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April 14, 2009

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Mr. Rod Jones
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Lodi Energy Center (08-AFC-10)
Data Response Set 4, Responses to CEC Staff Data Requests 75-78

Dear Mr. Jones:

Attached please find one original and 12 copies of Northern California Power Agency's responses to California Energy Commission Staff Data Requests 75 through 78 for the Application for Certification for the Lodi Energy Center (08-AFC-10).

If you have any questions about this matter, please contact me at (916) 286-0249 or Andrea Grenier at (916) 780-1171.

Sincerely,

CH2M HILL

Sarah Madams
AFC Project Manager

Attachment

cc: A. Grenier
E. Warner/NCPA

DOCKET	
08-AFC-10	
DATE	<u>APR 14 2009</u>
RECD.	<u>APR 14 2009</u>

Application for Certification

Data Response Set 4
(Responses to Data Requests 75 through 78)



LODI ENERGY CENTER

EY062008001SAC

April 2009

Submitted by



Submitted to

California Energy Commission

With Technical Assistance by

CH2MHILL

Supplement

Lodi Energy Center Project

(08-AFC-10)

Data Responses, Set 4 **(Responses to Data Requests 75 through 78)**

Submitted to
California Energy Commission

Submitted by
Northern California Power Agency

With Assistance from

CH2MHILL
2485 Natomas Park Drive
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Sacramento, CA 95833

April 2009

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Introduction

Attached are Northern California Power Agency's (NCPA) responses to the California Energy Commission (CEC) Data Request Set 4 (numbers 75 through 78) regarding the Lodi Energy Center Project's (LEC) (08-AFC-10) Application for Certification (AFC).

The responses are grouped by individual discipline or topic area. Within each discipline area, the responses are presented in the same order as the CEC presented them and are keyed to the Data Request numbers (75 through 78). New or revised graphics or tables are numbered in reference to the Data Request number. For example, the first table used in response to Data Request 36 would be numbered Table DR36-1. The first figure used in response to Data Request 42 would be Figure DR42-1, and so on.

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

Worker Safety/Fire Protection (75–78)

Background

Sections 2.1.2.1 and 2.1.14 of the Application For Certification (AFC) states that the Lodi Energy Center (LEC) will share the fire water storage tank, fire-loop system and fire pumps with the existing Combustion Turbine Plant (CTP #2), and that the system would be sized to provide two hours of fire protection according to National Fire Protection Association guidelines. However, the AFC appears to provide no specific information on the amount of water dedicated for fire protection and the types of pumps that maintain pressure in the fire loop system.

And, although the AFC contains a description of construction fire suppression systems in section 5.16.2.3.1, the systems appear to be limited to "portable fire extinguishers" and "fixed firefighting equipment" and no mention is made regarding the details or identity of the proposed fixed firefighting equipment.

Further, Section 2.1.1 of the AFC states that the primary access to the site will be located at North Thornton Road. No secondary access to the site is described. Figure 2.1-3 (an aerial photo of the site) shows two potential access roads to the site, but neither is labeled. All power plants certified by the Energy Commission must comply with all Laws, Ordinances, Regulations and Standards and having two access points is a requirement.

Finally, the AFC states that the existing fire water system and emergency fire water pump will provide water for fire-fighting to both the existing CTP #2 facility and the proposed LEC. Yet, information is lacking that ensures that the entire storage system, water flows, and emergency pumps can provide the needed flow, pressure, and duration of flow (minimum of 2 hours) for both the CTP #2 and LEC facilities at the same time should a concurrent fire at both power plants require fire-fighting water.

Staff is requesting information in order to properly assess the on-site fire suppression systems and emergency response access and consider necessary and appropriate Conditions of Certification to protect workers, critical energy infrastructure, and the off-site public.

Data Request

75. Please provide specific information on the amount of stored water dedicated for fire protection and the types of pumps that maintain pressure in the fire loop system.

Response: The STIG has two existing 125,000-gallon fire water storage tanks. The existing fire pumps include a diesel-driven main pump and a motor-driven jockey pump manufactured by A-C Fire Pump Systems (a division of ITT industries).

Data Request

76. Please provide the details and identity of the proposed fixed firefighting equipment that will be on-site during the construction phase.

