TATE OF CALIFORNIA — THE RESOURCES AGENCY

ALIFORNIA ENERGY COMMISSION
16 NINTH STREET
ACRAMENTO, CA 95814-5512

ARNOLD SCHWARZENEGGER, *Governor*

DOCKET
07-AFC-6
DATE SEP 1 9 2008
RECD. SEP 1 9 2008

September 19, 2008

Tim Hemig
Director, Environmental & New Business
NRG Energy, Inc.
1817 Aston Avenue, Suite 104
Carlsbad, CA 92008

Dear Mr. Hemig:

CARLSBAD ENERGY CENTER PROJECT (07-AFC-6) CITY OF CARLSBAD DATA REQUESTS, SET 3B

Attached is the City of Carlsbad's third set of Data Requests (#62-141), which has been docketed as Data Requests Set 3B. Pursuant to Title 20, section 1716(c) of the California Code of Regulations, this set of data requests is being made by the City of Carlsbad following its review of the applicant's July 25, 2008 Project Enhancement and Refinement supplement to its AFC, which staff sent to the city for comment.

While we understand that you will ultimately provide data responses to all the questions asked, given that the PSA is overdue (based on the Committee's schedule) and anticipated to be published in late October, we are asking that only those questions which staff deems essential for completion of its Preliminary Staff Assessment (PSA) be answered within 30 days and docketed as Data Responses Set 3B, with the remainder answered as Data Responses Set 3C prior to the PSA workshop. The following data requests need to be answered to complete the PSA: #'s 63-65, 84-86, 94, 115, 117, 118, 126 and 128-132. While the regulations allow 30 days for written responses to the enclosed data requests (meaning all data responses would be due to the Energy Commission staff on or before October 20, 2008), we understand from your staff that we will receive responses to the above listed data requests prior to that 30 day allowance. If you are unable to provide the information requested, need additional time, or object to providing the requested information in the manner discussed above, please send a written notice to the Committee and me within 20 days of receipt of this notice. The notification must contain the reasons for the inability to provide the information or the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)). As always, if you have any questions, please call me at (916) 654-8494, or email me at mmonasmi@energy.state.ca.us.

Sincerely,

Mike Monasmith
Energy Facility Siting Project Manager

Enclosure

cc: POS

City of Carlsbad
Office of the City Manager

September 11, 2008

DOCKET
07-AFC-6
DATE SEP 11 2008
RECD. SEP 11 2008

Mike Monasmith
Energy Facility Siting Project Manager
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

CARLSBAD ENERGY CENTER PROJECT (07-AFC-6) – CITY OF CARLSBAD
THIRD SUBMITTAL OF DATA REQUESTS (#62 - #141)

Dear Mr. Monasmith:

The City of Carlsbad has received NRG's recent project changes (August 2008), known as the Carlsbad Energy Center Project Enhancements and Refinements (PEAR). The City has reviewed NRG's alterations and submits the following data requests for your consideration.

Clearly, the complexity of this project has increased due to NRG's recent changes. The City of Carlsbad appreciates the opportunity to raise questions and issues that will help reveal the true impact that this new power plant will have on our community's quality of life.

General

Background
There have been a number of changes to the project area, including approval of the Carlsbad Seawater Desalination Plant (CSDP), the Vista/Carlsbad Interceptor Sewer Improvement project (sewer interceptor), the anticipated widening of I-5, and the Applicant's proposal to construct a new power plant (Carlsbad Energy Center Project), including the relocation of a regional switchyard and the construction of a project specific desalination plant.

62. Provide a comprehensive site plan which includes CSDP, the sewer interceptor, the I-5 widening, and the CECP.

Construction

Background
The Applicant states that laydown areas described in the AFC are applicable to project enhancements and refinements.

63. Confirm that proposed laydown areas account for new SDG&E substation, ocean water purification system and tank removal.
64. Provide aerial photographs illustrating project components along with temporary laydown/staging areas required.

