

StratosFuel Safety Plan

Public Fuelling of Hydrogen Powered Fuel Cell Vehicles

California

Issue 1

Jose Magana

StratosFuel

Hydrogen Regulations, Codes & Standards Safety Plan:

Outdoor Fuelling of Hydrogen Powered Fuel Cell Vehicles

Table of Contents

1 Scope of Work.....	3
2 Organizational Safety Information.....	3
2.1 StratosFuel Policies and Procedures.....	3
2.2 StratosFuel commitment to Safety, Health, Environment, and Quality (SHEQ).....	4
2.3 Hydrogen Experience.....	5
3 Identification of Safety Vulnerabilities (ISV).....	6
3.1 Risk Management Plan.....	6
3.2 Operating Procedures.....	7
3.3 Equipment and Mechanical Integrity.....	8
3.4 Management of Change Procedures.....	8
4 Communications plan.....	8
4.1 Driver Training.....	9
4.2 Employee Training.....	9
4.3 Safety Reviews.....	9
4.4 Safety Events and Lessons Learned.....	9
4.5 Emergency Response.....	10
4.6 Transportation and site security.....	10
4.7 Self-Audits.....	11
5 Regulations, Codes and Standards.....	11
5.1 National Codes and Technical Standards.....	11
5.2 Model Building and Fire Codes.....	11
5.3 Local Codes.....	11
6 Air Products and Chemicals, Inc Hydrogen Safety Plan.....	12-31
7 Hydrogen refueling System Maintenance.....	32-36
8 Emergency Action Plan	37-45

1 Scope of Work

StratosFuel has developed a standard fuelling station system to support a broad range of hydrogen powered vehicles to provide fuelling of hydrogen fuel cell vehicles to support the deployment of FCVs . The key vehicle fuelling safety systems are built into each compression, storage and dispensing system (CSD) and all safety systems are verified during shop inspection, during commissioning on-site, and at prescribed station service intervals.

Each station system is inspected, labelled and listed at point of manufacture and each installation site is reviewed to verify that site conditions are suitable to support deployment of fuel cell vehicles, bulk hydrogen storage systems and accept delivery of compressed or liquid hydrogen to support the expected fuelling demand.

2 Organizational Safety Information

It is important for the project team to communicate both internally and externally for a successful and safe project. A key step at the initial project development stage is to engage appropriate local stakeholders for the project, including the authorities having jurisdiction and neighbors of the facility. As appropriate, outreach efforts will be established to communicate the nature of the project as well as the overall scope. For example, this can consist of attending town hall meetings, planning commission meetings, school board meetings, etc. Education is an important step to ensure future support for the project.

After initial approval and permits are obtained, communication will continue with training provided to local first responders, facility personnel, and operators of the fueling station

2.1 StratosFuel Policies and Procedures

StratosFuel, Inc – a California Corporation headquartered in San Bernardino, CA – proposes ten (10) 100% renewable hydrogen-fueling station projects that are strategically located to maximize coverage and utilization in California. Our proposal consists of installing 10 compressed, store, and dispense (CSD) stations that accept delivery from a tube trailer. We have selected to work with two companies, Linde and Hydrogenics to develop our renewable hydrogen network. Our network will be carried out in two series, the first distributing 33% renewable hydrogen through existing biogas pathways, and the second is distributing centrally producing hydrogen via wind and electrolysis from our facility in Coachella Valley. This network concept is the first of its kind and represents our vision of dispensing 100% renewable gas at or below market rate. In order for hydrogen to gain a foothold in the fueling space the price must drop below \$12.00 per kilogram. Our centralized facility will allow us to price hydrogen at competitive rates that will increase Fuel Cell Vehicle (FCV) adoption, and allow us to exceed the goal of 33% renewable content.

All stations proposed under GFO-15-605 will be developed, owned, branded, and operated by StratosFuel, Inc. Under the same GFO StratosFuel will be developing, branding, and operating other hydrogen station we will not own. We find that stations need an identifiable brand, and reliable operations team to make them more suitable for the commercial market. That is why StratosFuel has also partnered with ITM Power to brand and operate their proposed station network, because continuity amongst stations is important to customers and us. Furthermore, the network we are proposing will encapsulate the commercialization of FCVs, and allow the State of California to meet its goals and objectives of Assembly Bill 118, and SB 1505

StratosFuel has developed a process safety management program managed by the safety, health, environment and quality (SHEQ) organization with a range of risk assessment processes and tools used to measure and manage the risks associated with hazardous activities. These include: bow-tie analysis, causal tree analysis, due diligence, engineering management of change (EMOC), environmental impact review, failure mode and effects analysis (FMEA), fault tree/event tree analysis, hazard and operability (HAZOP) study, LiMSS audits, layer of protection analysis (LOPA), lone worker assessment, major hazards review program (MHRP), off-site consequences analysis (OCA), permit to work (PTW), project risk review (PRR), project safety review (PSR), Pre-Start-up Safety Review (PSSR) and quantitative risk assessment (QRA).

StratosFuel is proud to be a participant of the American Chemistry Council's Responsible Care® Program, a global, voluntary initiative developed autonomously by the chemical industry for the chemical industry. As a Responsible Care® Company, StratosFuel is committed to continuous improvement of our performance in the fields of environmental protection, occupational safety and health protection, plant safety, product stewardship as well as to continually improve the dialog with our neighbors' and the public, independent from legal requirements. Responsible Care Management System (RCMS) is an integrated health, safety, security and environmental management system based on the guiding principles of Responsible Care and the Plan-Do-Check-Act continual improvement cycle. Responsible Care Management System drives results in seven key areas: community awareness and emergency response; security; distribution; employee health and safety; pollution prevention; process safety; and product stewardship

To support outdoor fuelling of hydrogen powered fuel cell vehicles, StratosFuel has developed a proprietary outdoor fuelling safety management system.

The StratosFuel outdoor hydrogen vehicle fuelling protocol manages the compression and dispensing of hydrogen to the FCV and utilizes layered risk mitigation system including technologies such as continuous leak testing system that is built into all of the fuelling station equipment designs.

2.2

StratosFuel commitment to Safety, Health, Environment, and Quality (SHEQ)

At StratosFuel, we do not want to harm people or the environment. To achieve this vision, we, StratosFuel, are committed to the following:

- Safety, health, care for the environment and quality are a pre-requisite to any business we undertake
- We all take a personal responsibility for SHEQ
- Managers at all levels demonstrate visible leadership
- We apply this policy in our day to day behavior and decisions
- SHEQ is 100% of our behavior, 100% of the time

We strive to be leading in SHEQ to meet the following objectives:

- Zero incidents
- Zero harm to communities in which we do business
- Safe, secure and healthy working conditions for all our people and all that work with us

- Supplying safe, compliant and environmentally responsible products and services
- Prevention of pollution to the environment
- Responsible use of natural resources
- Research, development and promotion of technologies, products and services that are sustainable with regard to SHEQ
- Satisfy customer needs and expectations

StratosFuel will Comply with all applicable legal, regulatory, internal and industry requirements

- Pro-actively identify, eliminate or minimize potential sources of harm or risk arising from all our activities
- Continuously improve our performance to achieve our objectives
- Share our knowledge and experience in safety, health and care for the environment
- Show our accountability for our performance by regularly measuring, reviewing and reporting
- Require our contractors and partners to manage in line with this policy
- Expect our clients and suppliers to cooperate actively in achieving our objectives
- Provide training, standards, equipment and support to ensure compliance with this policy
- Maintain open communication with our local communities and stakeholders

This policy is a key part of StratosFuel's overall strategy and is reviewed on a regular basis by StratosFuel's executive management board.

