

Hydrogen Refueling Station O&M Services



Maintaining a hydrogen refueling station involves more than just having highly trained mechanics. It requires a team with expertise in handling high-pressure gas as a fuel. At Energy Link, we have a skilled workforce you can trust.

Energy Link is the future home of The Hydrogen Factory. We don't make the H₂; we make the equipment to move it.



Hydrogen Refueling Station Specialized Requirements

1. **Non-Sparking Tools** : Only non-sparking tools may be used on-site.
2. **Station Design Integrity**: We adhere to a strict 'In-Kind Protocol' when replacing the station's components. This means that if an exact component replacement is not possible, we document every step of the replacement process to maintain the station's design integrity. This includes revisiting the Hazard Analysis when introducing a different part and updating all station-affected documents available for reference.
3. **Charging Protocol**: Technicians must thoroughly understand the protocol for uncharging the gas in the system after a station shuts down and how to bring a station back online safely.
4. **Emergency Response Plan**: It is critical to create and maintain an Emergency Response Plan for each hydrogen refueling station. This plan, specific to each site, must be meticulously followed by technicians in an emergency, underscoring the need for careful planning and execution.
5. **Maintenance Log**: A maintenance log is required. Some of the key elements are:
 - a) The start and stop times of the work performed and whether it was completed.
 - b) Name the tech or inspector performing the work.
 - c) Work performed: list of parts and components being repaired or replaced, including serial and certification numbers of each part or component.
 - d) Was this maintenance scheduled or unscheduled? If unscheduled, the reason for the maintenance must be specified.

Codes and Standards

Hydrogen Refueling Stations are governed by Codes and Standards which must be adhered to when maintenance work is performed:

- SAE - Society of Automotive Engineers
- CSA - Component Standards & Design Codes
- NFPA 55 - Compressed Gases
- NFPA 70 - National Electrical Code for Hazardous Locations
- NFPA 2 - Vehicular Gaseous Fuel Systems

Note: NFPA 2: Hydrogen Technologies Code

Purpose: Protect lives and property with the 2011 *NFPA 2's* comprehensive fire protection requirements for areas containing hydrogen. The 2011 *NFPA 2: Hydrogen Technologies Code* is a new document that consolidates all the fire and life safety requirements applicable to the generation, installation, storage, piping, use, and handling of hydrogen in compressed gas or cryogenic liquid form into a comprehensive resource. It includes fundamental requirements for hydrogen in both gaseous and liquid phases. It contains additional use-specific categories, such as Vehicle fueling facilities, Systems for fuel cell power and generation, Applications involving combustion processes and special atmospheres, and Operations in the lab.

Maintenance Records

The refueling facility's instruments and equipment must be regularly maintained, and detailed records must be kept. Safety Equipment Testing Procedures define testing frequency.

- Scheduled testing and calibration of hydrogen flame detectors
- Scheduled testing and calibration of gas dispenser temperature compensation systems
- Scheduled testing and calibration of gas dispenser excess flow valve
- Scheduled testing and calibration of low-pressure shut-off valve
- Scheduled testing and calibration of all pressure-relief devices
- Compressor manufacturer recommended O&M service by OEM certified trained tech and the use of only OEM parts
- Regular leak testing
- Regular inspection of all components for damage, wear, or corrosion
- Hoses should be discarded after 12 months of use or immediately after any mechanical abuse, such as a vehicle breakaway incident