

DOCKETED

Docket Number:	07-AFC-06C
Project Title:	Carlsbad Energy Center - Compliance
TN #:	203149
Document Title:	Data Request Set 3 (Nos. 67-85) to Project Owner
Description:	N/A
Filer:	April Dearbaugh
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	10/2/2014 4:29:55 PM
Docketed Date:	10/2/2014

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov



October 2, 2014

George L. Piantka, PE
NRG West Director, Environmental Business
5790 Fleet Street, Suite 200
Carlsbad, CA 92008

Dear Mr. Piantka:

CARLSBAD ENERGY CENTER PROJECT AMENDMENT (07-AFC-6C) DATA REQUESTS, Set 3 (nos. 67-85)

The California Energy Commission staff continues to review the petitions to modify the licensed Carlsbad Energy Center Project (CECP), and requires additional information pursuant to Title 20, California Code of Regulations, section 1769(a)(1)(E), necessary to: 1) more fully understand the project; 2) assess whether the new facility will be constructed and old facilities demolished in compliance with applicable regulations; 3) assess whether the project will result in significant environmental impacts; 4) assess whether the facilities will be constructed and demolished in a safe, efficient, and reliable manner; and, 5) assess potential mitigation measures.

This set of Data Requests (Set 3) includes the following technical disciplines: Noise & Vibration (nos. 67-72), Socioeconomics (no. 73), Transmission System Engineering (nos. 74-76), and Visual Resources (nos. 77-85). Staff requests that responses to the enclosed Data Requests be submitted as soon as possible (before October 31, 2014). Given the necessary schedule of discovery and analysis for this proceeding, staff strongly encourages the petitioner to submit thorough data responses in order to avoid potential schedule delays for completion of the Preliminary Staff Assessment (PSA).

If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send a written notice to both Commissioner Karen Douglas, Presiding Committee Member for the Carlsbad Energy Center Project Amendment, and me as soon as possible, but no later than 20 days after receipt of the data requests. If you have any questions, please call me at (916) 654-4894, or E-mail me at mike.monasmith@energy.ca.gov.

Sincerely,

Mike Monasmith
Siting Project Manager

Enclosure:

Technical Area: Noise and Vibration

Author: Joseph Hughes and Shahab Khoshmashrab

BACKGROUND: ENCINA POWER STATION DEMOLITION IMPACTS

The May 2, 2014 Petition to Amend (PTA) (TN: 202287) requests that demolition and removal of the Encina Power Station (EPS) be included as part of the amended Carlsbad Energy Center Project (amended CECP). Section 5.7.4 of the PTA states that demolishing and removing the EPS would utilize similar construction equipment and consist of activities similar to the demolition and removal activities approved for the licensed CECP, thus no additional demolition noise impact estimates were provided. However, as indicated in Data Responses, Set 1, no. 3 (TN: 202938), demolition of the 400-foot-tall exhaust stack would utilize equipment and demolition methods beyond what was previously analyzed and approved. It is unclear what the noise impacts from these activities (at 400 feet above ground and at ground level) would be at nearby sensitive receptors. In addition, these activities would occur closer to sensitive receptors than previously analyzed.

Data Responses, Set 1, no. 3, explains that the current plan for the demolition of the EPS exhaust stack would be the use of mechanical dismemberment. Specifically, an engineered mast-climbing platform system would be installed on the exterior of the stack. Demolition work would begin starting at the top of the stack and move downwards using work crews or robotic units equipped with hammers, crushers, or shears. As the crews break apart the stack, the material would be pushed inside the stack where it is funneled to the base. The platform would be lowered as necessary to remove each section until the remaining stack height is approximately 80 feet. At this point, the mast climbing platform system would be removed and the remaining portion of the stack would be demolished using high-reach excavators (equipped with cracker/shear attachments).

