

**DOCKET**

**07-AFC-6**

DATE	MAY 17 2011
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**STATE OF CALIFORNIA**

**Energy Resources Conservation  
and Development Commission**

**In the Matter of:**

**The Application for Certification for the  
CARLSBAD ENERGY CENTER  
PROJECT**

**Docket No. 07-AFC-6**

**CARLSBAD ENERGY CENTER LLC'S LIST OF WITNESSES,  
TIME ESTIMATES FOR TESTIMONY AND ADDITIONAL EVIDENCE**

May 17, 2011

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**STATE OF CALIFORNIA**

**Energy Resources Conservation  
and Development Commission**

**In the Matter of:**

**The Application for Certification for the  
CARLSBAD ENERGY CENTER  
PROJECT**

**Docket No. 07-AFC-6**

**CARLSBAD ENERGY CENTER LLC'S LIST OF WITNESSES,  
TIME ESTIMATES FOR TESTIMONY AND ADDITIONAL EVIDENCE**

Pursuant to the Committee's direction as set forth in the Notice of Availability of the Presiding Member's Proposed Decision and Notice of Committee Conference and Evidentiary Hearing ("Notice") dated May 9, 2011, Applicant Carlsbad Energy Center LLC ("Applicant") herein provides its list of witnesses, time estimates for direct and cross-examinations, and copies of evidence it wishes to introduce into the evidentiary record, as well as certain comments on Conditions of Certification ("COC") proposed in the Presiding Member's Proposed Decision ("PMPD") that may be discussed during the Committee Conference.

**I. INTRODUCTION**

The Carlsbad Energy Center Project ("CECP") application for certification ("AFC") proceeding began in 2007, with Evidentiary Hearings held February 1 through 4, 2010. Since that time, the parties, including Applicant, have submitted motions to allow additional evidence into the record and submitted post-hearing briefs pursuant to the Committee's July 12, 2010 Committee Briefing Order. Applicant looks forward to the Final Decision in this licensing proceeding and looks forward to participating in providing the public and the Committee with

the additional information sought for those topics presented in the Notice. The purposes of the additional hearing are:

- To take testimony to clear up an ambiguity in the evidence related to CECP's fire suppression water and on-site fire pumps;
- To take testimony and recommendations for additional or modified COCs based upon lessons learned from the Kleen Energy and Palomar power plant fires;
- To hear any relevant evidence on lessons learned from the recent Japanese earthquake and tsunami regarding the seismic safety of CECP;
- To accept evidence proposed by staff regarding CECP's compliance with the new federal standard for nitrogen dioxide and relevant evidence from the other parties; and
- To consider additional evidence, comment and argument about whether the Commission should find that an extraordinary public purpose would be served by the CECP and whether such finding may be required by the South Carlsbad Coastal Redevelopment Project Area Plan. Such evidence may include variables affecting when the units may be shut down, the costs of removal, ways to finance those costs, and other relevant matters, would be appropriate, as well as evidence and discussion of other extraordinary public purposes that approval of the project serves or could serve would also be appropriate.

## **II. LIST OF WITNESSES**

Applicant anticipates presenting the following witnesses for testimony on the related topics identified below.

1. Frank Collins and/or Ed Holden – Worker Safety and Fire Protection Issues; Lessons Learned from Kleen Energy and Palomar Fires
2. Robert Mason and/or Ed Holden– Seismic Safety
3. Gary Rubenstein – Air Quality
4. George Piantka – Proposed Conditions of Certification
5. Ronald W. Rouse, Esq. – Land Use (Extraordinary Public Purpose)

If rebuttal is necessary, Applicant reserves the right to provide testimony from additional witnesses as the need arises.

### III. TIME ESTIMATES FOR DIRECT AND CROSS-EXAMINATION

Applicant anticipates requiring the following time for direct testimony and cross-examination of other parties' witnesses related to the topics outlined in the Notice:

1. Worker Safety and Fire Protection Issues
  - a. Direct – 5 minutes
  - b. Cross-examination – 10 minutes
2. Lessons learned from Kleen Energy and Palomar fires
  - a. Direct – 10 minutes
  - b. Cross-examination – 10 minutes
3. Seismic Safety
  - a. Direct – 0 minutes
  - b. Cross-examination – 0 minutes
4. Air Quality
  - a. Direct – 5 minutes
  - b. Cross-examination – 0 minutes
5. Land Use (Extraordinary Public Purpose)
  - a. Direct – 10 minutes
  - b. Cross-examination – 10 minutes

### IV. ADDITIONAL EVIDENCE TO BE INTRODUCED

Applicant docketed several items after the evidentiary hearing in February 2010. Below is a list of those items plus additional evidence that Applicant will seek to admit during the upcoming hearing on May 19 and 20. While proposed Exhibits 198 and 199 were previously served on all parties (docket log 55508, 55773, and 56259, respectively), Applicant provides these documents again herein for the parties' and the Committee's convenience.

1. Applicant's Proposed **Exhibit 198** – City of Carlsbad Planning Commission Resolution No. 6632 and City of Carlsbad's Approved Desalination Plant Layout, Revision E (both dated August 19, 2009).

2. Applicant's Proposed **Exhibit 199** – Revised 1-Hour Air Quality Modeling Protocol (NO<sub>2</sub>), dated March 5, 2010 and Revised 1-Hour Air Quality Modeling Analysis (NO<sub>2</sub>), dated April 15, 2010.
3. Applicant's Proposed **Exhibit 199A** – City of Carlsbad Planning Commission Resolution No. 6635 (dated August 19, 2009).
4. Applicant's Proposed **Exhibit 199B** – City of Carlsbad Housing and Redevelopment Commission Resolution No. 420 (dated June 13, 2006).
5. Applicant's Proposed **Exhibit 199C** – City of Carlsbad Housing and Redevelopment Commission Resolution No. 477 (approved September 15, 2009).
6. Applicant's Proposed **Exhibit 199D** – Applicant's Written Testimony regarding Extraordinary Public Purpose (Land Use), dated May 17, 2010.
7. Applicant's Proposed **Exhibit 199E** – Declaration of Ronald W. Rouse in Support of Applicant's Written Testimony regarding Extraordinary Public Purpose (Land Use), dated May 17, 2010.