Response: The fixed equipment/systems during construction will be via fire hydrants at the existing facility. Fire extinguishers will also be used.

Data Request

77. Please describe the gates and locations of the primary and secondary access points to the power plant and mechanism by which emergency responders will be able to enter at either location should power plant personnel not be available.

Response: A manually operated secondary access gate is planned to be located at the northern end of the facility. Access to this gate will be via the wastewater treatment plant. The fire department will have access to the gate and will have a key to the gate. The primary gate will be located on the main access road (Thornton Road) not far from the existing access gate. The primary gate will be controlled via keypad or control room operator for ingress to the site. A magnetic loop in the road on the plant side of the gate will control the gate for egress.

Data Request

78. Please provide a technical evaluation that ensures that the entire fire water storage system, water flows, and emergency pumps can provide the needed flow, pressure, and duration of flow (minimum of 2 hours) for both the CTP#2 and LEC facilities at the same time should a concurrent fire at both power plants require fire-fighting water.

Response: A calculation was performed to show that the fire water tanks and existing pumps were adequate to provide the needed flow, pressure, and duration in accordance with NFPA 850. However, the evaluation was based on the assumption that only a single fire event would have to be accommodated by the existing fire pumps. Sizing the pumps for a fire occurring at both the STIG plant and LEC simultaneously would be considered a double contingent failure.

Worley Parsons obtained the pump curves from NCPA for the existing fire pumps so that an evaluation of their adequacy could be performed. The evaluation assumed that the existing 10-inch cast iron pipe fire loop would be tapped at a point convenient to the new plant such that a new fire loop of 12-inch HDPE pipe could be installed. The new fire loop will extend completely around the new site, encompassing the main power block and associated auxiliaries, with a portion of the loop extending to the cooling tower and fuel gas compressor areas.

Calculation Assumptions:

- Existing fire system includes a single diesel-driven main pump and a single motor-driven jockey pump (for maintaining pressure in the system), manufactured by A-C Fire Pump Systems (a division of ITT Industries)

- Existing main pump flow rate: 2,000 gallons per minute (gpm) at 144 pounds per square inch (psi) discharge pressure (from pump curve)
- Existing jockey pump flow rating: 20 gpm at 130 psi
- The longest pipe routing distance to account for greatest possible losses was used for purpose of calculation.
- Hydrant elevation used is 3 feet.
- Existing fire water tank storage capacity: two tanks at 125,000 gallons each

NFPA 850 Code requires a total tank storage of $2,000 \text{ gpm} \times 120 \text{ minutes} = 240,000 \text{ gallons}$. The site has an existing tank storage capacity of 250,000 gallons.

Flow required by NFPA code is 1,200 gpm (1,000 gpm required for STG platform area + 200 gpm STG bearing deluge flow) **OR** 2,000 gpm (1,500 gpm for hydrant [assumed] + 500 gpm [hose allowance NFPA 850]). The Applicant used the greater of these flow requirements (2,000 gpm) for purposes of the calculation.

On the basis of the above assumptions and available pump data, the Applicant determined that the existing pump capacity and existing tank storage capacity is sufficient to meet NFPA 850 requirements.



**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**

**APPLICATION FOR CERTIFICATION
FOR THE *Lodi Energy Center***

DOCKET No. 08-AFC-10

**PROOF OF SERVICE
(Revised 2/17/09)**

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DECLARATION OF SERVICE

I, Haneefah Walker, declare that on April 14, 2009, I served and filed copies of the attached Data Response Set 4, Responses to CEC Staff Data Request 75-78. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: **[www.energy.ca.gov/sitingcases/lodi]**. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

FOR SERVICE TO ALL OTHER PARTIES:

sent electronically to all email addresses on the Proof of Service list;

by personal delivery or by depositing in the United States mail at Sacramento, CA with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

OR

depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION

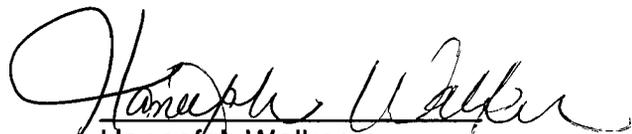
Attn: Docket No. 08-AFC-10

1516 Ninth Street, MS-4

Sacramento, CA 95814-5512

docket@energy.state.ca.us

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


Haneefah Walker