65. Provide coordinated construction schedule and laydown schematic for the CECP, the CSDP and the sewer interceptor.

Air Quality

Background
The Applicant states that there are no changes in the air emissions and/or operations of the CECP resulting from proposed project enhancements and refinements; however, Section 1.1 of the Project Enhancement and Refinement Document states that "the inclusion of the ocean-water purification system includes the construction and operation of new pipelines to CECP from the existing EPS ocean water system". The revised modeling analysis was performed to evaluate the impact of the revised stack height (139 feet) on ambient air quality, but not the potential changes in emissions from other project enhancements and refinements.

66. Analyze potential air impacts from operation of the proposed ocean-water purification system.

Background
The Applicant has not considered the regulatory framework that exists in regard to climate change and how the project is or is not consistent with the goals or strategies of the California Global Warming Solutions Act of 2006 (AB 32) or related Executive Orders. The Applicant has not included an analysis of GHG emissions or the impact that the CPEC and proposed project enhancements and refinements would have on the carbon footprint in the region.

67. Provide an analysis of the project's impact on global climate change. Please examine the GHG emissions that would be generated from the proposed CECP, including the proposed project enhancements and refinements.

Background
As stated in Health and Safety Code Section 38501(a), potential adverse effects of climate change include a rise in sea levels resulting in displacement of businesses or residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases. Clearly, a rise in sea level would have adverse effects on the operation of the CECP, and in particular the ocean-water purification system, including the seawater intake system and open-ocean discharge.

68. Provide an analysis on what impacts sea level rise would have on the seawater intake system and open-ocean discharge.

Background
The Revised Table 5.1-1 and 5.1-2 illustrate the maximum emissions during construction of the proposed project.

69. Please identify what emission thresholds are significant and whether or not these values will be less than significant due to the new changes in design.

70. Provide an analysis and justification as to why the values changed due to the increased project refinements.

71. Provide sufficient detail in either Section 5.1 or Revised Appendix 5.1E as to what measurement tools were utilized in order to create the emissions data. Moreover, if URBEMIS was utilized, please indicate that the most recent version (9.2.4) was used.

72. Identify and evaluate any cumulative air quality impacts. Will the CSDP and the Sewer Interceptor be built at the same time as the proposed project?

Background
Section 5.14.4.1 states that as part of the tank demolition and soil remediation activities, approximately 7,500 cubic yards of soil and 3,800 tons of metal and debris will be removed to an offsite facility. Based on a typical load value of 20 cubic yards per truck, this would correspond to approximately 565 round truck trips for such removal.

73. Does the original air quality evaluation include these truck trips? If not, were they included in the updated construction emission values?

Background
The PEAR describes the removal of oil tanks 4, 5, and 6 and the disposition of the heavy oil that remains in the bottom of the tanks.

74. Does NRG plan to mix this oil and burn it in units 4 or 5? If so, what are the impacts to air emissions?

75. Give the total number of hours that Encina unit 4 burned oil in each of the past five years (complete years 2007, 2006, 2005, 2004 and 2003).

76. Give the total amounts of oil burned by Encina 4 in each of the past five years (complete years 2007, 2006, 2005, 2004 and 2003).

77. Give the total number of hours that Encina 5 burned oil in each of the past five years (complete years 2007, 2006, 2005, 2004 and 2003).

78. Give the total amounts of oil burned by Encina 5 in each of the past five years (complete years 2007, 2006, 2005, 2004 and 2003).

79. Give emission values for Encina Unit 4 for NO2, CO2, SO2 and PM10 operating with the fuel mixture referred to by CECP (the heavy oil and light oil mixture).

80. Give emission values for Encina Unit 5 for N) 2, CO2, SO2 and PM10 operating with the fuel mixture referred to by CECP.

Biological Resources

Ocean-water Purification/Desalination:

Background
It appears that the CECP will operate under the existing lease granted to the Encina Power Station by the California State Lands Commission (SLC).

81. Submit a copy of the State Lands Commission lease which includes SLC's authorization to construct and run a desalination facility at the CECP.

Background
The proposed ocean-water purification system will have impacts on marine organisms related to impingement and entrainment. Based on extensive analysis conducted as part of the CSDP, alternate intake designs such as vertical and horizontal intake wells are available which could deliver the quantity of water needed for the proposed system.