#### **V. COMMENTS REGARDING CERTAIN COCS**

Applicant will be providing detailed comments regarding the PMPD on or before the June 8, 2011 comment deadline. However, in an effort to facilitate discussions during the May 19, 2011 Conference and as requested by the Committee's May 9, 2011 Notice, Applicant provides herein certain comments regarding the COCs proposed in the PMPD.

**Noise-4:** Although Applicant has demonstrated that CECP can meet noise limits that are more stringent than applicable LORS, Applicant requests that the 51 dBA limit in the COC be consistent with applicable LORS. Therefore, Applicant requests that the reference to 51 dBA in Noise-5 be revised to 53 dBA to reflect the City of Carlsbad's noise ordinance that governs the project. Notwithstanding the foregoing, Applicant is amenable to the inclusion in Noise-4 of M2 as an additional noise monitoring location.

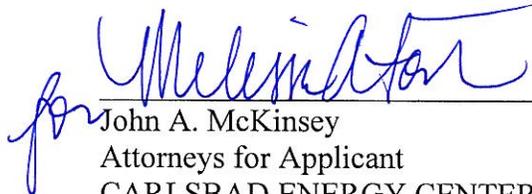
**Worker Safety-6:** The COC is fine as proposed. There is a conflict, however, between one reference in the PMPD discussion on Worker Safety and this COC. Applicant requests that the reference to "30 feet" at the bottom of page 4 of the Worker Safety section of the PMPD be changed to "28 feet" to be consistent with Worker Safety-6.

**VI. CONCLUSION**

Applicant looks forward to participating in the upcoming hearing and resolving any outstanding issues in the CECP AFC proceeding. More importantly, however, Applicant is eager to reach the end of this process and attend the Commission's hearing on the Final Decision on June 15, 2011.

Date: May 17, 2011

Stoel Rives LLP

  
\_\_\_\_\_  
John A. McKinsey  
Attorneys for Applicant  
CARLSBAD ENERGY CENTER LLC

THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
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APPLICATION FOR CERTIFICATION  
FOR THE CARLSBAD ENERGY  
CENTER PROJECT

Docket No. 07-AFC-6  
PROOF OF SERVICE  
(Revised 1/24/2011)

Carlsbad Energy Center LLC  
Applicant's List of Witnesses, Time Estimates  
for Testimony and Additional Evidence

CALIFORNIA ENERGY COMMISSION  
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### **DECLARATION OF SERVICE**

I, Judith M. Warmuth, declare that on May 17, 2011, I deposited copies of the aforementioned document in the United States mail at 500 Capitol Mall, Suite 1600, Sacramento, California 95814, with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

### **AND/OR**

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, Title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

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

  
\_\_\_\_\_  
Judith M. Warmuth

**EXHIBIT 199**

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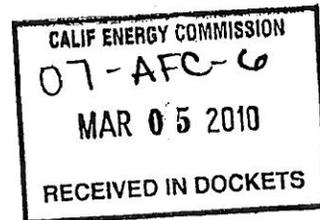
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March 5, 2010

KIMBERLY HELLWIG  
Direct (916) 319-4742  
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VIA EMAIL

Mr. Paul Kramer  
Hearing Officer  
California Energy Commission  
1516 Ninth Street  
Sacramento, CA 95814



Re: Carlsbad Energy Center Project (07-AFC-6)  
One-Hour NO<sub>2</sub> National Air Quality Modeling Protocol

Dear Mr. Kramer :

On behalf of Carlsbad Energy Center LLC, please find the enclosed correspondence from Sierra Research, Inc. to the San Diego County Air Pollution Control District regarding one-hour NO<sub>2</sub> air quality modeling protocol for the Carlsbad Energy Center Project. On this date, a copy of the same will be hand delivered to the Docket Unit and served on all parties via email and U.S. Mail.

Should you have any questions regarding this document, please contact our office.

Very truly yours,

Handwritten signature of Kimberly J. Hellwig in black ink.  
Kimberly J. Hellwig  
Paralegal

KJH:kjh

Enclosure

cc: See Proof of Service List

March 4, 2010

Ralph DeSiena  
Modeling and Meteorology Group  
San Diego County Air Pollution Control District  
10124 Old Grove Road  
San Diego, CA 92131



**sierra  
research**

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Tel: (734) 761-6666  
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Subject: One-hour NO<sub>2</sub> National Air Quality Standard Modeling Protocol for CECP

Dear Mr. DeSiena:

On behalf of Carlsbad Energy Center LLC, Sierra Research is please to submit the enclosed supplemental modeling protocol for the proposed Carlsbad Energy Center Project (CECP). This supplemental protocol is for dispersion modeling to demonstrate compliance with the new one-hour nitrogen dioxide (NO<sub>2</sub>) National Ambient Air Quality Standard (NAAQS) that goes into effect on April 12, 2010.

If you have any questions or need any additional information, please do not hesitate to contact me at 916-273-5139.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Andrews", followed by a horizontal line.

