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<b>DOCKET</b>	
<b>08-AFC-10</b>	
DATE	<u>APR 17 2009</u>
RECD.	<u>April 17 2009</u>

April 17, 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 5, Revised Responses to CEC Staff Data Requests 75 and 78

Dear Mr. Jones:

Attached please find one original and 12 copies of Northern California Power Agency's revised responses to California Energy Commission Staff Data Requests 75 and 78 for the Application for Certification for the Lodi Energy Center (08-AFC-10). Due to an inadvertent error, the incorrect tank size was stated in Data Request 4, numbers 75 and 78. This revised set reflects the correct tank size.

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

A handwritten signature in black ink, appearing to read "Sarah Madams".

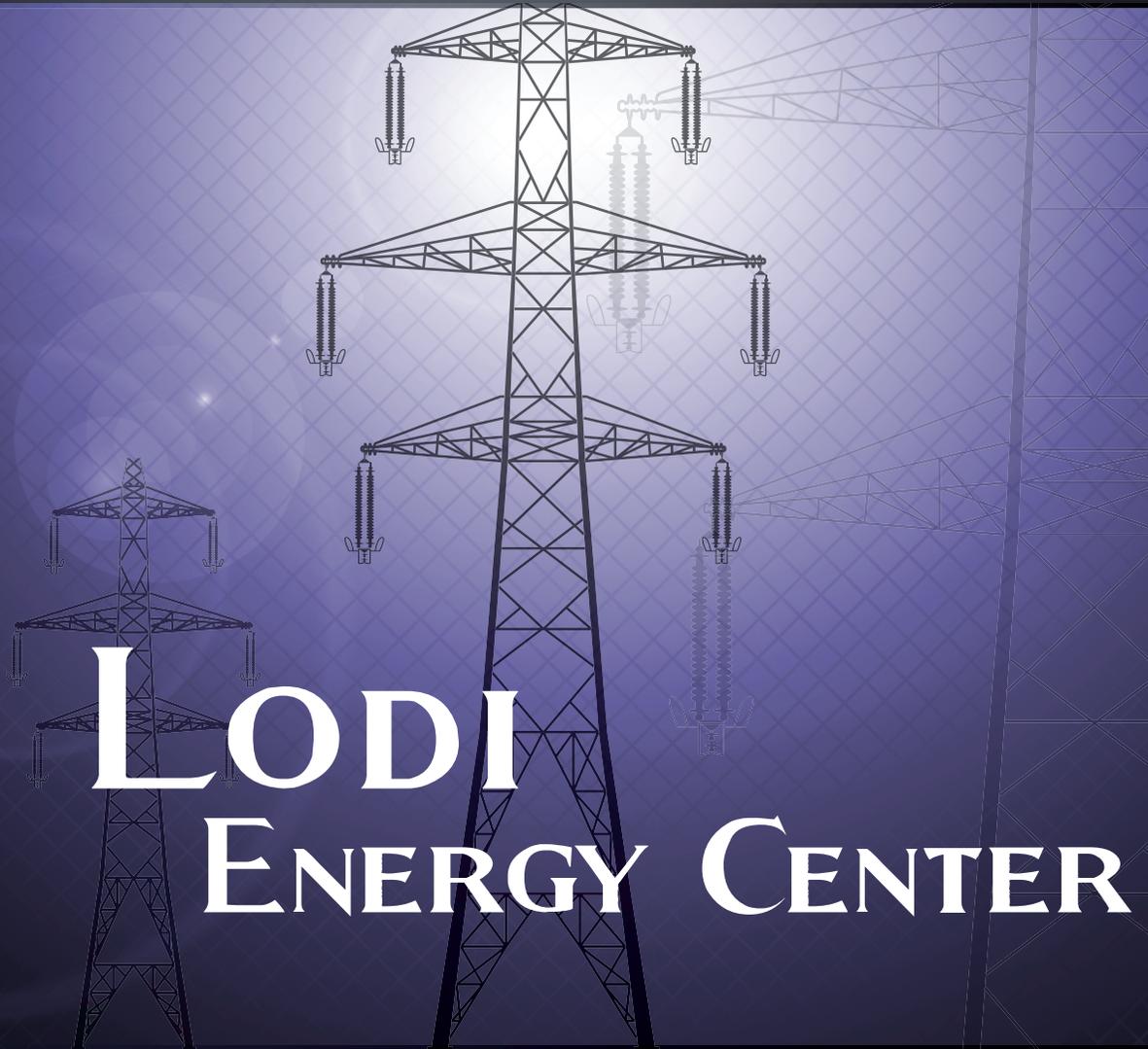
Sarah Madams  
AFC Project Manager

Attachment

cc: A. Grenier  
E. Warner/NCPA

Application for Certification

*Data Response Set 5*  
(Revised Responses to Data Requests 75 and 78)



# LODI ENERGY CENTER

EY062008001SAC

April 2009

Submitted by



Submitted to

**California Energy Commission**

With Technical Assistance by

**CH2MHILL**

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*Supplement*

# **Lodi Energy Center Project**

**(08-AFC-10)**

## **Data Responses, Set 5**

**(Revised Responses to Data Requests 75 and 78)**

Submitted to  
**California Energy Commission**

Submitted by  
**Northern California Power Agency**

With Assistance from

**CH2MHILL**

2485 Natomas Park Drive  
Suite 600  
Sacramento, CA 95833

April 2009

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# Introduction

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Attached are Northern California Power Agency's (NCPA) responses to the California Energy Commission (CEC) Data Request Set 5 (numbers 75 and 78) regarding the Lodi Energy Center Project's (LEC) (08-AFC-10) Application for Certification (AFC). Due to an inadvertent error, the incorrect tank size was stated in Data Request 4, numbers 75 and 78. This revised set reflects the correct tank size.

# Worker Safety/Fire Protection (75 and 78)

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## 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~~ 250,000-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

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~~ 250,000 gallons each

NFPA 850 Code requires a total tank storage of 2,000 gpm x 120 minutes = 240,000 gallons. The site has an existing tank storage capacity of ~~250,000~~ 500,000 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.