82. Please describe what alternative intake designs were considered.

Background
Section 5.2.6 of the PEAR states that "entrainment of larvae and other planktonic organisms from (Agua Hedionda Lagoon) is an unavoidable consequence of operation of the CECP ocean-water purification system".

83. Provide an analysis of reasonable, feasible and prudent alternatives that could avoid entrainment and impingement losses.

Background
The primary basis for concluding that the ocean-water purification system will not result in adverse effects on marine organisms appears to be reliance on a "net reduction" in impingement and entrainment effects related to the retirement of the Encina Power Station (EPS) generating units 1, 2 and 3. Further, Appendix 5.2C, on page 1, states: "However, taking into consideration that the CECP will withdraw seawater from the power station cooling water flow, and would require withdrawals independently of EPS units 4&5, this assessment has been conducted with the intent of Section 316(b)". It appears that based on these facts, the CECP represents a new power plant facility that relies upon a CWIS and withdraws quantities of seawater in excess of 2 MGD, and is therefore subject to compliance with 316(b) Phase I requirements, including mitigation.

84. Explain how the CECP complies with the 316(b) Phase I regulations, considering the fact that the discussion in the application presents a clear reliance of the CECP on the Cooling Water Intake Structure (CWIS) for the EPS, and suggests that the CECP will continue to rely on the CWIS even without EPS operation?

Background

Section 5.2.4.2 of the CECP Project Enhancements and Refinements document (page 5-10) states that "the retirement of EPS Generating Units 1, 2, and 3, ...are considered an integral part of compliance with Clean Water Act Section 316(b) at EPS". However, the analysis fails to explain how the CECP itself complies with 316(b) requirements. Based on the facts presented in 5.2-2, above, the CECP would be subject to the much stricter Phase I 316(b) requirements, since it is a new power plant. However, no analysis of compliance with 316(b) is provided.

85. Explain how the analysis can assume "credit" for 316(b) compliance, when regulatory requirements for the new activities that are subject to 316(b) are not addressed.

Background

The analysis (Appendix 5.2D at S-1) inappropriately applies the analysis and mitigation standards of Phase II 316(b). As noted above, the CECP is a new power plant, and therefore is subject to the 316(b) Phase I regulations pertaining to new power plants. Notwithstanding that fact, the analysis concludes that the CECP would not result in adverse environmental impacts (AEI), and therefore would not be subject to Best Technology Available (BTA), which would presumably involve some level of mitigation, since as stated in the application materials, the impact on marine organisms is unavoidable, and therefore design modifications are not available to reduce or avoid impacts. However, as support for the conclusion that the CECP would not result in AEI, the analysis (Appendix 5.2D at S-1) relies in part on studies that found no AEI at EPS, because the studies "attributed the absence of large effects for most species to compensatory mechanisms that are probably acting on the populations at some level". Therefore, the conclusion that there would be no AEI for the CECP depends upon compensatory measures that would not be in place without the operation of the EPS. However, the analysis of impingement and entrainment effects includes a CECP operating scenario with no EPS operation, as noted in 5.2-2, above. Therefore, it is reasonable to conclude that once the EPS discontinues operation, the compensatory measures that are relied upon for a finding of no AEI for the CECP would no longer be available.

86. Explain whether the analysis assumes continuation of the existing EPS compensatory measures pursuant to the existing 316(b) permit for the EPS. If so, please provide assurances that such commitments will permanently tied to the CECP (e.g. as conditions of its 316(b) permit or through another mechanism). If no assurances are to be provided, please revise the analysis to account for the effects of discontinuation of the compensatory measures currently provided by EPS.

Background
The PEAR states that retirement of Encina Units 1, 2 and 3 will reduce sea water intake volumes by 224.64 mgd. The City is concerned that this characterization accurately reflects the reduction in the sea water intake. A daily maximum may not be the appropriate measure.

87. Give the amount of sea water utilized for once through cooling for Encina Unit 1 for each of the past five years (complete years 2007, 2006, 2005, 2004 and 2003).

88. Give the amount of sea water utilized for once-through cooling for Encina Unit 2 for each of the past five years (complete years 2007, 2006, 2005, 2004 and 2003).