Section 5.7.2 of the PTA explains that the closest residential area to the licensed CECP is located north of the Agua Hedionda Lagoon, approximately 1,750 feet from the facility site. However, demolition of the EPS would occur approximately 400 feet from the nearest residential receptor (400 feet from the southwest corner of the power plant building and 800 feet from the 400-foot-tall stack). This receptor is identified as receptor M4 in Figure 5.7-3 of the original Application for Certification (AFC) for the CECP (07-AFC-06). Staff needs to analyze the noise impacts from use of hammers, crushers, or shears for mechanical dismemberment at 400 feet above ground, and the noise and vibration impacts from material falling from 400 feet to inside the base of the stack, in addition to any other concurrent demolition activities associated with other onsite features of the EPS facility, including the power plant building that houses Units 1-5, associated boilers, turbine lube systems, air emissions control devices, fans, condensers, decommissioned fuel oil lines, sumps and ancillary structures including a 17-megawatt gas turbine unit, multiple transformers, above-ground ammonia storage tanks and other buildings as described in Data Responses, Set 1, no. 1, and Data Responses, Set 2A, no. 64.

DATA REQUESTS

67. Please provide the noise impacts at M4 from the use of hammers, crushers, or shears for mechanical dismemberment, combined with the noise impacts from material falling from 400 feet to the inside base of the stack, in addition to any other concurrent demolition activities and equipment use as part of removal of the EPS.
68. Please provide the noise impacts at M4 from the use of high-reach excavators (equipped with cracker/shear attachments) at ground level combined with the noise impacts from any other concurrent demolition activities and equipment use as part of removal of the EPS.
69. Please provide the vibration impacts at M4 from the use of hammers, crushers, or shears for mechanical dismemberment at 400 feet above ground and material falling from 400 feet to inside the base of the stack, in addition to the vibration impacts from any other concurrent demolition activities and equipment use as part of removal of the EPS.
70. Please provide a description of the assumptions used and the approaches taken in preparing responses to the above Data Requests, nos. 67 through 69.
71. Please describe how sound impacts may be influenced as a result of a noise source being located 400 feet above sensitive receptors.
72. If any potentially significant impacts are identified as a part of the responses to Data Requests, nos. 67 through 69, please describe mitigation measures that could be implemented to reduce those impacts (e.g., installing sound reduction blankets on the mast-climbing platform system, sound walls at the base of the stack, and/or vibration dampers).

Technical Area: Socioeconomics

Author: Lisa Worrall

BACKGROUND: TRANSMISSION FACILITY PROJECT WORKFORCE

The PTA schedule identifies the start of construction for the amended CECP in October, 2015; commercial operation of the amended CECP in November, 2017; start of EPS demolition in November, 2018 (following commercial operation of the amended CECP); and, completion of EPS demolition in November, 2020 (PTA, pgs. 1-5 & 1-6). This schedule reflects a one-year “EPS decommissioning” period between November, 2017 and November, 2018 as a period requiring no needed workforce (PTA, Tables 2.1-4 & 2.2-2).

DATA REQUEST

73. During the one-year EPS decommissioning period (between the start of commercial operation of the amended CECP, and the start of demolition of EPS), what activities, if any, would occur? If there are activities occurring during this one-year period (such as the movement of equipment and material, or demolition preparation), would any workforce beyond the existing EPS operations workforce be needed? If so, please provide a schedule showing the workforce by labor craft by month and state what work they will be doing.

Technical Area: Transmission System Engineering

Authors: Ajoy Guha, P. E. and Mark Hesters

INTRODUCTION

Applicant (and CAISO-provided) responses to Transmission System Engineering (TSE) Data Requests from Set 1, submitted on July 16, 2014 and September 18, 2014 have provided staff the ability to review key components of the Carlsbad Energy Center LLC's May 2, 2014 Petition to amend (PTA) the License for the Carlsbad Energy Center Project (licensed CECP). There are, however, a few areas in which staff seeks further clarification during this period of discovery.

The first area of interest in which staff continues to seek clarification regards the specifics on location, height and associated equipment location on the 138 kV tangent pole; and, the 138 kV generator (gen) tie line location that will run on the steel poles with the 230 kV gen tie line.

