combustion sources as point sources evenly spaced over the on-site construction area – 28 point sources in the case of RCEC and 44 point sources for Eastshore. Fugitive particulate emissions were modeled as area sources for the main on-site construction area for RCEC and for the main on-site and laydown construction areas for Eastshore. The downwash and fence/receptor grids for both facilities were modeled, together with the RCEC coarse and intermediate grids and model options from the previous analysis of construction impacts for RCEC. For NO<sub>2</sub>, 1-hour impacts were calculated using the ISC3OLM model combined-plume option. For PM<sub>10</sub> and PM<sub>2.5</sub>, the ISCST3 model was used to calculate 24-hour and annual impacts. For other pollutants (SO<sub>2</sub> and CO) or averaging times (NO<sub>2</sub> annual), combined maximum impacts are shown as the sum of each facility's maximum impact determined previously regardless of location or meteorological period. These maximum cumulative impacts due to construction activities at both facilities are shown below in Table DR81-2.

Total cumulative impacts due to construction activities (modeled impacts plus background) for RCEC and Eastshore facilities combined for NO<sub>2</sub>, SO<sub>2</sub>, CO, and PM<sub>2.5</sub> are less than all applicable NAAQS/CAAQS. Total PM<sub>10</sub> cumulative impacts due to construction activities (modeled impacts plus background) are less than the NAAQS, but greater than the CAAQS and are similar to the previous modeled construction impacts for RCEC. The 24-hour PM<sub>10</sub>

CAAQS is already exceeded (and very nearly equaled in the case of the annual PM<sub>10</sub> CAAQS) in the absence of construction emissions, based on background concentrations alone. Fugitive particulate impacts as currently modeled would be expected to occur in the immediate vicinity of the modeled sources and, as expected, maximum cumulative PM<sub>10</sub>/PM<sub>2.5</sub> impacts are nearly identical to the previous maximum modeled impact for either facility when modeled individually. As the modeling indicates, the maximum construction impacts for PM<sub>10</sub>/PM<sub>2.5</sub> occur within the immediate vicinity of the construction activity and decrease rapidly with distance.

TABLE DR81-2

Cumulative Construction Impacts Modeling Results ( $\mu\text{g}/\text{m}^3$ ) for RCEC and Eastshore facilities

Pollutant	Averaging Time	Cumulative Modeled Impact ( $\mu\text{g}/\text{m}^3$ )	Background ( $\mu\text{g}/\text{m}^3$ )	Total impact ( $\mu\text{g}/\text{m}^3$ )	State Standard ( $\mu\text{g}/\text{m}^3$ )	National Standard ( $\mu\text{g}/\text{m}^3$ )
NO <sub>2</sub>	1-hour	255.6	143.0	398.6	470	-
	Annual	21.9	32.0	53.9	-	100
SO <sub>2</sub>	1-hour	86.6	102.2	188.8	655	-
	3-hour	71.9	49.4	121.3	1300	1300
	24-hour	26.4	23.5	49.9	105	365
	Annual	5.4	8.0	13.4	-	80
CO	1-hour	227	3680	3907	23,000	40,000
	8-hour	158	2178	2336	10,000	10,000
PM <sub>10</sub>	24-hour	55.3	51.7	107.0	50	150
	Annual	5.9	18.1	24.0	20	50
PM <sub>2.5</sub>	24-hour	11.8	37 <sup>a</sup>	48.8	-	65
	Annual	2.1	9.4	11.5	12	15

<sup>a</sup>PM<sub>2.5</sub> 24-hour background, for comparison to the federal standard, is the 3-year average of the annual 98<sup>th</sup> percentile 24-hour concentrations. Modeled 24-hour PM<sub>2.5</sub> concentrations are the maximum modeled 24-hour concentration.

The ISCST3 model over-predicts construction emission impacts due to the cold plume (i.e., ambient temperature) effect of dust emissions. Most of the plume dispersion characteristics in the ISCST3 model are derived from observations of hot plumes associated with typical exhaust stacks. The ISCST3 model does compensate for plume temperature; however, for ambient temperature plumes the model assumes negligible buoyancy and dispersion. Consequently, the ambient concentrations in cold plumes remain high even at significant distances from a source. In addition, ISCST3 impacts as currently modeled do not consider plume depletion due to particulate deposition. The modeled construction site impacts are not unusual in comparison to impacts predicted for most construction sites; construction sites that use good dust suppression techniques and low-emitting vehicles typically do not cause violations of air quality standards.

As the dispersion modeling indicates, the maximum construction impacts for PM<sub>10</sub>/PM<sub>2.5</sub> occur within the immediate vicinity of the construction activity and decrease rapidly with distance. The potential for cumulative air quality impacts from simultaneous construction activities from the Eastshore and RCEC projects is very low. When the CEC construction mitigation techniques are employed on both projects, any potential for impacts will be mitigated to levels of insignificance.