89. Give the amount of sea water utilized for once-through cooling for Encina Unit 3 for each of the past five years (complete years 2007, 2006, 2005, 2004 and 2003).

Background
The City notes that the ion exchange system will result in discharges to the ocean through the existing across-the-beach ocean outfall system. The City is concerned with the reliability of this system.

90. Provide the vendor(s) of the proposed ocean water purification system.

91. Provide details of the proposed system, including model numbers for major equipment.

92. Provide guarantees for availability for the ocean water purification system.

93. Provide any operating histories of the same units operating at other locations.

94. Identify how much storage will be available if the first-stage reverse osmosis system cannot, for any reason, deliver the brine to the ocean outfall.

Hazardous Materials Handling

Background
Section 5.5.3.2 of the PEAR states that the construction and operation of the new SDG&E 230-kV switchyard will be similar to the electrical grid interconnection discussions provided in the AFC.

95. Include sufficient detail and analysis within the Project Enhancement and Refinement Document regarding potential hazardous materials to substantiate that claim.

Land Use

Background
Section 5.6 states that the AFC originally evaluated the CECP and found it consistent with the Agua Hedionda Land Use Plan segment of the City of Carlsbad Local Coastal Program and "other applicable City LORS related to modernization of the existing EPS." It then concludes that these additional components, including the ocean water purification system, are also consistent.

96. Provide sufficient detail and analysis within the Project Enhancement and Refinement Document regarding land use consistency issues.

97. The analysis provided in the application materials does not address California Coastal Act Requirements. As an example, please indicate how the project would be consistent with polices related to coastal dependent uses. If the coastal-dependency of the CECP is based on proximity to source water for the ocean-water purification system, then analysis and rationale of alternatives that involves other sources of water supply should be addressed.

Noise

Background
The Applicant's interpretation of the City's Municipal Code Section 8.48.010 is not accurate. Section 8.48.010 is not an implicit authorization for construction activities 24-hours per day, 7 days per week, provided the activities do not create disturbing, excessive, or offensive noise. In addition, it should be noted that what is considered "disturbing, excessive, or offensive noise" is different for daytime and nighttime hours. The proposed nighttime construction work for the CECP and proposed project enhancements and refinements would likely interfere with sleep at nearby sensitive receptors, which would be considered "disturbing, excessive or offensive noise" and would be a potentially significant impact.

The City therefore does not accept the Applicant's Proposed Condition of Certification (Noise-6) as included in the 2007 AFC and 2008 Project Enhancement and Refinement Document. Mitigation is necessary to reduce noise impacts generated from proposed nighttime construction activities to acceptable levels approved by the City. Furthermore, it should be noted that the City's Municipal Code does not specifically allow an exception to the hours of construction for non-emergency work or work within 1,000 feet of a residence.

98. Specify all noise sensitive land uses within 1,000 feet of the proposed project site and conduct a noise analysis of potential noise levels at these receptors during construction activities. If different construction activities are proposed during daytime and nighttime hours, the Applicant should specify what equipment is proposed when and incorporate usage factors for proposed equipment in order to model noise levels generated during specific construction activities.

99. Include a determination of noise impacts for daytime and nighttime construction activities regardless of whether a variance or exception to the noise level limits is anticipated. An exception or variance would allow a project to exceed certain noise level limits, but would not reduce an impact to below a level of significance. Mitigation must be incorporated to reduce impacts to below a level of significance or an unmitigated impact would result.

Background
The City is concerned that nearby residents and others in close proximity to project construction could be impacted by construction noise.

100. Indicate if there will be any blasting on the site.

101. Will the heavy equipment have back-up beepers?

Public Health

Background
The revised document includes a dispersion model based upon the change in design of the stack and concludes that only minor changes to the modeling results will occur due to this increase in height. Upon review of the material and New Appendix 5.9C, all data appear to only be related to operations of the facility.

102. Did the original AFC evaluate potential construction impacts on public health during the destruction of tanks 5, 6, and 7 along with the removal of contaminated soil and soil remediation activities? Did the toxic air contaminant exposure assessment evaluate Diesel Particulate Matter during construction?