Tom Andrews  
Senior Engineer

Enclosure

cc: Steve Moore, SDAPCD  
John McKinsey, Stoel  
Will Walters, CEC  
Michael Monasmith, CEC  
CEC Dockets Office (07-AFC-6)

**Carlsbad Energy Center  
Supplemental Modeling Protocol  
1-Hour NO<sub>2</sub> NAAQS Compliance**

1. Background

On behalf of Carlsbad Energy Center LLC, Sierra Research is submitting this supplemental modeling protocol to the San Diego Air Pollution Control District (SDAPCD or District) for approval of air dispersion modeling and post-processing that demonstrates compliance of the Carlsbad Energy Center (Project) potential air quality impact with the new 1-hour nitrogen dioxide (NO<sub>2</sub>) National Ambient Air Quality Standard<sup>1</sup> (NAAQS) that goes into effect April 12, 2010. This protocol follows modeling guidance provided by the U. S. Environmental Protection Agency (EPA) in its "*Guideline on Air Quality Models*" (including supplements), and requirements in the new 1-hour NO<sub>2</sub> NAAQS Final Rule. The original modeling protocol, submitted in August 2007, governed the air dispersion modeling for all other pollutants and averaging times, and for the state 1-hour NO<sub>2</sub> AAQS. This protocol only repeats some basic information about the proposed and existing emitting units (sources) to provide context for the various modeling runs required for the supplemental air quality impact analysis.

The proposed project will consist of constructing and operating two fast-start Siemens SGT6-5000F combustion gas turbines in combined-cycle mode. Existing Boilers 1-3 will be shut down; Boilers 4-5 and the existing 16 MW simple-cycle combustion gas turbine will continue to operate.

The proposed modeling will address the potential 1-hour NO<sub>2</sub> ambient impacts of commissioning, startups, shutdowns and normal operation of the two new combustion gas turbines plus operation of existing Boilers 4 and 5 and the existing simple-cycle combustion gas turbine.

All source locations, emission rates, and stack parameters will be the same as those used in the final modeling analyses for the Project previously approved by the District.

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<sup>1</sup> Federal Register, Volume 75, Number 26, Part III, Environmental Protection Agency, 40 CFR Parts 50 and 58, *Primary National Ambient Air Quality Standards for Nitrogen Dioxide; Final Rule*, February 9, 2010.

## 2. Meteorological Data

The District provided a three-year (2004-2006) meteorological data set appropriate for use (i.e., already processed by AERMET) with AERMOD<sup>2</sup> (current version 09292), the primary air dispersion model used for this project. The data set combines surface meteorological data (e.g., wind speed and direction, temperature) from the District's monitoring station at the Camp Pendleton Marine Base (see Figure 1) and upper air data from the Marine Corps Air Station Miramar (MCAS Miramar, Upper Air Station No. 03190). This meteorological data set was used for the prior modeling analyses, and will be used for the supplemental modeling analysis as well.

## 3. Existing Ambient Air Quality Data

Modeling of the project-generated 1-hour NO<sub>2</sub> concentrations requires use of ambient monitored O<sub>3</sub> concentrations. In addition, computation of total hourly NO<sub>2</sub> concentrations requires use of the ambient monitored hourly NO<sub>2</sub> concentrations from the nearest monitoring station. Background ambient O<sub>3</sub> and NO<sub>2</sub> concentrations for the project area during 2004-2006 have been obtained from the monitoring station at Camp Pendleton, which is the monitoring site nearest to the project.

Concerning data substitution for missing hourly O<sub>3</sub> and NO<sub>2</sub> ambient monitoring data, the two data sets serve different purposes, and therefore require different data substitution procedures. The hourly O<sub>3</sub> data are used within the AERMOD air dispersion model when operated using the Plume Volume Molar Ratio Method (PVMRM) option that simulates the atmospheric chemistry of O<sub>3</sub> reacting with initially emitted nitric oxide (NO) to form NO<sub>2</sub>. If there is only a limited amount of O<sub>3</sub> in the plume, then the reaction is limited, forming less NO<sub>2</sub> than occurs with the simplifying assumption of complete conversion. The model disperses the initial NO<sub>x</sub> emissions, which are mostly NO, during each of the 8,760 hours in a 365-day year. If the hourly ambient O<sub>3</sub> data from the nearest monitoring station have missing data, the missing O<sub>3</sub> hours are given substituted concentrations with the following procedure to better simulate the resulting NO<sub>2</sub> concentrations:

- If three or fewer consecutive hours of O<sub>3</sub> ambient concentrations are missing, linear interpolation will be used to fill in the missing concentrations based on the previous and subsequent hour concentrations from the same day as follows:
  - If only A<sub>n</sub> is missing, then A<sub>n</sub> = arithmetic mean of A<sub>n-1</sub> and A<sub>n+1</sub>, where A<sub>n-1</sub> is the previous concentration and A<sub>n+1</sub> is the subsequent concentration.

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<sup>2</sup> AERMOD stands for American Meteorological Society/Environmental Protection Agency Regulatory Model, which was developed by the American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee (AERMIC).

- If  $A_n$  and  $A_{n+1}$  are missing, then  $A_n = A_{n-1} * 0.67 + A_{n+2} * 0.33$  and  $A_{n+1} = A_{n-1} * 0.33 + A_{n+2} * 0.67$ .
  - If  $A_{n-1}$ ,  $A_n$  and  $A_{n+1}$  are missing, then  $A_{n-1} = A_{n-2} * 0.75 + A_{n+2} * 0.25$ ,  $A_n = A_{n-2} * 0.5 + A_{n+2} * 0.5$ ,  $A_{n+1} = A_{n-2} * 0.25 + A_{n+2} * 0.75$ .
- If four or more consecutive hours of  $O_3$  ambient concentrations are missing, then substitution for each missing concentration will be by the arithmetic mean of the concentrations from the same hour of the most recent previous day and soonest subsequent day.