2.3

Hydrogen Experience

StratosFuel's project team has over 7-years of significant expertise in hydrogen refueling technology and fuel cell vehicles, which includes, research, development, and gas delivery. Jonathan Palacios-Avila has over 7-years experience of operating and maintaining hydrogen stations. During Jonathan's undergraduate studies at California State University Los Angeles he designed an algorithm to plot hydrogen stations. He was also responsible for drafting the alternative fueling station section in the City of Ontario's Climate Action Plan. When working with StratosFuel, he oversaw the design integration of the hydrogen equipment, and worked to implement a fleet program with city vehicles. While in school, Jonathan also experimented with fuel cell technology, and helped operate the CSULA hydrogen station. Other Team members with similar hydrogen experience include David Stotemyre. David was a construction manager for a number of First Element fuels hydrogen station projects. He has an understanding of the detail and mechanical work that goes into building a hydrogen station. Our construction team has over 10 years experience in building high-pressure gas stations and laying high-pressure gas lines. StratosFuels construction team consists of Bromly Houser, a mechanical engineer that has built high-pressure fueling systems for CNG, and pneumatic control panels. He has an understanding of gas properties, and is familiar with hydrogen. Hydrogenics used him as a subcontractor at

the Ontario Station, and we recruited him as our lead contractor for mechanical installation at all of our proposed sites.

In addition, our technology partners and hydrogen supplier, APCI, Hydrogenics and Linde bring vast skills and expertise in this area. Hydrogen for our fueling stations will be produced at Praxair's Southern California facility and distributed to our stations through high-pressure tube and liquid trailers. Both Hydrogenics and Linde have established themselves in this industry as equipment and gas supply experts that understand hydrogen market needs. Hydrogenics has over 60 years of experience building world-class electrolyzers, and dispensing equipment. They are leading the way in medium sized compress, store, and dispensing stations that accept high-pressure gas deliveries. Linde is a world-class industrial gas company that has an exceptional track record of completing over 1 million successful hydrogen filling around the world. Their focus is supplying liquid hydrogen to provide high-volume stations that can service more than 60 vehicles per day. Assisting StratosFuel with the maintenance of the stations will be Hydrogenics. They have recently established a maintenance team in California. This team has worked on many of the hydrogen stations in California, including: CSULA, Newport Beach, and Torrance. Overall, our project team partners, Linde and Hydrogenics have an understanding and adequate experience working with hydrogen fueling technology and gas supply.

3

Identification of Safety Vulnerabilities (ISV)

The major hazards of hydrogen vehicle fuelling station projects are the flammable nature of hydrogen and the stored energy contained in the station side high pressure storage vessels and the transfer of pressurized hydrogen to the FCV.

The flammable risks associated with the use of hydrogen are managed by site layout of bulk storage and compressor system modules and components, use of proprietary Section Control leak prevention system, certified components built into the system design, use of certified replacement parts and management of the fuelling station system service program.

The management of the risks associated with hydrogen supply to the distributed H₂ outdoor vehicle fuel dispensing points is based on standard industrial practice, NFPA-55, CGA H-3, CGACGA-H5, NFPA-52 and NFPA 2 technical standards for hydrogen vehicle fuelling, DOT regulations, and the ASME boiler and pressure vessel codes

The risks associated with dispensing hydrogen to vehicles are managed by compliance with advanced technology addressed in NFPA-55 and NFPA 2, and the suite of SAE hydrogen vehicle fuelling standards such as SAE J-2600 covering nozzle and receptacle, hydrogen vehicle dispenser performance standards established by SAE J-2601, and fuel quality standards set by SAE J-2719

3.1

Risk Management Plan

The management of the risks associated with hydrogen supply to the H35 and H70 vehicle fuelling station is based on standard industrial practice, NFPA 55, NFPA 2, DOT regulations, and the ASME boiler and pressure vessel codes

StratosFuel outdoor vehicle fuelling system projects feature an integrated, standard fuelling station design that has been subjected to a comprehensive FMEA study to evaluate and risk rank mechanical system integrity and a HAZOP study of the operational and service procedures typical in a standard installation. All StratosFuel fuelling station systems are inspected and certified as fit for purpose at the point of manufacture by a by qualified "listing" third party.

StratosFuel and other stakeholders including vehicle suppliers, hydrogen suppliers and station equipment/technology suppliers are supporting the current efforts at the SAE Fuel Cell Safety Committee at CSA-America to develop component standards for hydrogen dispenser systems, and at NFPA to develop fuelling station installation standards.

StratosFuel follows SAE 2600 as the recognized technical standard for mechanical specifications for the nozzle and receptacle, including type test specifications and related technical standards. The SAE J2600 standard for fuelling hardware has been available in draft or TIR format for a number of years and now includes performance testing for the nozzle, receptacle and mechanical hardware keys. This standard prevents vehicles with 25 MPa receptacles from fuelling with 35 or 70 MPa nozzles, but allows for 70 MPa vehicles to fuel at dispensers with 70, 35 or 25 MPa nozzles.

StratosFuel follows SAE 2601 as the recognized technical performance standard for 70 MPa fast fill dispensers. The StratosFuel hydrogen fuelling station will provide both 35MPa and 70MPa fuelling vehicles with a normal H70 consumer capacity at SAE 2601-A standard performance level.

StratosFuel follows SAE 2719 as the recognized fuel quality standard hydrogen and California regulations for hydrogen sold as a motor fuel. The hydrogen product to be supplied to the StratosFuel station equipment will be generally known as commercial grade 4.5 (99.995%) liquid hydrogen, a supply grade proven (on previous DOE Tech Validation Projects) be more than sufficient to enable the station to meet SAE J-2719 TIR specifications (measured at the dispenser). StratosFuel is supportive of the work progressing at SAE and ASTM regarding hydrogen product quality, testing, and sample collection to evaluate the full range of the SAE J-2719 guideline

StratosFuel implements *Continuous Leak Testing* in all our station systems. Testing of all of the lines to the dispenser fuelling nozzle, flex hose and vehicle connected to the dispenser is performed before, during and after each fuelling sequence. Leak testing is accomplished by sequencing multiple closed valves in a series and monitoring pressure drop (decay) and integrity of the various nodes, including the pipe to the dispenser, the dispenser and hose, nozzle / vehicle receptacle interface, and vehicle connections from the receptacle to on-board tank.

3.2 Operating Procedures

StratosFuel supplied bulk hydrogen storage systems including gaseous hydrogen storage tanks, compressed tube trailers and high pressure storage tanks are located according to standard industrial hydrogen practice, NFPA-55, CGA document H-5-2008 “Installation Standards for Bulk Hydrogen Supply Systems, and the requirements of local building codes.