103. The updated public health section does not appear to discuss cumulative impacts. It is also unclear from New Appendix 5.9C, if cumulative impacts were considered as part of the toxic air contaminant assessment. Did the Applicant consider the impact of the CDSP on these contaminant levels?

Soils

Background
Section 5.11.2.2 discusses wind erosion of surface material and how the potential erosion was calculated as a result of grading and exposed soil.

104. The analysis states the default particulate matter (PM) emission factor was utilized from URBEMIS2002. Please provide support in the record as to why this version was utilized as opposed to one of the most recent versions of URBEMIS and/or provide support as to why this would not change the emission factors. Additionally, there were two different versions of URBEMIS in 2002 (V8.7 and V7.5). Please clarify which version was utilized.

Background
The PEAR states that the estimated wind erosion of exposed soil is approximately 5.3 tons of PM over the course of the project, but that this value will be reduced to 1.9 tons by "mitigation measures such as water application (see mitigation measures, below)." The document does not list any of these mitigation measures aside from a reference to "water application". Moreover, the document does not establish or discuss the importance of reducing the level to only 1.9 tons.

105. Provide sufficient analysis and detail within the Project Enhancement and Refinement Document.

Background
The CECP intends to dispose of the approximately 11,300 tons of soil laden with oil at the Otay Landfill.

106. Provide the daily cover requirements for the Otay Landfill.

107. Provide evidence that the Otay Landfill will take soil of the quality likely to lie under tanks 5, 6, and 7.

108. If the soil must be taken to Adelanto, provide:
(a) The distance the trucks must travel.
(b) Information that indicates that the Adelanto facility can take the soil.

Traffic and Transportation

Background
Section 5.12 states that there will be no increase in the peak construction workforce or construction truck deliveries and therefore impacts will be similar to the previous evaluation in the AFC.

109. Provide support in the analysis that the inclusion of the tank demolition and soil remediation will not increase the value of the number of truck deliveries anticipated during construction of the proposed project.

Visual

Background
Section 5.13.1.1 includes a discussion of the new SDG&E switchyard as well as visibility issues. The document concludes that the new switchyard "will not be particularly noticeable from nearby along Cannon Road" and will only result in a "minor visual change to the existing setting".

110. According to New Figure 5.13-3A, it only appears that four photo viewpoints were included. Why did the photo analysis not include any photos looking south? What about residents located north of the Agua Hedionda Lagoon or from the hotel located due south of the proposed switchyard?

Background
Numerous visual simulations are provided to illustrate the visual impacts of increasing the height of the stack to 139 feet. The document concludes the increase in stack height will not change the regional visual context or the landscaping setting and will not result in a change of the visual character of the project.

111. The analysis and discussion lacks sufficient detail regarding the impact of the 139 feet stack height. Please provide greater detail as to why increasing the height from the original 100 feet to 139 feet will not be a significant increase to the viewshed, nor a significant visual impact.

Background
The City of Carlsbad understands that the proper stack (one that meets EPA standards) is now being considered by the CECP.

112. Does the new stack configuration have a base circumference different from the 100 foot stack?

Background
The increased stack heights present a greater visual impact. The City is concerned that the visual simulations (Section 5.13) do not reflect the true impacts that will be borne by its citizens.

113. Prepare visual simulations of the new project configuration including Caltrans' 8-lane and 12-lane I-5 widening options.

114. If the simulations, which depict the I-5 widening, result in the loss of shielding vegetation, prepare simulations from viewsheds which show the CECP with the loss of vegetation.

Waste Management

Background
Section 5.14.4.3 states that waste streams generated during construction of the ocean-water purification system "will be similar to the types of wastes described in Section 5.14 of the AFC". Therefore, the document concludes that no additional analysis is required.

115. Include sufficient detail and analysis within the Project Enhancement and Refinement Document regarding the construction of the new ocean-water purification system.

116. Analyze the impacts on waste systems and landfill capacity for the removed solids and spent filter media.

Water Resources

Background
Section 5.15.3.1 concludes that as part of the new project components, an additional 13.5 acres of land will be disturbed, but that by updating the original SWPPP and implementation of appropriate BMPs, this additional land disturbance will have no impact during either construction or operations.

