



## The Air Liquide Large Industries (Air Liquide Rodeo)

The Air Liquide Large Industries is located in Rodeo, CA. The primary purpose of this facility is to manufacture gaseous hydrogen for the neighboring Phillips 66 Refinery in Rodeo, California, which they use as part of the refinery operation. The plant also produces steam and electricity, sold directly to Phillips 66 Refinery. The plant is designed for using a varying mixture of feed stock. The fuel used for their reformer furnace is natural gas, refinery fuel gas, and off-gas from the hydrogen purification system (PSA).

The Air Liquide Rodeo facility started operation in summer of 2009. This plant has 13 full time employees and operates around the clock with a maximum amount of 78,000 pounds of 19% aqueous ammonia and 25,000 pounds of flammable gas containing 64% hydrogen and 36% methane, by weight, at any given time.

## Hazardous Substances Stored or Produced Onsite and their Immediate Health Effects

- Hydrogen: an odorless, extremely flammable gas. Inhalation can cause dizziness, shortness of breath and unconsciousness.
- Aqueous Ammonia: colorless liquid with pungent odor. May cause nausea, breathing difficulty and convulsions. Made by dissolving anhydrous ammonia in water.

## 3-Year Accident History

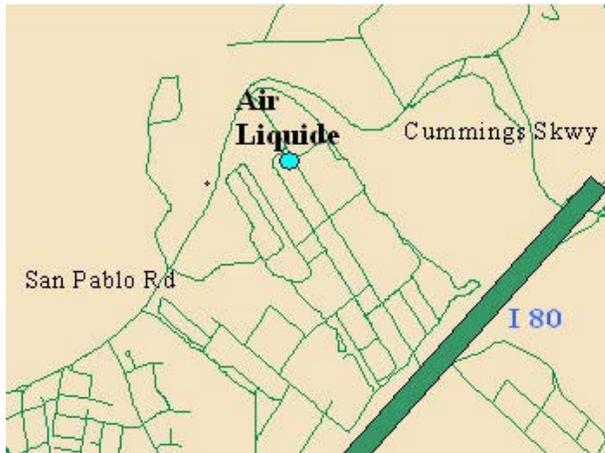
(Last updated October 2020)

There have been no incidents to require reporting since the facility began operation in June 2009.

## Safety Features and Recent Improvements

(Updated October 2020):

The safety features include modern fire monitors, process safety valves (PSVs), instrumentation including indications, alarms and controls; and inherent design that includes lower concentrations of ammonia (19%) and physical layout of the plant. The site has continued to update and refine their site-specific documents to clarify the ISO requirements.



For more information:

Copies of the latest audit findings may be found in the following locations:

CCHS Hazardous Materials Office  
4585 Pacheco Blvd., Suite 100 Martinez, CA 94553

Rodeo Public Library  
220 Pacific Avenue, Rodeo, CA 94572

Crockett Public Library  
991 Loring Avenue, Crockett, CA 94525



## Summary of Most Recent Audit

(January 2019):

The CalARP Programs were mostly found to be in compliance. The CalARP/Safety Program implementation and management responsibilities between the plant and corporate staff were mostly defined, coordinated and integrated. The facility needs to strengthen the corporate oversight of the CalARP and ISO program elements and complete the related action items in a timely manner. Senior management need to allocate time and resources for all of the Safety Program elements including those for the County Industrial Safety Ordinance (ISO). Improvements are needed in establishing expertise in the following: Inherently Safer Systems (ISS) and training of Human Factors program.

Many of the ISO Program requirements need improvement. The action items include development of a more complete definition of responsibilities for their safety program elements; improvements needed in developing expertise in Human Factors; reviewing of operating and maintenance procedure for human factors deficiencies and writing effective procedures. Improvements are also needed in including consideration of incidents at similar facilities and ensure that PHA actions are targeted to be complete within one year unless a plant shutdown is required; training of plant personnel in writing effective procedures; conducting safety culture assessments on a timely basis, and effectively addressing inherently safer systems/design (look for ways to reduce the hazard and make the process safer).