Emergency Shut-Down. The StratosFuel fuel cell vehicle fuelling systems are equipped with a comprehensive emergency shut down (ESD) system and integrated control system that incorporates inputs from:

E-Stops located through the storage and dispensing areas.

Continuous leak tightness testing of key sections of the hydrogen supply system.

LEL meters and thermal sensors in the compression and storage compartments.

PLC monitored fuelling event anomalies.

StratosFuel dispensers are an integrated part of the fuelling station control system. If there is a minor leak in the hydrogen supply system or at the dispenser nozzle/vehicle receptacle interface, such as a complete, or partial,

hose break during a fuelling event, the continuous leak tightness detection system will shut the entire system down. StratosFuel systems feature numerous normally closed automatic hydrogen supply valves and each dispenser nozzle. All automatic hydrogen supply valves are linked to the ESD system.

3.3 Equipment and Mechanical Integrity

Each StratosFuel fuelling station is tested on the production line for system integrity and a functional shop performance test prior to shipment. At site installation, all phases of installation require pressure testing of all interconnecting piping, and a full system leak test is conducted prior to introduction of hydrogen during system commissioning.

Mechanical integrity of the installed dispensing system is continuously evaluated by the imbedded continuous leak testing system that monitors all aspects of the fuelling station integrity. This includes: lines between the system enclosures, fuelling nozzle, flex hoses and vehicles connected to the dispensers. Leak testing using Section Control is performed before, during and after each fuelling event.

During commissioning, the Section Control system is used along with commissioning tools and procedures to validate system integrity at start up where system controls are fine tuned to accommodate site specific design features and normal supply system pressure. During commissioning all safety system components are either; (1) visually inspected, or, (2) performance tested. All critical safety set-points are documented “locked as installed”, and changes are controlled through the StratosFuel EMOC process.

3.4 Management of Change Procedures

StratosFuel hydrogen vehicle fuelling stations are subject to the StratosFuel engineering management of change (EMOC) process, which is designed to ensure that no changes are made to plant, equipment, control systems, process conditions or process/process equipment operating procedures without authorization from a responsible person.

Maintenance and service of StratosFuel fuelling station systems must be performed by qualified and trained StratosFuel personnel and is managed by the StratosFuel permit-to-work process for repairs & maintenance.

4 Communications Plan

It is important for the project team to communicate both internally and externally for a successful and safe project. A key step at the initial project development stage is to engage appropriate local stakeholders for the project, including the authorities having jurisdiction and neighbors of the facility. As appropriate, outreach efforts will be established to communicate the nature of the project as well as the overall scope. For example, this can consist of attending town hall meetings, planning commission meetings, school board meetings, etc. Education is an important step to ensure future support for the project.

After initial approval and permits are obtained, communication will continue with training provided to local first responders, facility personnel, and operators of the fueling station.

4.1

Driver Training

All users of the StratosFuel Fuelling System will be trained on the proper and safe fuelling of the fuel cell vehicle. The user of StratosFuel public dispenser systems will receive step by step fuelling instructions on a video screen mounted on the dispenser face. Some station operators may require that FCV drivers will be required to sign off that they have received appropriate training and are qualified to fuel their FCV with a StratosFuel fuelling station.

4.2

Employee Training

StratosFuel employees are trained, and certified before they are released to work unsupervised. StratosFuel Management Practices include LiMSS chapter training on such subjects as hydrogen and high pressure cyStratosFuelr filling safety, risk analysis tools and risk mitigation strategies and best practice for installation of application equipment and cryogenic supply systems at customer locations. In accordance with the employee participation guidelines set forth in OSHA's process safety management (PSM) requirements, the American Chemistry Council's Responsible Care® program and StratosFuel's safety health and environmental quality (SHEQ) policies, periodic audits and reviews are conducted to verify the effectiveness of employee training and facility compliant with performance standards and StratosFuel best operating practices StratosFuel's best operating procedures are documented in the LiMSS Library, which is available to all employees as an electronic reference library through the StratosFuel Group intranet. StratosFuel employs a contractor safety program for managing contractors when StratosFuel contracts work out to others too perform.

4.3

Safety Reviews

StratosFuel's hydrogen fuelling system projects feature an integrated, standard fuelling station design that has been subjected to a comprehensive FMEA study and a HAZOP study of a typical installation. All StratosFuel fuelling station systems are inspected and certified at point of manufacture by a qualified "listing" third party. All StratosFuel fuelling station system installation plans are reviewed by the project team and the local AHJ

StratosFuel uses a Stage Gate process to manage project risk reduction on each fuelling station project

4.4

Safety Events and Lessons Learned

StratosFuel utilizes a major incident report (MIR) bulletin system and database incorporating investigation reports and lessons learned to document and learn from incidents of a technical nature, as well as loss of product property damage or significant personal injury. These incidents are shared with personnel in the Group via email and the StratosFuel Group intranet site to develop and sustain a "corporate memory" and institutionalize StratosFuel best operating practices.

damage or significant personal injury. These incidents are shared with personnel in the Group via email and the StratosFuel Group intranet site to develop and sustain a "corporate memory" and institutionalize StratosFuel best operating practices.

4.5

Emergency Response

StratosFuel supports the efforts of the California Fuel Cell Partnership (CaFCP) and the companies deploying fuel cell vehicles to develop community outreach and first responder training. At each location the local emergency response teams will be apprised of the new hydrogen vehicle fuelling station to be operating in the local community. StratosFuel will work closely with the CaFCP and local authorities to develop community awareness of the use of hydrogen as a motor fuel and the range of emergency response that may be required in the event of a road accident involving a FCV or an abnormal event at the fuelling station.

StratosFuel - US maintains a national operations center (NOC) in Stewartsville, NJ. The NOC staff is trained and provides support during security related situations. The national operations center is staffed 24 hours a day, seven days a week and is the central management hub for product delivery, problems resolution and emergency support

StratosFuel fuelling station operating conditions are monitored 24 hours a day. Initial calls are transmitted locally to the nearest Customer Service Technician with support from Regional Supply Staff. Additional support is provided, as needed, by Region North America Hydrogen Fuelling Team Technical Experts as well as StratosFuel Hydrogen Fuelling Technical Specialists (i.e. ATZ). Further, all product delivery and emergency response and support is coordinated by the NOC. Coordinators at the StratosFuel NOC will work with local emergency responders in the event of significant product releases or safety events. Lastly, StratosFuel will establish a comprehensive preventative maintenance plan for each facility. Local technicians, and authorized contractors, will routinely make service calls coordinated with the StratosFuel NOC.

4.6

Transportation and site security

StratosFuel performs periodic Security Vulnerability Assessments (SVAs) to comply with the American Chemistry Council's Responsible Care TM Security Code. These assessments are included in Audit Manager and are part of the regular audit scope. StratosFuel has developed and incorporated driver security guidelines and added these guidelines to the Driver Handbook.