Unlike the  $O_3$  data that are used by the dispersion model to determine modeled impacts, the  $NO_2$  ambient data are used to establish the baseline ambient conditions for an area of interest. As such, based on EPA guidance related to determinations of compliance with the new 1-hour average  $NO_2$  NAAQS,<sup>3</sup> no data substitution is performed for the  $NO_2$  data. Instead it is necessary to determine whether there are sufficient hourly data available for a complete day, quarter, and year. Under this EPA guidance,<sup>4</sup> a day is classified as complete if it has at least 75% of the hourly concentrations recorded (i.e., at least 18 hours per day). A quarter is classified as complete if it has at least 75% of the sampling days with complete data (i.e., at least 67 to 69 depending on quarter). A year is classified as complete if it has four complete quarters. In order to determine whether a day, quarter, or year is complete, it is necessary to identify missing data. Missing hourly  $NO_2$  ambient concentrations will be replaced with the value -99, which informs the computation algorithm that no valid  $NO_2$  concentration was measured for that hour. If more than 6 hourly concentrations are missing in the same day, the entire day will be identified as invalid, again following the same EPA regulatory guidance.<sup>5</sup>

#### 4. Combining Existing Ambient Air Quality Data with Modeled Impacts

Modeled concentrations will be added to this representative background  $NO_2$  concentration data set to determine compliance with the new NAAQS using the procedure outlined below, which complies with the requirements of the final rule.

The modeled and monitored 1-hour  $NO_2$  concentrations will be combined as follows:

- The modeled hourly  $NO_2$  concentrations will be limited by the available ozone according to the use of AERMOD and PVMRM option. To the extent that a meteorological data set contains missing values for any hour such that a valid  $NO_2$  concentration cannot be modeled, the results for that hour will be coded as missing.

<sup>3</sup> Federal Register, Volume 75, Number 26, Part III, Environmental Protection Agency, 40 CFR Parts 50 and 58, *Primary National Ambient Air Quality Standards for Nitrogen Dioxide: Final Rule*, Appendix S, pages 6532-6533, February 9, 2010.

<sup>4</sup> Ibid, p. 6532.

<sup>5</sup> Ibid.

- The predicted total hourly NO<sub>2</sub> concentration at each receptor will be calculated by adding the modeled hourly project impact at the receptor to the corresponding hour NO<sub>2</sub> concentration measured at the Camp Pendleton ambient monitoring station.
- For hours with missing modeled NO<sub>2</sub> concentrations or missing ambient monitored background NO<sub>2</sub> concentrations, the resulting total hourly concentrations (modeled impacts plus background concentrations) will be labeled as missing using the value -99 at every receptor.
- The daily maximum total hourly NO<sub>2</sub> concentration for each day will be determined for each receptor. If there are less than 18 complete hours for a day, that day will be labeled as missing using the value of -99.
- If there are four complete quarters for a given complete year, the 98<sup>th</sup> percentile daily maximum total hourly NO<sub>2</sub> concentration will be determined for that year for each receptor as follows from EPA guidance:<sup>6</sup>
  - 8<sup>th</sup> highest value if the annual number of valid daily maximum total hourly NO<sub>2</sub> concentrations is at least 351;
  - 7<sup>th</sup> highest value if the annual number of valid daily maximum total hourly NO<sub>2</sub> concentrations is between 301 and 350; and
  - 6<sup>th</sup> highest value if the annual number of valid daily maximum total hourly NO<sub>2</sub> concentrations is between 251 and 300.
- If the year is not complete, the same EPA guidance continues the above sequential scale to determine the 98<sup>th</sup> percentile daily maximum total hourly NO<sub>2</sub> concentration for that year for each receptor:
  - 5<sup>th</sup> highest value if the annual number of valid daily maximum total hourly NO<sub>2</sub> concentrations is between 201 and 250;
  - 4<sup>th</sup> highest value if the annual number of valid daily maximum total hourly NO<sub>2</sub> concentrations is between 151 and 200;
  - 3<sup>rd</sup> highest value if the annual number of valid daily maximum total hourly NO<sub>2</sub> concentrations is between 101 and 150;
  - 2<sup>nd</sup> highest value if the annual number of valid daily maximum total hourly NO<sub>2</sub> concentrations is between 51 and 100; and
  - 1<sup>st</sup> highest value if the annual number of valid daily maximum total hourly NO<sub>2</sub> concentrations is between 1 and 50.

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<sup>6</sup> Ibid, Table 1, p. 6534.

- Provided that there are three consecutive complete years, the arithmetic mean of the three 8<sup>th</sup> highest daily maximum total NO<sub>2</sub> concentrations will be calculated for the three consecutive years for each receptor.
- From the field of receptors, the receptor with the highest three-year average will be selected to represent the maximum total hourly NO<sub>2</sub> concentration for the project impact area. This maximum total hourly NO<sub>2</sub> concentration will be compared to the new 1-hour NO<sub>2</sub> NAAQS.

The 1-hour NO<sub>2</sub> NAAQS level is 100 parts per billion by volume (ppb), and hourly monitoring concentrations are to be reported to no more detail than “one place after the decimal”<sup>7</sup> (tenths of a ppb), with additional digits to the right of the decimal being truncated. The NAAQS level of 100 ppb is equivalent to 188 µg/m<sup>3</sup>, and the analysis procedure described above will be conducted in units of µg/m<sup>3</sup>. The final NO<sub>2</sub> concentration, calculated as described above, that will be compared to the NAAQS level will be “rounded to the nearest whole number” or 1 µg/m<sup>3</sup>, with decimals 0.5 and greater rounded up to the nearest whole number and decimals lower than 0.5 rounded down to the nearest whole number, following regulatory guidance.<sup>8</sup>

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<sup>7</sup> Federal Register, Volume 75, Number 26, Part III, Environmental Protection Agency, 40 CFR Parts 50 and 58, *Primary National Ambient Air Quality Standards for Nitrogen Dioxide; Final Rule*, Appendix S, page 6533, February 9, 2010.