STATE OF CALIFORNIA – THE RESOURCES AGENCY

Arnold Schwarzenegger, Governor

**California Energy Commission**

1516 Ninth Street  
Sacramento, CA 95814  
Website: [www.energy.ca.gov](http://www.energy.ca.gov)  
Consumer Website: [www.ConsumerEnergyCenter.org](http://www.ConsumerEnergyCenter.org)  
Children's Website: [www.energyquest.ca.gov](http://www.energyquest.ca.gov)

*Exhibit 29*

**Notice of Data Response and Issue Resolution  
Staff Workshop  
for the Russell City Energy Center  
(01-AFC-7C)  
Amendment No.1**

The California Energy Commission staff will conduct a Data Response, Issue Resolution workshop for the Russell City Energy Center. The purpose is to discuss the project owner's responses to staff's data requests and to work toward resolving issues on the topics listed below. Discussion will also focus on comments and concerns from the City of Hayward's public agencies. All interested agencies and members of the public are invited to participate.

**Wednesday, April 25, 2007  
5:00 p.m. to 8:00 p.m.  
HAYWARD CITY HALL BUILDING  
Room 2A  
777 B St., Hayward, CA 94541  
(Wheelchair Accessible)  
([Map to Location](#))**

Discussion Topics

Air Quality  
Land Use  
Traffic and Transportation

**Purpose**

The Energy Commission staff is currently analyzing a Petition to Amend the Commission Decision for the Russell City Energy Center (01-AFC-7C). The workshop will focus on Air Quality, Land Use and Traffic and Transportation issues and data responses.

Prior to the discussion of individual technical areas, staff will explain the Energy Commission's amendment process. Staff's data requests and Russell City Energy Center's responses can be found on the Energy Commission's website:

<http://www.energy.ca.gov/sitingcases/russellcity/compliance/>.

**Background**

The Russell City Energy Center (RCEC) will be located in the City of Hayward (City) in Alameda County and was certified by the Energy Commission on Sept 11, 2002. On November 17, 2006, Calpine Corporation and GE Energy Finance Services, known as the Russell City Energy Company, LLC, filed a Petition to Amend the Commission Decision to move the project location 1,300 feet northwest of the original location. The RCEC was certified to be constructed in the City's Industrial Corridor at the southwest corner of the intersection of Enterprise Avenue and Whitesell Street, directly south of the City's Water Pollution Control Facility (WPCF).



As described in the Petition to Amend, the project owner plans to construct the facility on four parcels that are presently in both the City and an unincorporated area of Alameda County, directly west of the City's WPCF between Depot Road and Enterprise Avenue.

California's Warren-Alquist Act (Pub. Resources Code (PRC) § 25000 et seq.), provides the Energy Commission the exclusive authority to certify thermal electric power plants of 50 MW or more within the state (Pub. Resources Code § 25120 and 25500 et seq.). Additionally, Title 20, California Code of Regulations § 1769 authorizes the Energy Commission to approve amendments and modifications to those facilities it has certified. The amendment process includes an evaluation of the engineering and environmental impacts of the modified project, and whether it will remain in compliance with applicable laws, ordinances, regulations, and standards.

### Public Participation

The Energy Commission's Public Adviser provides the public with assistance in participating in Energy Commission activities. If you want information on how to participate in this proceeding, please contact the Public Adviser's Office at (916) 654-4489 or toll free at (800) 822-6228, by FAX at (916) 654-4493, or by e-mail at [pao@energy.state.ca.us](mailto:pao@energy.state.ca.us). If you have a disability and require assistance to participate, please contact Lou Quiroz at (916) 654-5146 at least five days in advance.

### Questions

General information and documents on the proposed project are available on the Energy Commission's website at <http://www.energy.ca.gov/sitingcases/russellcity/compliance/>. Please direct all news media inquiries to Claudia Chandler, Assistant Director, at (916) 654-4989 or e-mail at [mediaoffice@energy.state.ca.us](mailto:mediaoffice@energy.state.ca.us). For technical questions on the subject matter, please contact Lance Shaw, Compliance Project Manager, at (916) 653-1227 or by e-mail to [lshaw@energy.state.ca.us](mailto:lshaw@energy.state.ca.us). If you are unable to attend the workshop, written comments may be sent to the Compliance Project Manager electronically or to the Energy Commission's street address shown on the letterhead of this notice.

Date Posted: April 13, 2007

\_\_\_\_\_/signed/\_\_\_\_\_  
TERRENCE O'BRIEN,  
Deputy Director  
Energy Facilities Siting Division