StratosFuel performs risk assessments of liquid hydrogen product delivery supply chains as required and considers such factors as:

Mode of transportation

Material hazards and quantities

Proximity to large public areas, significant landmarks

Weather , traffic conditions and road maintenance projects

4.7

Self-Audits

StratosFuel has established an audit process designed to ensure compliance with SHEQ Policy, StratosFuel standards, legislative requirements and relative national standards. This audit process includes the hydrogen vehicle fuelling stations owned or operated by StratosFuel

Regulations, Codes and Standards

Construction and operation of StratosFuel hydrogen vehicle fuelling stations will meet applicable International, National, and Model Building Codes and standards. The following is a list of regulations, codes and standards StratosFuel references for the construction and operation of the hydrogen fuelling station.

5.1

National Codes and Technical Standards

NFPA 55 Compressed Gases and Cryogenic Code, 2010 Edition

NFPA 2 Hydrogen Technologies Code, 2011 Edition

ASME B31.3 Process piping

NFPA 70 (NEC) National Electrical code

CGA G-5.5 Hydrogen Vent Systems

CGA H-3 Cryogenic Hydrogen Storage

CGA H-5 Hydrogen Fuelling Station

SAE J-2601 Draft Global Technical Standard – H₂ Vehicle Fuelling Interface, 2010 Edition \

5.2

Model Building and Fire Codes

International Building Code (IBC.)

International Fire Code (IFC)

International Mechanical Code (IMC)

5.3

Local California Building Codes

2007 California Building Code (CBC.) based on the 2006 International Building Code (IBC.)

2007 California Mechanical Code (CMC.) based on the 2006 Uniform Mechanical Code,

2007 California Plumbing Code (CPC.) based on the 2006 Uniform Plumbing Code,

2007 California Electrical Code (CEC.) based on the 2005 National Electrical Code (NEC.)

The current State of California Energy and Accessibility Standards

6 Air Products and Chemicals, Inc Hydrogen Safety Plan

Scope of Work:

This document conveys the scope of supply for the CA fueling station that Air Products (APCI) proposes to Stratosfuel (Customer).

Air Products is the primary designer, builder, and installer of the hydrogen fueling equipment. However, there will be several partners and vendors involved with the project. Air Products understands the importance of these partners and vendors to work together, particularly with regard to safety, and we have a commitment to make sure that the respective safety programs of each participant are integrated for a cohesive approach to safety.

There are two major aspects to the project scope; Major Equipment and Installation.

MAJOR EQUIPMENT

Air Products equipment scope of supply for either a 180 kg/day station or 400 kg/day station consists of the following equipment:

Quantity	Description
• One (8' x 21' x 13' high/ 25' high max for vent) containerized hydrogen fuel station, rated up to Ss2.913, with integrated control system, consisting of:	
○ 2 or 3	Gaseous high pressure hydrogen storage vessels (15000 psig)
○ 1	40 hp or 125 hp booster compressor with integrated cooling system
○ 1	Cascade panel
○ 1	Refrigeration unit (electric, 15 HP or 30 HP, commercial unit modified for hydrogen service)
• One (8' x 4' x 8' high) non-classified utility island enclosure, consisting of:	
○ 1	Air compressor
○ 1	E-stop panel
○ 1	Power distribution
○ 1	Lighting control
○ 1	Breakers
○ 1	Power supply

- 1 Dispenser purge

- One high pressure heat exchanger
- One or two automated H70 (700 bar) gaseous hydrogen dispenser, data on-line (DOL) monitoring system (customer access optional)
- One (9' x 12' x 9' high) ground storage module, 250 kg or 500 kg total hydrogen storage at 7,500 psig
- One gaseous hydrogen supply system connection, consisting of:
 - 1 Tube trailer discharge stanchion

INSTALLATION

In general terms, Air Products will design, build, deliver & set the equipment, complete the mechanical work, provide supervision for final electrical connections, startup & commission the equipment. Commissioning includes an operational readiness inspection, functional testing and training. Stratosfuel will obtain permits, complete the civil work and complete the electrical work.

The scope of this project is very similar to that of 29 previous fuel stations that are in the process of being built to support the California Energy Commission. At the time of this writing, over 20 of these stations have been deployed over the previous 24 months and are currently in operation. These stations have virtually the same hardware as the proposed 180 kg/day station supplied for this proposal. The 400 kg/day station is larger, but uses the same basic technology.

Organizational Policies and Procedures:

Air Products is an industry leader in Hydrogen fuel station technology and hydrogen process safety engineering. Air Products has dedicated teams for both the Engineering and Operations support of hydrogen fueling stations. These teams collectively have over 100 years of hydrogen fueling station experience and over 200 years of experience building, installing and operating industrial hydrogen systems. Resumes and organizational charts can be provided upon request.

This hydrogen fueling station project will be supported and managed by these experienced teams. In addition, Air Products has a matrix support organization for engineering disciplines that are not directly within the dedicated teams. These include metallurgical engineers, fracture mechanics engineers, reliability engineers, etc.

Fuel stations and new hydrogen equipment/technologies are also reviewed as required by corporate policy by a Corporate Risk Review process. This process is managed by our Process Safety department and ensures that appropriate reviews are conducted to meet corporate risk and safety metrics. The Chief Engineer's office provides much of this technical support and advice.

The following key experiences uniquely qualify Air Products to supply hydrogen related services:

- Industry leader in hydrogen safety engineering
- Global leader in merchant hydrogen production, distribution and supply
 - >5.0 million kg per day H₂ production
- Expert in hydrogen and hydrogen/natural gas refueling station design and installation

- Commercial developer, supplier and operator of turnkey hydrogen production on-site plants
- Air Products is a world leader in hydrogen safety and engineering, and a global leader in hydrogen production, distribution and hydrogen fueling stations
 - 180 hydrogen fueling projects resulting in approximately 1,000,000 fuelings per year.
- To provide an idea of the size of Air Products which equates to the resources available to support the production, packaging, logistics and delivery system related to hydrogen, the following table is provided:

2015 sales of \$9.9 billion	20,000 employees	operations in over 50 countries
284 on Fortune 500 list	75 years in business	170,000+ customers
1800 miles of industrial gas pipeline	750+ production facilities	30+ industries served

Air Products has an unsurpassed safety record in the production, storage, handling, and distribution of hydrogen and other gases. We have earned more safety-related awards than any other industrial gas company, and have taken a leadership role in supporting the market in the safe use of hydrogen fuel.

Air Products has a dedicated Hydrogen Fuel Station Engineering team of over 20 engineers. These engineers collectively have over 100 years of experience designing, building and installing hydrogen fuel stations, in addition to their extensive experience supplying hydrogen equipment for industrial customers. Air Products also has a dedicated Hydrogen Fuel Station Operations team of over a dozen engineers and technicians located to directly support these fuel stations in the California market.

Since the early 1990s, Air Products' safety, operations, and engineering teams have participated in various safety hazard reviews involving advanced hydrogen energy systems, including hydrogen fuel cell powered vehicles, refueling stations, and numerous demonstration projects. Beginning with our initial station, our safety approach is unique in the industry and, in fact, Air Products has become the standard of the industry over time. In addition, the company's experts are active participants on both national and international committees for developing codes and standards for hydrogen technologies.