117. The Applicant should include additional detail and support to illustrate how the inclusion of 13.5 acres to the original acres evaluated in the AFC will be mitigated to a less than significant level.

Background
The document states that the waste discharge from the reverse osmosis stream will fall within acceptable salinity discharge levels.

118. Are salinity levels the only potential contaminants that may be present in the reject stream? The Project Enhancement and Refinement Document should provide additional detail regarding the substance of the reverse osmosis reject stream.

Background
In the description of the new pipeline to the ocean outfall, a map shows the pipeline route crossing the railroad tracks.

119. Indicate whether the pipeline will go under or over the railroad tracks.

120. Has CECP obtained permission from the applicable railroads to cross the rail tracks? If so, please provide documentation.

121. Describe the construction practices that will be used so that rail traffic will not be disrupted.

Background
The CECP proposed Ocean Water Purification system appears to be the only source of water available to the CECP (the City cannot serve the project). Therefore, reliability of the system is of utmost importance. The City does not want to be in a position of taking water from other users in the future to serve the CECP if the purification system fails.

122. Please provide the name of the vendor of the purification system and the model number(s), so that the system can be identified.

123. Please provide a narrative of the operating history of the unit selected and identify at least five locations where the purification system is currently in operation.

124. Provide reliability guarantees from the vendor (block out any financial data).

125. Provide the process flow guarantee from the vendor (block out any financial data).

Background
The description of the ocean water to be used for the water purification system (Section 2.3.2) states that the maximum daily amount of water will be 1.22 million gallons/day with power augmentation. With dilution mixing, the total daily amount will be 4.32 million gallons per day. The City is concerned that this is a true reflection of the future operating levels.

126. Please confirm that these calculations are for a 24-hour day (operational day w/8 hours of P.A.).

127. If so, does CECP accept a condition of certification restricting the operation of the ocean water purification system to eight hours per day?

128. If not, please submit revised figures showing the operational ocean water requirements for a 24-hour day (if this is the appropriate assumption).

Background
The description of the ion exchange trailer system is very important, as there appears to be no back-up supply of water for the CECP. The City is interested in the following:

129. Please confirm that the figures on table 2.1 reflect 24-hour day operation. If not, please provide this information.

130. Please indicate whether a single trailer will suffice for 24-hour per day, seven day per week operation.

131. With 24-hour per day, seven day per week operation, how many ion exchange trailers will be used in one week?

132. Describe any storage planned for the spent resin in the event the trailer, for any reason, cannot take the waste from the reverse osmosis system.

Background
The City is concerned that there will be sufficient cooling water available to the revised CECP.

133. Please give the dimensions and capacity of the water storage tank mentioned in section 5.5.3.1.

134. Please give the number of hours of operation that this storage will provide.

Background
The CECP intends to mix the Reverse osmosis reject brine with the Units 4 and 5 residual source water throughput from units 4 and 5 (Section 5.15.3.3). The City is concerned that this is the proper assumption.

135. Please provide the total number of hours that Encina Unit 4 operated for the years 2003, 2004, 2005, 2006 and 2007.

136. Provide the total number of hours that Encina Unit 5 operated for the years 2003, 2004, 2005, 2006 and 2007.

137. Assuming that the units will be economically dispatched, provide heat rates for Encina Unit 4 and Encina Unit 5.

138. Please provide start-up and ramp times for Encina Unit 4 (time to bring the unit from a cold start to full operating mode).

139. Please provide start-up and ramp times for Encina 5 (time to bring the unit from a cold start to full operating mode).

Background
CECP states that it will seek required approvals for the waste water discharge "in the event that reclaimed water is not available". The City has been clear that reclaimed water is not available to the CECP. The City and its citizens want assurances that this water plan will be approved.

140. Please prepare and file the Report of Waste Discharge and NPDES Permit Application to the Water Board.

141. Please file a copy to the application to the CEC Staff following the filing.

Should you have any questions regarding this letter, please feel free to contact me at (760) 434-2820 or jgaru@ci.carlsbad.ca.us.

Sincerely,

Joe Garuba
Municipal Projects Manager
City of Carlsbad
(760) 434-2820

cc: Proof of Service (Rev. 9/10/2008; electronic service only)