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**Riverside Energy Resource Center Units 3&4  
06-SPPE-1**

**Data Request 32, 33, 34, 35, 36, 37, & 38**

**BACKGROUND**

The application describes the project in very general terms, including an incomplete description of access points (gates), hazardous materials transportation routes, fire detection and suppression systems, existing and planned perimeter security, and any gas compressor enclosures and safety systems. Staff needs this information in order to assess fire response and protection systems, the impacts of transporting aqueous ammonia to the power plant, and site security.

**DATA REQUESTS**

32. a. Please provide a description of the route that will be used to transport aqueous ammonia from an Interstate freeway to the facility; and  
  
b. include a map that shows the location of any sensitive receptors along the route (e.g., parks, schools, hospitals, day-care facilities, long-term health care facilities, playgrounds, or residential neighborhoods).
33. The application states that 19% aqueous ammonia will be used for SCR and that there will be a total of 10 tanker truck deliveries to the power plant each month to serve both existing and proposed units. Please provide the increase in the number of tanker truck trips that the proposed project alone will require.
34. Please provide a narrative description and a map showing primary and secondary access points and gates into the project site. The secondary access point can be one restricted to the use of emergency response personnel.
35. Please describe all fire detection and suppression systems for the project and indicate whether the suppression systems are automatic or manual.
36. Please describe the three gas compressors in terms of whether they are open to the air, confined within a compressor building, or are surrounded by sound walls. Include a description of the location and type (manual or auto or remote activated) of the gas pipeline shutoff valve and fire detection and suppression systems.
37. In a confidential filing, describe the existing and proposed perimeter security in regards to fencing, walls, guards, access control, closed circuit televisions, breach detection, etc. Because this information is considered sensitive energy infrastructure security information, please indicate when Riverside

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**Author:** Dr. Alvin Greenberg

Public Utilities personnel can provide staff with a confidential briefing on security measures that exist for the site and those planned for the project.

38. Please provide a description on the placement of any ammonia detectors, their specifications, and what warning or controls would be activated by these sensors.

## RESPONSE

32. a. Ammonia supplier:

Airgas Specialty Products (previously Pacific Diazo)  
6183 Sierra Ave. BLDG 7  
Fontana, CA 92336  
800-266-6642  
After July 2008

Airgas Specialty Products (previously Pacific Diazo)  
6270 Wilderness Ave.  
Riverside, CA 992504  
800-266-6642

As of July 2008, the new delivery route will be:

.4 miles / 46 seconds  
North on Wilderness (0 miles)  
West on Jurupa (.3 miles)  
North on Payton (469 ft)  
(no interstate route required)

- b. A map depicting the route and adjacent sensitive receptors is attached (Hazardous Materials Management Attachment 1).

33. According to the Integrated Flow Solutions (subcontractor to EIT, the equipment supplier to GE) P&ID for the aqueous ammonia injection system, the design flow is 128 lbs/hr. EIT's final design information provides ammonia flow as a function of fuel flow. Using the GE guarantee operating point for full load to determine the fuel flow, the resulting ammonia flow for a single unit at full load is approximately 93 lbs of 19% aqueous ammonia per hour.

At 1230 permitted hours per turbine per year, the maximum NH<sub>3</sub> use by Units 3&4 in a year would be approximately 228,780 lbs or approximately 30,500 gallons. This is equal to five 6,000 gallon trucks per year.

In 2007, Units 1&2 usage of aqueous Ammonia resulted in two 6,000 gallon trucks being delivered to the site. The expectation for the permitted hours of use is that the actual number of trucks being delivered would grow from the present 2 trucks per year to the maximum of 5 trucks per year as the need for peaking power increases over the coming years.

34. The primary entry point is the electronically controlled secure gate on Payton Ave. located on the South East corner of RERC facility. The secondary and

emergency entrance and exit is also an electronically controlled secure gate located on Acorn. Both gates can be opened locally and remotely. Both gates are wide enough to accommodate 2 vehicles side by side. The emergency (secondary gate) has a separate “man gate” utilizing a combination lock. The main gate on Payton utilizes a KNOX box keyed entry system used by emergency response personnel. There are two other chain link gates which are maintained pad-locked. These two gates are only used when primary and secondary entry/exit points are not available.