As evidence of our progressive and active participation in the industry, Air Products participates in and has worked with the following safety, codes and standards activities:

- NFPA 2 Technical Committee
- NFPA 55 Technical Committee
- Hydrogen Safety Panel
- SAE J2600, SAE J2601
- Canadian Standards Association (CSA) HGV series standards
- Factory Mutual
- Compressed Gas Association committees including the Hydrogen Technology Committee

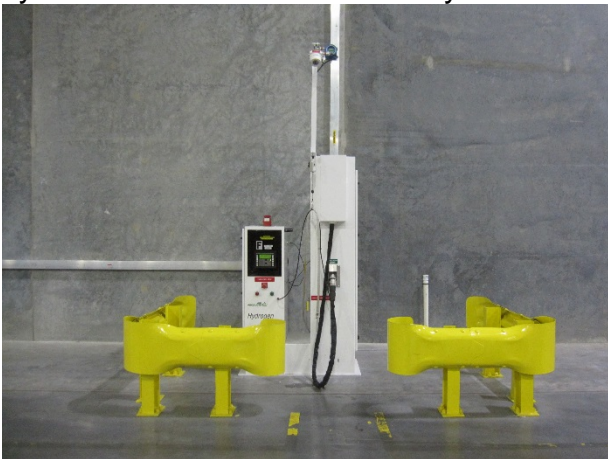
Air Products' direct membership on several of these organizations is testimony to Air Products' commitment to being a subject matter expert regarding all aspects of hydrogen, as well as our commitment to the safe growth of the hydrogen industry. Furthermore, Air Products is in a continual collaboration and learning mode due to interactions with Authority Having Jurisdiction (AHJ), third party inspection agencies, professional engineers and the customer's HAZOP review process. Air Products extensive knowledge of the industry is built into the system we are proposing. The proposed hydrogen fueling equipment meets Code requirements, and exceeds them in many aspects.

Examples of Hydrogen Infrastructure Experience

Air Products has hands-on operating experience at over 180 hydrogen fueling station projects worldwide. A summary of a few of those installations is highlighted below.

Lowes, Adairsville, GA

In the Summer of 2012, APCI installed a liquid hydrogen tank, compression skid, gaseous storage tubes and six dispensers at the Adairsville facility. Aside from the initial operational period for the system when there were vent system issues, the system has quietly become a ubiquitous hydrogen supply source. The dual compressor system has reliably provide pressurized product since its installation. Our performance at the site is best left judged by our customers at the site, the Lowe's Adairsville team.



Central Grocers, Joliet, IL

Air Products installed indoor hydrogen fueling infrastructure to fill a fleet of over 200 fuel cell powered lift trucks at Central Grocers' distribution center in Joliet, Illinois. Central Grocers' distribution center became operational at the end of the first quarter of 2009. At the time, the facility represented the single largest deployment of fuel cell vehicles in the world, as well as the first greenfield facility to adopt hydrogen fuel cell powered forklifts.



Air Products' indoor hydrogen fueling dispensers and related infrastructure fuels the fleet of new lift trucks supplied by Yale

Equipment Services, located in Rosemont, Illinois and fitted with Plug Power's GenDrive™ hydrogen fuel cell power packs. Air Products' fueling infrastructure includes an outdoor liquid hydrogen storage and compression system, along with multiple indoor fueling dispensers for operator refueling. The GenDrive power units can be quickly refueled by the lift truck operator in less than two minutes.

The Kroger Company – Forest Park, GA



Air Products latest system was installed for the Kroger Company in Forest Park, GA. The system comprises of the tank, cryogenic compression skid, 12 gaseous storage tubes and 5 dispensers which support approximately 250 forklifts. Air Products exceeded project expectations and the system has been operating flawlessly since installation. Just as with the Lowe's Adairsville site, our performance at the site is best left judged by our customers at the site, the Kroger Forest Park team.

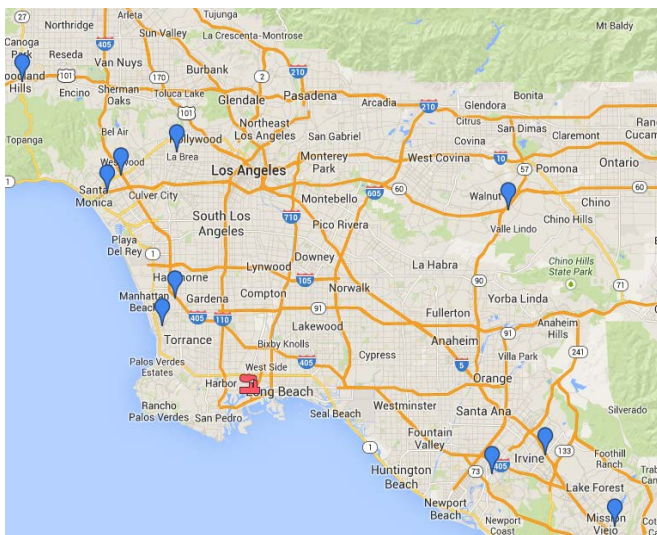
Of the 180 hydrogen fueling station projects provided by Air Products, over half have supported the automotive market. The technological principles are very similar and the experience gained is transferrable between the material handling market and automotive market.

Air Products first major fueling station project consisted of supplying the Chicago Transit Authority station in 1997. Efforts continued to grow with the installation of the Ford Dearborn fueling station in 1998 and Air Products provided the overall project management and design for the California Fuel Cell Partnership station in 2000. Since then, Air Products fueling experience has continued to grow rapidly. For example, Air Products has deployed over 40 stations that dispense 700 bar hydrogen into passenger vehicles.

Some automotive projects include:

California Energy Commission Infrastructure Development

Air Products was awarded 10 stations in California funded under rounds I and II of California Energy Commission (CEC) funding. An additional 19 stations are being built under round III of the CEC funding. Air Products hydrogen refueling stations account for ~60% of the market in California. The first operational station was commissioned in February 2015 with all stations operational by the end of calendar year 2016. A map of the locations and a picture of the new dispenser are shown below. These projects and our market share demonstrate our hydrogen expertise with regards to production, delivery and equipment.



South Coast Air Quality Management District (SCAQMD)

Air Products' designed and constructed five hydrogen fueling stations for the California South Coast Air Quality Management District (SCAQMD). Fueling stations are located in Burbank, Riverside, Santa Monica, Ontario and Santa Ana, and were commissioned during 2005 and 2006. In Burbank, Santa Monica and Riverside, Air Products' Series 200 system, a totally integrated vehicle fueling system, provides the storage, compression and dispensing of hydrogen to the vehicles. Hydrogen is generated onsite using electrolyzers supplied by Proton Energy Systems. The stations fill primarily Toyota Prius's that were converted to run on hydrogen (HICE). Additionally, numerous OEM fuel cell vehicles fill at these sites.



Riverside



Burbank



Riverside



Santa Monica

Project Safety and Identification of Safety Vulnerabilities

Air Products utilizes a combination of methodologies to identify potential safety vulnerabilities within a hydrogen refueling system. The primary method is through a site specific hazard review, or HAZOP.