<sup>8</sup> Ibid.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
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APPLICATION FOR CERTIFICATION  
FOR THE CARLSBAD ENERGY  
CENTER PROJECT

Docket No. 07-AFC-6  
PROOF OF SERVICE  
(Revised 2/16/2010)

Carlsbad Energy Center LLC's  
One-Hour NO<sub>2</sub> National Air Quality Modeling Protocol

CALIFORNIA ENERGY COMMISSION  
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Sacramento, CA 95814-5512  
[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

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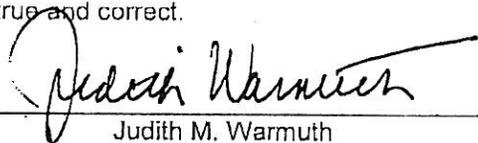
DECLARATION OF SERVICE

I, Judith M. Warmuth, declare that on March 5, 2010, I deposited copies of the aforementioned document in the United States mail at 500 Capitol Mall, Suite 1600, Sacramento, California 95814, with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

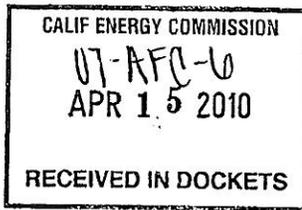
OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, Title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

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

  
\_\_\_\_\_  
Judith M. Warmuth

April 13, 2010



1801 J Street  
Sacramento CA 95811  
Tel: (916) 444-6666  
Fax: (916) 444-8373

Ann Arbor MI  
Tel: (734) 761-6666  
Fax: (734) 761-6755

Ralph DeSiena  
Modeling and Meteorology Group  
San Diego Air Pollution Control District  
10124 Old Grove Road  
San Diego, CA 92131

Subject: Application for Authority to Construct for the Proposed Carlsbad Energy Center Project – One-hour NO<sub>2</sub> National Air Quality Standard Modeling NO<sub>2</sub> Analysis

Dear Mr. DeSiena:

On behalf of Carlsbad Energy Center LLC, we are pleased to submit a supplemental dispersion modeling analysis that was performed to demonstrate compliance with the new one-hour nitrogen dioxide (NO<sub>2</sub>) National Ambient Air Quality Standard (NAAQS) that goes into effect on April 12, 2010. This modeling was performed based on the approach discussed in our modeling protocol submitted to the District on March 4, 2010. As shown in the following table, the supplemental modeling analysis shows that the proposed Carlsbad Energy Center Project will be in compliance with the new one-hour NO<sub>2</sub> NAAQS. The modeling files for this analysis are included in the enclosed portable hard drive.

Supplement One-Hour NO <sub>2</sub> Modeling Analysis Carlsbad Energy Center Project		
Equipment and Operating Mode	Modeled Impact <sup>a</sup> ( $\mu\text{g}/\text{m}^3$ )	NAAQS ( $\mu\text{g}/\text{m}^3$ )
New Equipment, <sup>b</sup> Normal Operation	141.9	188
New Equipment, <sup>b</sup> Normal Operation plus Existing Equipment <sup>c</sup>	145.2	188
New Gas Turbines, Commissioning	136.4	188
New Gas Turbines, Commissioning plus Existing Equipment <sup>c</sup>	139.8	188
New Gas Turbines, Startup <sup>d</sup>	134.9	188
Notes: a. Maximum three-year average (2004~2006) of 98th percentile one-hour total hourly NO <sub>2</sub> concentration (modeled impact plus background ambient level) among all the receptors. b. New gas turbines plus the new emergency firepump engine. c. Existing Encina Power Plant boiler Units 4 and 5, and peaking gas turbine. d. Based on four-phase startup modeling approach.		

If you have any questions or need any additional information, please do not hesitate to contact me at 916-273-5139.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Andrews', with a long horizontal flourish extending to the right.

Tom Andrews  
Senior Engineer

Enclosure (portable hard drive)

cc w/enclosure:

Will Walters, CEC

cc w/out enclosure:

Steve Moore, SDAPCD

George Piantka, Carlsbad Energy Center LLC

John McKinsey, Stoel

Michael Monasmith, CEC

CEC Dockets Office (07-AFC-6)

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT  
COMMISSION OF THE STATE OF CALIFORNIA  
1516 NINTH STREET, SACRAMENTO, CA 95814  
1-800-822-6228 -- [WWW.ENERGY.CA.GOV](http://WWW.ENERGY.CA.GOV)

APPLICATION FOR CERTIFICATION  
FOR THE CARLSBAD ENERGY  
CENTER PROJECT

Docket No. 07-AFC-6  
PROOF OF SERVICE  
(Revised 2/16/2010)

Carlsbad Energy Center LLC's  
Submittal of Correspondence from Sierra Research to the San Diego Air Pollution  
Control District regarding One-Hour NO<sub>2</sub> National Air Quality Standard Modeling  
for the Carlsbad Energy Center Project

CALIFORNIA ENERGY COMMISSION  
Attn: Docket No. 07-AFC-6  
1516 Ninth Street, MS-4  
Sacramento, CA 95814-5512  
[docket@energy.state.ca.us](mailto:docket@energy.state.ca.us)

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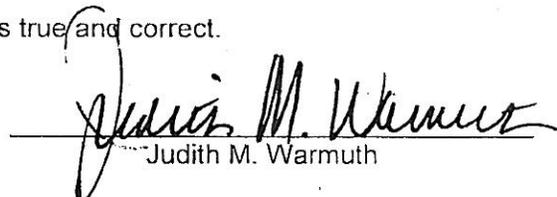
**DECLARATION OF SERVICE**