Areas where additional data remains necessary include:

- specific information on interconnection facilities, especially in terms of their location within the amended CECP footprint and connected right-of-ways within the EPS property;
- the ROW route parameters and locations for all newly proposed generator tie lines;
- the types of transmission poles proposed for use, and the specific location of each in relation to one another (span distances), and as well as in relation to key facility features, perimeters and adjacent non-CECP project features and rights-of-way;
- one-line diagram details for the three CECP switchyards and generator tie lines;
- construction and architectural design details of the structures and support apparatus by which transmission lines will cross over the double-tracked, North County Transit District Railway railroad crossing and right-of-way.

Collectively, these remaining data requests fall under the licensing authority of the California Energy Commission as constituting a complete description, which is required in order for staff to appropriately analyze the requested TSE modifications sought by the petition for the licensed CECP. Importantly, these remaining TSE data requests will enable staff to determine if the amended CECP complies with applicable laws, ordinances, regulations and standards (LORS), and will not create significant, unmitigated impacts to the environment, public health and/or engineering and transmission facilities.

BACKGROUND: GENERATOR TIE LINES PHYSICAL LAYOUT PLAN

The submitted gen tie line routes descriptions and diagrams in the Data Responses, Set 1 are incomplete (the scale of the drawings do not appear to be correct) as shown in Figures DR 23-1 & DR 23-2. While staff appreciates the information provided, we nonetheless require more detailed and accurate information for the certification process.

DATA REQUEST

74. Please provide a discussion, and revise and resubmit the physical layout of **Figures DR 22-2, DR 23-1 and DR23-2** with corrected scale of the drawings that reflects the following requested information:
- a. For the proposed 230 kV and 138 kV gen tie lines along the 125-foot-wide right-of way (ROW) route, provide locations of the overhead poles, span lengths, the type of each pole including their height above ground level and underground cable termination poles. Also provide the total length of each 230 kV and 138 kV overhead gen tie line.
 - b. Please provide the distance(s) between the newly proposed overhead gen tie lines along the eastern edge of the amended CECP (two most northerly 230kV poles, plus the new in-between 230kV pole separating the two following their movement from the top of the bowl, approximately ten feet west to the eastern edge of the lower perimeter road, which is approximately 25-ft below grade. Please provide the approximate distance of the three gen tie lines from the expected western right-of-way (ROW) boundary of the Caltrans North Coast Interstate-5 HOV/Management Lane Project (I-5 Widening Project). Please revise existing **Figure DR 23-1** to illustrate the above.
 - c. Provide the distance(s) of the overhead 138/230kV Line Cross-section Double Circuit pole Configuration gen tie lines along the southern boundary fence line of the proposed CECP, beginning at the furthest eastern point (near generation units 10 & 11), and ending at the termination point where the 138kV and 230kV lines separate.
 - d. Provide the distance(s) of the 230 kV underground gen tie line (from the point where the line is first placed underground, near the NE corner of the existing SDG&E 138 kV switchyard, to the point where it emerges in the expanded SDG&E 230 kV switchyard.
 - e. Please provide detailed 3-phase diagram(s) (plan and side view) showing positions of the two H-pole take-off structures (refine Figure DR 22-2) for the gen units outlet lines in each amended CECP switchyard, the transitions between gen outlet lines and gen tie line(s) in the line dead end pole.
 - f. Please include the position and relative height and size of the GE LMS 100 simple-cycle generation units based on specific size parameters listed in **PTA Talbe 5.1E-1** (Equipment Structure Dimensions), in relation to Figure **DR 22-2** (as was discussed during the September 24, 2015 public workshop in Carlsbad).