A HAZOP is performed on the standard product line, and each individual system has an independent safety review performed to ensure proper compliance of each site to meet the HAZOP and code compliance. Every system is evaluated based upon this method and hazards are identified. As followup to the HAZOP, a variety of checklists are utilized. These include siting checklists to verify NFPA 2 siting requirements, HAZOP

safeguard action items, and operational readiness inspections (ORI), among many others. These are used to ensure vulnerabilities have been identified and corrective action items are completed prior to startup.

Where identified by the HAZOP, Air Products also employs additional tools such as fault tree quantification, layer of protection analysis (LOPA), dispersion analysis, and radiation analysis as part of the design process.

Air Products has a strong and multi-disciplined team to participate in the HAZOP process. The HAZOP process is led by the Air Products Process Safety team, but includes representatives from the Project, Product, Process Controls, Machinery, Mechanical Equipment, and Operations teams as well.

The Process Safety Lead coordinates with the Project Engineer to ensure all hazards are identified, recommendations completed, and appropriate safeguards are in place.

The HAZOP action item checklist is owned by the Project Engineer who ensures their completion for every system. Finally, the Operational and Readiness Inspection is completed prior to startup and owned by the Air Products Operations Team to verify all checklist items are completed before startup.

Every product has inherent hazards associated with it, such as flammability for hydrogen. These hazards are well known and are easily and consistently managed by system design and proper training. There are a number of sources of information about these hazards, the most common being the Material Safety Data Sheet (MSDS) and the Air Products' SAFETYGRAM, which are attached for reference. Only personnel who are properly trained and are wearing the proper personnel protection equipment should directly handle or interface with these products. These documents are also provided as part of every Operating Manual and are kept on-site at fueling stations.

The primary hazard associated with a hydrogen fuel station is the potential release of pressure and flammable fuel in the immediate vicinity of the fueling public. Extensive analysis has been incorporated into the design of Air Products' systems to mitigate this hazard and reduce risk to an acceptable level. Air Products has been supplying hydrogen fueling stations since well before the establishment of the applicable codes and standards (within NFPA 52, International Fire Code, NFPA 2, etc.). Much of this experience and many of these safeguards have subsequently been incorporated into these codes and their evolutionary process. As an example, listed below are some of the safeguards provided to protect the consumer from a potential release of hydrogen during the fueling process. Similar methodologies and safeguards are present in other portions of the system. Air Products follows a "code-plus" philosophy and includes safeguards that exceed code requirements.

Safeguards and Protections for Dispensing Hydrogen

- Compliance with applicable Codes and Standards such as NFPA 2, NFPA 55, International Fire Code, California Fire Code, SAE standards, CGA standards, and CSA standards
- Third party certification of the equipment to demonstrate compliance
- Full permitting from AHJ to demonstrate compliance
- System designed with piping rated well beyond operating limits
- Flame and gas detectors
- Breakaway connectors with all fittings shielded from the fueling operator
- Multiple levels of fuel shutoff for emergency activation
- User interface that provides training and guidance on fueling process
- Electronic leak checks between, prior to, during, and after the filling process
- Electronic hardware self checks on each fill
- Secondary control system to verify proper operation of primary controller.

Overall, the identification of safety vulnerabilities is dictated by Air Product's EH&S, Volume 1, section 9 procedures. The table is attached to provide documentation of those procedures which impact the identification of safety vulnerabilities.

SECTION 9 - PROCESS SAFETY MANAGEMENT

Document	Priority	Rev	Title	Region	FAQs?	Job Aids?	Effective Date
25-0015	3	0	Trade Secrets OSHA PSM	North America			May 16
25-0016	3	0	OSHA PSM Training Requirements	North America			May 16
25-0017	3	0	Maintaining Process Safety Management (PSM) Documentation	North America			May 16
25-010901a	1	1	Project Hazard Review Process			yes	Feb 13
25-010901b	1	1	Operating Plant Hazard Review Process			yes	May 13
25-010904	1	1	Operational Readiness Inspection Process (or Pre-Start-up Safety Review)			yes	Feb 15
25-010904A	1	0	Operational Readiness Inspection Process (or Pre-Startup Safety Reviews) - supporting OPS eMOC only	Global			May 16
25-010905	1	0	Management of Change			yes	Dec 14
25-010905A	1	0	Management of Change - supporting OPS eMOC only	Global			May 16
25-010906	1	1	Quantitative Risk Analysis of Onsite Hazards for Owned and Operated Facilities	Global			Feb 16
25-010907	3	1	Offsite Quantitative Risk Analysis of Hazards				Aug 14
25-010911	2	0	Managing Changes of Personnel Involved in Plant Process Safety Activities			yes	Sep 14
25-010912	1	1	Siting and Design of Occupied Plant Buildings for Overpressure Protection	Global			Oct 15
25-010913	1	1	Siting of Occupied Buildings for External Fire Protection	Global			Feb 16

25-010935AM	3	0	OSHA PSM Process Safety Information	North America			Apr 12
25-010938	1	0	Seveso Directives (Europe Only)	Europe			Oct 13
25-010951AM	3	0	Definition of a Covered Process	North America			Jan 09
25-010970AM	2	0	Inventory Control of Bulk LHY Tanks	North America			Oct 12
25-010974	3	0	Methodology for the Identification of Major Accident Hazards (Europe Only)	Europe			Oct 13
25-010975	3	0	Requirements for CE Marking to European Directives	Europe			Jan 09
25-010976	3	0	Management Structure and Terms of Reference of the CE Plating and PED Steering Committees				Jan 09
25-010977AN	3	0	Guidance for Evaluating the Hazardous Zone in the General Vicinity of Oxygen and Inert Vents	Europe			Jun 13
25-010978	3	0	Application and Implementation of the Pressure Equipment Directive				Jan 09
25-010979	3	1	Process Safety Issue Identification and Management				Sep 14
25-010980AN		0	Technical Responsibility for the European Merchant Business	Europe			Aug 12
25-010981AM	3	1	EPA's Risk Management Program	North America			Nov 12

Risk Reduction Plan

As noted above, Air Products primarily follows the HAZOP methodology for identifying potential safety hazards. Once a hazard is identified, one or multiple safeguards are required in order to sufficiently mitigate the risk. At the completion of the HAZOP, the complete list of safeguards are provided to the Project Engineer for implementation. Completion of these safeguards are mandatory before startup, and are incorporated into the ORI checklist.

In addition to internal checks and procedures, the Air Products fueling systems are evaluated and inspected by a third party certification body to ensure compliance with the relevant and applicable codes.

The stations also comply with the permitting process of the local municipality and associated Authorities Having Jurisdiction. The station will commence operation only after all inspections are complete and permits issued.

Operating Procedures

Each system is provided with an Operations and Maintenance manual which includes specific procedures for the safe operation and maintenance of the hydrogen fueling stations.

At a higher level, Operating Procedure requirements are dictated by the internal Air Product's EH&S manual. The table attached below provides documentation of some of these procedures which impact the operation of a hydrogen fuel station as well as operating procedures. Operating procedures are developed with Operations and Maintenance technician input and are verified through "real world" application. Training is provided for these procedures.

Hydrogen fuel stations contain less than 10,000 lbs of hydrogen, and therefore are not under the jurisdiction and authority of OSHA's Process Safety Management. However, the principles of PSM are not limited to large systems. Air Products applies these same process safety management procedures to our other systems as well.