I, Judith M. Warmuth, declare that on April 15, 2010, I deposited copies of the aforementioned document in the United States mail at 500 Capitol Mall, Suite 1600, Sacramento, California 95814, with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

**OR**

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

  
Judith M. Warmuth

**EXHIBIT 199B**

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**RESOLUTION NO. 420**

A RESOLUTION OF THE HOUSING AND REDEVELOPMENT COMMISSION OF THE CITY OF CARLSBAD, CALIFORNIA, APPROVING REDEVELOPMENT PERMIT RP 05-12 FOR THE PORTION OF THE PRECISE DEVELOPMENT PLAN AND DESALINATION PLANT PROJECT LOCATED IN THE SOUTH CARLSBAD COASTAL REDEVELOPMENT AREA AND GENERALLY IN THE VICINITY OF AGUA HEDIONDA LAGOON, CANNON ROAD, AND THE ENCINA POWER STATION.

CASE NAME: PRECISE DEVELOPMENT PLAN AND DESALINATION PLANT

CASE NO: RP 05-12

WHEREAS, on May 3, 2006, the Carlsbad Planning Commission, the review body for recommending and processing land use permits proposed in the South Carlsbad Coastal Redevelopment Area, held a duly noticed public hearing to consider a proposed Redevelopment Permit and adopted Planning Commission Resolution No. 6091, recommending approval of Redevelopment Permit RP 05-12; and

WHEREAS, the Housing and Redevelopment Commission of the City of Carlsbad did on the 13th, day of June, 2006, hold a public hearing to consider the recommendations and heard all persons interested in or opposed to PR 05-12; and

NOW THEREFORE, BE IT RESOLVED by the Housing and Redevelopment Commission of the City of Carlsbad, California, as follows:

1. That the above recitations are true and correct.
2. That Redevelopment Permit RP 05-12 is approved and that the findings and conditions of the Planning Commission contained in Planning Commission Resolution No. 6091, on file with the City Clerk and incorporated herein by reference, are the findings and conditions of the Housing and Redevelopment Commission of the City of Carlsbad.

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PASSED, APPROVED AND ADOPTED at a Special Meeting of the Housing and  
Redevelopment Commission of the City of Carlsbad on the 13th day of June,  
2006, by the following vote, to wit:

AYES: Commissioners Lewis, Kulchin, Packard, Sigafoose

NOES: None

ABSENT: Commissioner Hall

  
\_\_\_\_\_  
CLAUDE A. LEWIS, CHAIRMAN

ATTEST:

  
\_\_\_\_\_  
RAYMOND R. PATCHETT, SECRETARY  
(SEAL)



**EXHIBIT 199C**

---

RESOLUTION NO. 477

1  
2  
3 A RESOLUTION OF THE HOUSING AND REDEVELOPMENT  
4 COMMISSION OF THE CITY OF CARLSBAD, CALIFORNIA,  
5 APPROVING AN ADDENDUM TO ENVIRONMENTAL IMPACT  
6 REPORT 03-05 AND AN AMENDMENT TO REDEVELOPMENT  
7 PERMIT RP 05-12 FOR THE CONSTRUCTION OF THE  
8 CARLSBAD SEAWATER DESALINATION PLANT AND  
9 APPURTENANT FACILITIES, INCLUDING DESALINATED  
10 WATER CONVEYANCE PIPELINES, WITHIN THE SOUTH  
11 CARLSBAD COASTAL REDEVELOPMENT AREA. THE  
12 PROJECT IS LOCATED AT THE ENCINA POWER STATION,  
13 4600 CARLSBAD BOULEVARD; IN THE VICINITY OF AGUA  
14 HEDIONDA LAGOON, AVENIDA ENCINAS, AND CANNON  
15 ROAD; AND IN LOCAL FACILITIES MANAGEMENT ZONES 1, 3,  
16 AND 13.

17 CASE NAME: DESALINATION PROJECT CHANGES  
18 CASE NO.: EIR 03-05(A)/RP 05-12(A)

19 The Housing and Redevelopment Commission of the City of Carlsbad, California does  
20 hereby resolve as follows:

21 WHEREAS, on June 13, 2006, the Housing and Redevelopment Commission of the  
22 City of Carlsbad certified Environmental Impact Report EIR 03-05, as modified by the additional  
23 responses to comments, adopted the Candidate Findings of Fact, as modified by the addition of  
24 Section 5.5, Statement of Overriding Considerations, and the Mitigation Monitoring and  
25 Reporting Program (collectively "certified EIR 03-05") and approved Redevelopment Permit RP  
26 05-12 for the Precise Development Plan and Desalination Plant project; and

27 WHEREAS, pursuant to the provisions of the Municipal Code, the Planning  
28 Commission did, on August 19, 2009, hold a duly noticed public hearing as prescribed by law to  
consider a proposed addendum to EIR 03-05 (identified as EIR 03-05(A)) and a proposed  
amendment to RP 05-12, and adopted Planning Commission Resolutions 6631 and 6635,  
recommending approval of EIR 03-05(A) and RP 05-12(A), respectively; and

WHEREAS, the Housing and Redevelopment Commission of the City of Carlsbad, on  
the \_\_\_\_\_ day of \_\_\_\_\_, 2009, held a duly noticed public hearing to consider  
the recommendation and heard all persons interested in or opposed to EIR 03-05(A) and RP  
05-12(A); and



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PASSED, APPROVED AND ADOPTED at a joint special meeting of the Housing and  
Redevelopment Commission and City Council of the City of Carlsbad on the \_\_\_\_\_ day of \_\_\_\_\_,  
2009, by the following vote:

AYES:

NOES:

ABSENT:

\_\_\_\_\_  
CLAUDE A LEWIS, Chairman

ATTEST:

\_\_\_\_\_  
LISA HILDABRAND, Secretary

(SEAL)

104

**EXHIBIT 199D**

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**Applicant's Testimony**  
**for**  
**Land Use - Extraordinary Public Purpose**

*Applicant's Witness:* **Ronald W. Rouse**

**1. The CECP will serve an extraordinary public purpose as contemplated by the South Carlsbad Redevelopment Plan.**

The South Carlsbad Coastal Redevelopment Plan ("SCCRP") requirement for an "extraordinary public purpose" is a unique local regulation not found in generally applicable state law, including California Redevelopment Law. The requirement that a project serve an "extraordinary public purpose" is not even a generally applicable policy within Carlsbad redevelopment areas. It is a requirement unique only to the SCCR, and within that plan only to new development proposing specified public facility uses,<sup>1</sup> including the generation and transmission of electrical energy." (SCCRP, § 601.)

To the Applicant's knowledge, this subjective test of whether or not a public facility project serves an "extraordinary public purpose" has been applied only once by the City when it approved the privately owned Poseidon Desalination Plant in 2006 (and then again when it approved minor amendments in 2009), which facility is also located on a portion of the Encina Power Station (EPS) site. This demonstrates that the "extraordinary public purpose" requirement is another subjective layer of the "nesting dolls" that make up Carlsbad's local regulatory scheme. The City's arguments to the contrary are yet another attempt by the City to usurp the CEC's exclusive jurisdiction over power plant siting. As with many of its arguments, the City's subjective interpretation of "extraordinary public purpose" is not based in objective analysis, rather, it simply demonstrates the City's desire to frustrate the certification process by imposing arbitrary, subjective local hurdles.

Notwithstanding the above, the CEC easily can find that approval of the CECP will serve many extraordinary public purposes. In proposing these findings, it is important to note that the one of the express goals of the SCCR is to "[f]acilitate the redevelopment of the Encina power generating facility to a smaller, more efficient power generating plant." As such, the SCCR contemplates that findings of "extraordinary public purpose" for the CECP would be made. CEC Staff and the Applicant have identified many such extraordinary public purposes, including that the CECP will:

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<sup>1</sup> Other uses requiring a finding of "extraordinary public purpose" include desalination plant; public utility district maintenance and service facilities; governmental maintenance, storage and operating facilities; processing, using and storage of natural gas, liquid natural gas, and domestic and agricultural water supplies; energy transmission facilities; and/or wastewater treatment, disposal or reclamation facilities.

- result in the concurrent de-commissioning of Units 1-3, the three oldest steam boiler units at EPS;
- substantially reduce the current EPS station demand for once through ocean water cooling through the retirement of Units 1-3 at EPS and the related impacts to marine resources;
- result in a more secure and reliable supply of electrical energy in the City and the San Diego region generally (as the PMPD notes, the “laws of physics” dictate that the City will have the first opportunity to consume electricity generated by CECP);
- replace less efficient, higher polluting generation units with modern, more efficient and less polluting units, making the electric generating system more efficient and less damaging to the environment than EPS Units 1 through 3 it will replace;
- result in additional tax revenues to the City of Carlsbad as a result of the construction/valuation of the CECP and natural gas franchise taxes;
- generate approximately 357 construction jobs and associated permanent operational jobs in Carlsbad;
- enhance public recreational opportunities in the coastal area through accommodation of the Coastal Rail Trail as proposed in the PMPD;
- be a step toward potential future redevelopment of the western portion of the EPS site for non-power plant purposes as the CECP occupies only a small portion of the existing EPS site that is very constrained in terms of future uses, located between the railroad tracks, Interstate 5 and City sewer pump station/sewer interceptor facilities;
- efficiently utilizes existing regional and local energy transmission infrastructure, thus avoiding environmental damage inherent in the creation of new infrastructure elsewhere; and
- enhance the incorporation and penetration of renewable electrical energy generation supplies into the local grid from locations outside the region.

2. **The City’s prior determination that the desalination plant would serve an extraordinary public purpose demonstrates that CECP will also serve an extraordinary public purpose as similar findings relied upon by the City for the desalination plant can also be made for CECP.**

The City’s past findings of “extraordinary public purpose” for the Poseidon Desalination Plant also support an objective finding that the CECP will likewise serve an “extraordinary public purpose.” As set forth in Carlsbad Planning Commission Resolution No. 6091 dated May 3, 2006

(Attachment No. 1), and then subsequently adopted by the City's Housing and Redevelopment Commission as Resolution No. 420 (Attachment No. 2),<sup>2</sup> the City made the findings listed below in support of an "extraordinary public purpose" for the privately owned desalination plant. All of these same findings can be made for the CECP.

(a) Secure, Redundant and Reliable Resource Supply. The City found Poseidon would provide a secure, redundant and reliable local water supply. The State's history with droughts made a reliable water supply particularly important. Like the desalination plant, the CECP would also provide the City and the San Diego region generally with a secure, redundant and reliable supply of electricity. This is important, particularly in light of the region's past experience with energy shortages and rolling black outs. Moreover, as the PMPD notes, the "laws of physics" dictate that the City will have the first opportunity to consume electricity generated by CECP. The CECP will also deliver this more reliable energy supply in a manner that substantially reduces the use of "once through cooling" and the related impact to marine resources, and is also much more efficient than Units 1 through 3 that will be retired after the CECP becomes operative.