BACKGROUND: TRANSMISSION POLE INFORMATION & RAILWAY CROSSING

PTA Section 3.3.1 “**Electrical Clearances**” on page 3-5 indicates that the final design of the Amended CECP will comply with California Public Utilities Commission (CPUC) General Order (GO) 95, as well as CPUC decision 93-11-013. However, the submitted 138/230kV Line Cross-section Double Circuit pole Configuration design diagrams are incomplete without graphic representation of ground wire and any necessary communication cable positions and placement on the poles. (Data Response to TSE Data Request set 1).

DATA REQUESTS

75. Resubmit Steel pole **Figures 24.1, 24.2 and 24.3** showing the specific locations of the ground wire (size: ½ inch EHS steel), and any required communication cable/wire, include their respective clearances from the ground level.
76. For the overhead gen tie lines crossing over the North Coast Transit District Rail Corridor (NCTD) double tracks, please submit overhead line diagrams (plan and side views) showing clearance of the lowest conductor of the line in feet above the railway tracks, as well as positions of the poles (including type of poles) on both sides of the NCTD railway tracks.

Technical Area: Visual Resources

Author: William Kanemoto

BACKGROUND: OVERLAY OF CECP SITE PLAN ON I-5 WIDENING PREFERRED ALTERNATIVE

Because the precise layout of the Caltrans North Coast Interstate 5 HOV/Management Lane Project (I-5 Widening Project) was not known with certainty at the time of preparation and publication of the Carlsbad Energy Center Project (CECP) Final Staff Assessment (FSA) in November, 2009, or the licensed CECP Final Decision on May 31, 2012, the physical details and specifics of Condition of Certification **VIS-5**¹ were not fully prescribed. However at this time, because the I-5 Widening Project has been approved, and the preferred alignment alternative (8+4 with Barrier) has been released, specific widening information is now available. Accordingly, staff requires accurate information on the relationship between the final I-5 widening alignment and the proposed amended CECP layout, in order to confirm the adequacy of visual mitigation measures embodied in **VIS-5** in terms of the “buffer zone” and its capacity to fulfill both visual and power plant perimeter safety goals described in **HAZ-8**.

DATA REQUEST:

77. In order to better understand the extent of the impacts of the I-5 Widening Project Locally Preferred Alternative (LPA) on which impacts and mitigation measures for the amended CECP can be determined as appropriate, please provide the following Computer Aided Design (CAD) and image overlays:
- an accurately scaled and registered overlay of the Computer Aided Design (CAD) layout of the amended CECP site plan (PTA Figure 2.1-1) over the relevant portions of CAD layouts for the Caltrans I-5 Widening LPA (8+4 w/ Barrier Alternative).
 - Please provide the above overlays in two forms: as CAD files (in Autocad file format) with separate layers for existing conditions with topography, proposed layouts, proposed grading; and as mapping in image file form.
 - Please also provide both overlays (CAD and image) on rectified aerial photography for greater ease of public interpretation.

BACKGROUND: ARCHITECTURAL AND GRADE ELEVATIONS

The project description in the PTA (Section 2, and elsewhere in the document) lacks sufficient physical description and dimension information related to the major physical features to be modified for the proposed project, including the combustion turbines and other features listed in **PTA Table 5.1E-1** (Equipment Structure Dimensions), in order for staff to fully understand their visual effects.

¹ Cumulative Impact Buffer Zone, Coordination with Caltrans, and Mitigation Plan

DATA REQUEST:

Please provide accurately-scaled architectural cross-section and elevations of all amended CECP generation units (Units 6-11), and related major physical electrical-generation equipment and components (turbines, exhaust stacks, etc.). Please include heights above grade called out for major components, such as tops of exhaust stacks for the GE LMS 100 generation units, and associated 138kV and 230kV transmission poles and infrastructure, etc. In addition, please provide the actual proposed grade elevations for both the existing lower and upper berm (perimeter / access) roads, and adjacent portions of the proposed I-5 western right-of-way boundary under the Locally Preferred Alternative.