SECTION 9 - PROCESS SAFETY MANAGEMENT

Document	Priority	Rev	Title	Region	FAQs?	Job Aids?	Effective Date
25-0015	3	0	Trade Secrets OSHA PSM	North America			May 16
25-0016	3	0	OSHA PSM Training Requirements	North America			May 16
25-0017	3	0	Maintaining Process Safety Management (PSM) Documentation	North America			May 16
25-010901a	1	1	Project Hazard Review Process			yes	Feb 13
25-010901b	1	1	Operating Plant Hazard Review Process			yes	May 13
25-010904	1	1	Operational Readiness Inspection Process (or Pre-Start-up Safety Review)			yes	Feb 15
25-010904A	1	0	Operational Readiness Inspection Process (or Pre-Startup Safety Reviews) - supporting OPS eMOC only	Global			May 16
25-010905	1	0	Management of Change			yes	Dec 14
25-010905A	1	0	Management of Change - supporting OPS eMOC only	Global			May 16

25-010906	1	1	Quantitative Risk Analysis of Onsite Hazards for Owned and Operated Facilities	Global			Feb 16
25-010907	3	1	Offsite Quantitative Risk Analysis of Hazards				Aug 14
25-010911	2	0	Managing Changes of Personnel Involved in Plant Process Safety Activities			yes	Sep 14
25-010912	1	1	Siting and Design of Occupied Plant Buildings for Overpressure Protection	Global			Oct 15
25-010913	1	1	Siting of Occupied Buildings for External Fire Protection	Global			Feb 16
25-010935AM	3	0	OSHA PSM Process Safety Information	North America			Apr 12
25-010938	1	0	Seveso Directives (Europe Only)	Europe			Oct 13
25-010951AM	3	0	Definition of a Covered Process	North America			Jan 09
25-010970AM	2	0	Inventory Control of Bulk LHY Tanks	North America			Oct 12
25-010974	3	0	Methodology for the Identification of Major Accident Hazards (Europe Only)	Europe			Oct 13
25-010975	3	0	Requirements for CE Marking to European Directives	Europe			Jan 09
25-010976	3	0	Management Structure and Terms of Reference of the CE Plating and PED Steering Committees				Jan 09
25-010977AN	3	0	Guidance for Evaluating the Hazardous Zone in the General Vicinity of Oxygen and Inert Vents	Europe			Jun 13
25-010978	3	0	Application and Implementation of the Pressure Equipment Directive				Jan 09
25-010979	3	1	Process Safety Issue Identification and Management				Sep 14
25-010980AN		0	Technical Responsibility for the European Merchant Business	Europe			Aug 12
25-010981AM	3	1	EPA's Risk Management Program	North America			Nov 12

Mechanical Integrity and Ongoing Maintenance

Systems can be owned by either Air Products or by other external parties. Regardless of ownership, the following ongoing and preventative maintenance procedures are provided for the station.

During initial startup, systems are fully function tested to ensure complete safety and operational performance. Mechanical systems are fully leak tested via a pneumatic pressure test to 1.1x MAWP for each respective line. Electrical systems are checked for continuity, proper voltage, and calibrated for instrument settings and range. Finally, the dispenser is tested for SAE J2601 compliance and Weights and Measures certification.

As shown in fault tree quantification studies, system design alone is not adequate without appropriate maintenance procedures and requalification of equipment. A system that meets safety requirements when built will not meet those requirements later if the equipment and safeguards are not proven to be functional. For this reason, Air Products provides a preventive maintenance checklist for monthly, quarterly and annual proof checks and inspections for equipment. For example, all gas detection equipment is calibrated per manufacturer requirements and all critical safety circuits are function tested at least annually. These preventive maintenance checklists are completed by highly trained maintenance technicians whose primary focus is to support hydrogen fueling stations.

Air Products delivery drivers, who do not make mechanical repairs, are trained and instructed to report all repair requests to the responsible maintenance department after each delivery of product. This provides additional frequency of inspection for each system since product can be delivered on a daily basis. Our goal is to maintain a totally reliable, safe, and functional system.

In addition to inspecting for leaks, mechanical integrity and general condition of the system, the following guidelines are followed. In all cases, Federal, State, or Local regulations take precedence if they are more stringent. Whenever individual customer requirements supersede these, the more stringent requirement is utilized.

An example of a Mechanical Integrity program is the maintenance of the hydrogen high pressure storage vessels. Programs are in place to ensure the requirements of the pressure vessels, be they ASME or DOT, are maintained. The fueling station counts the pressure cycles for the ASME vessels to track their inspection intervals and overall fatigue life. DOT vessels are maintained in compliance with DOT retest procedures and are tested every five years.

Overall, preventative maintenance and inspections requirements are dictated by Air Products' internal EH&S, Volume 1, section 20 procedures. The following table is attached to provide examples of some of these existing procedures which impact preventative maintenance and inspections.

SECTION 20 - INSPECTION AND MAINTENANCE

Document	Priority	Rev	Title	Region	FAQs?	Job Aids?	Effective Date
25-012001	3	0	Planned Inspection and Maintenance	Global			May 14
25-012002	3	0	Risk Based Inspection (RBI) Methodology For Vessels and Piping	Global			May 14

25-012003	3	0	Fire Detection and Protection Systems				Jun 09
25-012004	3	0	Emergency Eyewash/Shower Equipment			yes	Sep 14
25-012005	3	2	Fire Extinguisher and Maintenance			yes	Oct 14
25-012006	1	4	Global Relief Device Testing and Inspection	Global			Feb 16
25-012008	3	1	Tool Inspection	Global		yes	Nov 15
25-012010	2	1	Selection of Cleaning Agents and Methods for Equipment Used in Oxygen Service				Jul 12
25-012011	2	0	Leak Detection		yes	yes	Jun 10
25-012012	2	0	Leak Repair				Jun 10
25-012013	2	0	Mechanical Integrity of Process Equipment				Oct 14
25-012014	2	0	Mechanical Integrity of Uninterruptible Power Supply (UPS)				Jun 12
25-012015	1	0	Block Valve Use With Relief Devices				Nov 11
25-012016	1	1	Policy For Administration of Captive Key and Lock Open Valve Systems		yes	yes	Dec 11
25-012024	2	0	Mechanical Integrity of Safety Instrumented Systems (SIS)			yes	Jul 13
25-012028	3	1	Storage Tank Electrical Earthing Inspection and Testing	Global			Oct 14
25-012036	1	2	Authorization for Approval of Extensions to Mechanical Integrity Inspection, Test Intervals, and Repairs	Global			Oct 15
25-012037	2	1	Mechanical Integrity Program for Pressure Systems In Production Plants	Global		yes	Nov 14
25-012039	1	0	Mechanical Integrity Work Process	Global	yes		Feb 15
25-012040	2	0	Prevention and Control of Legionella in Water Systems [Reaffirmed Nov. 2014]				Nov 14
25-012041AM	3	0	Quality Assurance for Mechanical Integrity	North America			Sep 07

25-012042	2	1	In-Place Relief Device Testing Procedure				Oct 14
---------------------------	---	---	--	--	--	--	------------------------

Management of Change

Implementation of a robust management of change process is important to the safe operation of any system, particularly for hydrogen fueling stations. Air Products has an established management of change process in place. This process is used so that any change to a system can be documented, reviewed, and approved through the appropriate channels. Ensuring that changes do not compromise equipment safety, personnel safety, and product integrity are of utmost importance.