(b) Economic Benefits. The City found that the increased property and business tax revenue from the Poseidon desalination facility also supported a finding of extraordinary public purpose. The CECP will likewise provide substantially increased property tax revenues and business tax revenues to the City, and therefore also provide a basis for a finding of "extraordinary public purpose." CECP approval and construction will also generate approximately 357 construction jobs and associated permanent operational jobs in Carlsbad.

(c) Recreational Opportunities. The City also found Poseidon's desalination plant would serve an "extraordinary public purpose" because "*Cabrillo Power, the Encina Power Station owner, has offered several acres of dedications to the City for the public's benefit and for marine research, including an easement for public use of Fishing Beach, dedication in fee title to the City of the Bluff Area, deed restrictions limiting uses at the Hubbs site, dedication of public parking in the South Power Plant Public Parking Area, and the requirement to grant an easement for the Coastal Rail Trail in the future. Cabrillo (the EPS owner), not Poseidon, agreed to provide all of these significant property rights for public recreation with the understanding that these exactions would also provide support for approval of the CECP project. Indeed, that same City Resolution No. 6091 notes that approval of the desalination plant would "facilitate the redevelopment of the Encina power generating facility to a smaller, more efficient power generating plant." (Reso. No. 6091 at p. 7.) It is also important to point out that the CECP, unlike the desalination plant, is not the introduction of an entirely new use on the Property. Rather, CECP is modifying and modernizing an existing use. As such, the impacts associated with access to coastal resources are substantially less than they were for the desalination plant.*

(d) Restore and Enhance the Marine Environment. The City also found that Poseidon had a history of, and likely would remain involved in protecting, restoring, and enhancing the health and vitality of the Agua Hedionda Lagoon and surrounding environment. The same is true of

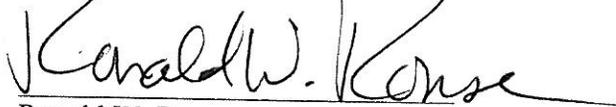
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<sup>2</sup> The City re-adopted these same findings in 2009 when it approved amendments to the desalination plant in Planning Commission Resolution No. 6635 (Attachment No. 3), adopted by the Housing and Redevelopment Commission in Resolution No. 477 (Attachment No. 4).

Cabrillo Power, owner of the EPS. Cabrillo Power has been active stewards of the Agua Hedionda Lagoon, performing periodic dredging of the outer, middle and inner lagoons, replenishing dredged sand on the local beaches, being host to the Hubbs Sea World white sea bass hatchery and YMCA camp, offering the multiple additional recreational dedications mentioned in Paragraph (c) above, and satisfying Clean Water Act and California State Lands Commission requirements.

(e) Regional Leadership Role. The City found creation of the desalination plant would enhance the City's position as a regional water supply leader. Hosting a state of the art energy generation plant such as the CECP will also enhance the City's role as a regional leader when it comes to energy supply.

The foregoing demonstrates that the CECP will provide several, substantial and extraordinary public purposes benefitting the City as well as the region generally. The Applicant strongly believes the above-referenced extraordinary public purposes are more than sufficient to satisfy the "extraordinary public purpose" requirement in the SCCRP.



Ronald W. Rouse

**EXHIBIT 199E**

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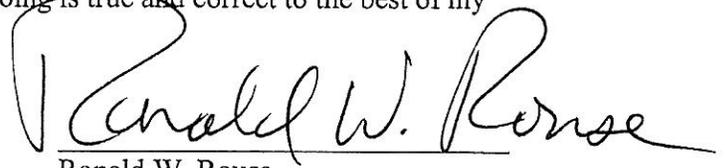
Declaration of  
Ronald W. Rouse  
Carlsbad Energy Center Project  
(07-AFC-6)

I, Ronald W. Rouse, declare as follows:

1. I am an attorney, licensed to practice in all Courts in the State of California (SBN 058177), employed since 1973 by Luce, Forward, Hamilton & Scripps LLP and under contract with Carlsbad Energy Center LLC to provide land use, environmental and legal consulting services for the Carlsbad Energy Center Project (“CECP” or the “Project”).
2. I caused to be prepared, or prepared information related to, **Land Use** in support of the Application for Certification for CECP. Such information was based on my independent analysis of data from reliable documents and sources and my 36 years of professional experience and knowledge. Specifically, I prepared, caused to be prepared, and/or have reviewed the following documents in support of the Project:
  - a. Application for Certification Land Use Section 5.6, (09/11/2007)
  - b. Application to City of Carlsbad for Amendment to the Precise Development/Specific Plans (09/19/2007)
  - c. Data Adequacy Supplement A (10/24/2007)
  - d. Data Responses to the City of Carlsbad, Set 1A, #51-54
  - e. Offsite Alternatives Analysis (04/17/2008)
  - f. Project Consistency with City of Carlsbad Land Use Ordinances (06/03/2008)
  - g. Project Enhancement and Refinement Section 5.6 (07/25/2008)
  - h. Correspondence to City of Carlsbad re City’s Proposed Ordinance CS-067 (Moratorium) (10/27/2008)
  - i. City of Carlsbad Planning Commission Resolution No. 6635 (08/19/2009)
  - j. City of Carlsbad Housing and Redevelopment Commission Resolution No. 420 (06/13/06)
  - k. City of Carlsbad Housing and Redevelopment Commission Resolution No. 477 (09/15/09)
  - l. City of Carlsbad Planning Commission Resolution No. 6091 (05/03/06).
  - m. PMPD Hearing Testimony re Land Use – Extraordinary Public Purpose
3. It is my professional opinion that the information provided to the California Energy Commission related to the CECP AFC proceeding is valid and accurate with respect to the issues addressed therein.
4. I am personally familiar with the facts and conclusions related in the testimony presented by me and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

May 17, 2011  
Date

  
Ronald W. Rouse