BACKGROUND: CROSS-SECTIONS SHOWING RELATIONSHIP BETWEEN PROJECT SITE AND I-5

The cross-sectional relationships of the amended CECP eastern boundary with that of the proposed western right-of-way boundary of the widened I-5 under the LPA are critical to understanding the long-term visual effects of the amended CECP, and to the design of a specific Cumulative Impact Mitigation Plan for implementation of Condition of Certification **VIS-5** in a timely and efficient manner to achieve effective mitigation of all potential cumulative visual impacts. Staff requires a better understanding of these physical relationships, and of the design intent for implementation of **VIS-5**.

DATA REQUESTS

78. Please provide schematic cross-sections showing the relationship of the existing I-5 and amended CECP features such as landscaped berm, access roads, and storage tanks.
79. Please provide schematic cross-sections showing the relationship of the proposed I-5 Widening Project (LPA), with the proposed grading and project features of the amended CECP, including proposed concept(s) for implementation of **VIS-5**. Features depicted in the cross-sections should include the new proposed amended CECP fence line, proposed new Caltrans right-of-way (after I-5 Widening Project); all six GE LMS 100 generation units; proposed 230 and 138 kV transmission poles and gen-tie lines; and, the landscaped buffer as called for in **VIS-5**. In the schematic cross-sections, please provide dimensions such as width, grade elevation and height of the landscaped buffer, access roads, generation units, etc in order to sufficiently convey the layout concepts and design intent, particularly as they relate to implementation of visual screening as called for in **VIS-5**. Cross-sections should, at a minimum, illustrate conditions at amended CECP Units 6/7 and 8/9, with their associated re-configured 230kv gen-tie line transmission poles.
80. Please provide a scaled plan view conveying design intent for implementation of **VIS-5**.

BACKGROUND: UPDATED ARBORIST'S ASSESSMENT AND LANDSCAPE PLAN

At the time of preparation of the CECP Final Staff Assessment, an arborist's assessment of existing trees on the Encina Power Station (EPS) and future CECP site was prepared, with recommendations for tree replacement and enhancement. Since that time, substantial changes in the tree canopy have occurred along the western and northern edges of the EPS, including loss of trees due to death and disease, and construction and preparation activities related to the Carlsbad Seawater Desalination Project and the Agua Hedionda Lift Station and Sewer Line project. Observation of the site's existing tree and vegetation screening conditions clearly indicate the need for a reassessment of the site's current condition, and for replacement and enhancement of tree and shrub plantings simply to maintain existing visual screening of the power plant in the near and medium term (prior to future planned I-5 widening activities).

DATA REQUESTS

81. Please prepare an updated arborist's assessment including inventory and recommendations for maintaining the existing level of visual screening on the western and northern borders of the EPS where the amended CECP would be constructed.
82. Please prepare an updated conceptual landscape plan reflecting the recommendations of the arborist assessment for maintaining and enhancing visual screening at the amended CECP location in the near and medium term.

BACKGROUND: SIMULATION OF CUMULATIVE CONDITION

In the licensed CECP proceedings and Final Commission Decision, a key visual concern was the potential for significant cumulative visual impacts occurring between the CECP eastern border and the western border of the I-5 Widening Project. At the time of those prior proceedings, the final configuration of the I-5 Widening Project was not known. However, since that time, the I-5 LPA has been determined. Because this impact was considered potentially significant without adequate mitigation as described in Condition of Certification VIS-5; because the I-5 expansion information is now available; and, because the amended CECP modifications include placement of new features along the eastern edge of the proposed project (specifically 230/138 kV transmission poles), it is now possible to predict and depict the anticipated cumulative amended CECP / expanded I-5 condition in visual simulations. Such simulations would provide a basis for analyzing the cumulative visual impact of the amended CECP/.

DATA REQUESTS

83. Please prepare simulations of the anticipated cumulative condition of the amended CECP following I-5 widening, as seen from KOP 2 (Pannonia) and KOP 4 (Hoover Street).
84. Please provide conceptual plans and cross-sections of the amended CECP at its most easterly boundary, in relation to both the existing and expanded I-5 right-of-ways, in order to indicate the assumptions underlying the simulations.