The locations of the main entrance and exit and the secondary and emergency entrance and exit on a Plant General Arrangement are indicated on a map (Hazardous Materials Management Attachment 2).

35. See copy of Fire Detection, Alarm and Protection Systems (Hazardous Materials Management Attachment 3).
36. The three new gas compressors (each sized to meet 100% of the fuel requirements for a single LM6000 gas turbine) for Units 3 & 4 are mounted on a single skid that will be enclosed on four sides with a sound attenuation structure. They are not inside a building; rather, they are vertically exposed to the open air. The sound attenuation structure will be identical or nearly identical to that used for the Units 1&2 gas compressor skid.

The gas pipe to the compressor skid shall be the same physical arrangement as Units 1&2 with minor differences in dimension as necessary. The valve station shall be immediately adjacent to the south side of the sound enclosure. An automatic and manually initiated emergency shutoff valve will be included that is air actuated, fail closed and is a fire approved ball valve. Manually operated fire rated globe isolation valves will be located immediately upstream and downstream of the emergency shutoff valve. A manually operated fire rated globe valve will be located in the by-pass line adjacent to the emergency shutoff valve station.

No fire protection is provided within the gas compressor sound enclosure. Section 4.1.15 of the Fire Detection, Alarm and Protection specification (see below) addresses fire protection for that area. This is identical to that provided for the adjacent Units 1&2 gas compressors and noise suppression enclosure.

#### 4.1.15 Fuel Gas Compressor Open Structure (Sound Panels)

No sprinklers shall be provided in this area. Fire extinguishers and fire detection and alarm system suitable for use with the hazard shall be provided as required by local authorities.

37. The response for Data Request 37 is provided as a separate submission to the CEC under an Application for Confidential Designation.
38. The RERC Units 3&4 detailed specifications for ammonia detection are not yet finalized. However, it is planned that the system(s) will be substantially the same as those for Units 1&2. It should be noted that the existing Units 1&2 ammonia tank will serve Units 3&4 with the addition of a new ammonia transfer skid in the ammonia storage area to serve the two new generating units. The Ammonia storage Tank and transfer area already has existing ammonia leak detection. The new skid's leak detection will be integrated into the storage and transfer area leak detection system.

The RERC Units 3&4 design requirements for ammonia detection are addressed in three places in the project design criteria; ammonia storage and transfer; piping; and the EMC. Excerpts from those criteria are included below.

The ammonia transfer and storage systems shall be monitored to alarm any ammonia release. This alarm shall be monitored and annunciated through the Plant control system and will detect vapor and underground ammonia pipe leaks.

#### Ammonia Piping

- a. Ammonia piping that runs outside of contained areas (above ground or in trenches) shall be a pre-fabricated double wall piping system such as that manufactured by Guardian Systems, a Division of IPEX (800) 490-0077, or City approved equal.
  - 1) The system shall be designed, fabricated, installed, and tested in accordance with manufacturer's recommendations.
  - 2) The piping system shall be sloped to low point detection risers located in accordance with manufacturers recommendations, but not more than 300 ft apart.
- b. A leak detection system consisting of sensors at each detection riser and a monitoring panel shall be provided to detect any leaks in the carrier pipe.
  - 1) The leak detection system and monitoring panel shall be zoned so that a plant operator can identify which section of piping has the leak.
  - 2) A minimum of 3 spares zones shall be provided in the panel.
  - 3) The monitoring panel shall be located in a convenient location, but if it is outdoors, it shall be furnished with a sunshade and shall be rated for outdoor conditions.
  - 4) In addition, the panel shall send all alarms to the Plant control system in the main control room in the administration building.

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#### CEMS/DAHS

Design shall provide safety systems required for the ammonia injection system as required by the NFPA, ANSI K93.2 and CAL-OSHA and as they apply to modifications required for that system to serve the 2 new units EMC. The safety systems will, at a minimum, include double wall piping with ammonia detection for all ammonia piping.