Any change to a system requires that the MOC process be followed. The only two exceptions to this rule are changes that include replacement in kind components or operational changes that are within the system's operational capability. All other changes are documented on an MOC form that includes the proposed change, the justification for the change, the nature and duration of change, and all modified documents/procedures that are impacted by the change. This completed form is then reviewed by the relevant subject matter experts and operational groups that will be impacted by the change. Only after agreement is the MOC approved.

Approved MOCs are then returned to the project engineer for implementation. An MOC checklist is generated to ensure all action items are completed. The physical change, changes to procedures, training of operators, and updated documentation are examples of MOC checklist items. Also included are ergonomic and housekeeping items, temporary work instructions, and purging/recommissioning items necessary to bring the system online.

Every MOC must be approved by a team of approvers that are skilled and experienced with hydrogen fueling stations. The review team consists of representatives from Engineering, Operations, Process Safety, and Management. The review team also identifies additional reviewers as needed to provide technical input. All MOC's are stored electronically in either the on-line MOC database or the on-line project file for the system.

The MOC procedure is found in Volume 1, Section 9 of our internal EH&S manual.

Management of Change	25-010905* Issued: 1 May 2009 Effective: 1 May 2009 Supersedes: January 2004 Reaffirmed: Dec. 2014 Rev. 0 Page 25 of 45
-----------------------------	--

Project Safety Documentation

Project safety is also proscribed by Air Product's EH&S, Volume 1, section 9 procedures.

All projects design, drawings, and safety information is saved and stored within our internal Vantage and STAC electronic databases.

The following table is attached to provide documentation of some of these procedures which impact project safety. Many of these procedures apply directly to the design and operation of a hydrogen fueling station.

Many others provide the safe working environment for construction, installation, and operating activities that apply to all systems, but are equally important for hydrogen fueling stations.

SECTION 5 - SAFE SYSTEMS OF WORK

Document	Priority	Rev	Title	Region	FAQs?	Job Aids?	Effective Date
25-010501	1	1	Job Safety Analysis (JSA)/Workplace Risk Assessment		yes	yes	Jun 14
25-010501AN	1	0	Job Safety Analysis/Workplace Risk Assessment (Europe Attachment)	Europe			Mar 12
25-010506	2	1	Personal Protective Equipment Overview		yes	yes	Mar 13
25-010507	3	0	Head Protection		yes		Mar 13
25-010508	3	1	Eye Protection			yes	Jan 13
25-010509	3	0	Hearing Protection – Personal Protective Equipment				Feb 13
25-010510	3	1	Foot Protection			yes	Mar 13
25-010511	3	2	Hand Protection		yes		Nov 13
25-010512	3	3	Protective Clothing	Global	yes	yes	Jan 16
25-010514	3	0	Hydro-Jetting (Water Blasting) Safety			yes	Apr 13
25-010517	3	0	Safety Signs			yes	Mar 12
25-010517AN	3	0	Safety Signs (Europe Attachment)	Europe			Mar 12
25-010519	2	3	Welding, Cutting and Brazing Safety		yes	yes	Dec 14
25-010520	2	4	Electrical Safe Work Practices	Global	yes	yes	Apr 15
25-010521	1	0	Fall Protection				Jul 12
25-010522	2	1	Manbaskets - Replaced by 4WCE-600501			yes	Jul 01
25-010524	2	0	Bypass Policy	Global		yes	Oct 10
25-010529	2	2	Control of Excavation Work		yes	yes	Jan 15
25-010530	1	2	Safety Work Permit		yes	yes	Jan 12
25-010532	1	3	Energy Isolation and Lockout/Tagout/Try	Global	yes	yes	Mar 16

25-010533	1	1	Permit-Required Confined Space Entry		yes	yes	Nov 12
25-010534	1	1	Confined Space Rescue	Global		yes	Mar 16
25-010535	1	2	Portable Atmospheric Monitors for Confined Space Operations				Jul 12
25-010536	3	1	Confined Space Entry in Vessels Containing Adsorbents or Catalysts	Global			May 16
25-010537	1	2	Reclassification of Permit-Required Confined Spaces	Global	yes	yes	Apr 16
25-010538	2	2	Flash Fire Protective Clothing (FFPC)	Global	yes		Jan 16
25-010539	2	0	Use of Utility Gases and Fluids				Apr 14
25-010540	2	2	Scaffolding			yes	Oct 09
25-010541	2	2	Flammable Systems Purging	Global		yes	Feb 16
25-010542	1	1	Confined Space Entry Into IDLH Atmospheres	Global			Mar 16
25-010543	3	1	Ladder Safety	Global	yes	yes	June 16
25-010546	2	2	Electrical Safe Work Practices - For Q-EL / Fully Authorized Personnel	Global		yes	Apr 15
25-010549	3	1	Temporary Barricades				Mar 14
25-010550	2	2	Equipment/Line Opening and Clearing	Global		yes	Feb 16
25-010552	2	0	Crane Safety - See Engineering Standard 4WCE-600500			yes	
25-010553	2	0	Safe Use of Overhead Cranes - See Engineering Standard 4WCE-600503				
25-010560	3	0	Personal Atmosphere Monitor Risk Assessment				Mar 12
25-010561	3	1	Mobile Elevating Work Platforms		yes		Apr 14
25-010562	2	2	Driving Safety for Passenger Vehicles	Global	yes		Nov 15
25-010563	2	0	Hazardous Enclosures				Apr 12
25-010570	3	0	California Petroleum Safety Orders (U.S.)	North America			Apr 14

Communication Plan:

It is important for the project team to communicate both internally and externally for a successful and safe project. A key step at the initial project development stage is to engage appropriate local stakeholders for the project, including the authorities having jurisdiction and neighbors of the facility. As appropriate, outreach efforts will be established to communicate the nature of the project as well as the overall scope. For example, this can consist of attending town hall meetings, planning commission meetings, school board meetings, etc. Education is an important step to ensure future support for the project.

After initial approval and permits are obtained, communication will continue with training provided to local first responders, facility personnel, and operators of the fueling station.

Personnel Training

Training has two components; an EH&S component and a technical component. The EH&S component is dictated by Air Product’s EH&S, Volume 2, which has 20 sections. The attached title depicts one of the internal standards which define the required training for all employees. Training is tracked via an on-line corporate training database. This database also notifies employees when refresher training on a particular topic is required.

EH&S Training Requirements/Matrix	25-020001* Issued: 13 April 2015 Effective: 13 April 2015 Supersedes: 27 June 2014 Rev. 19 Page 28 of 21
--	--

The technical component of training is handled by the engineering and operations teams. For example, the operations team has a procedure that lists competencies for each grade level of technician.

There are 4 levels of Air Product’s Maintenance technicians (Level 4 is New Hire, Level 1 is the highest rating).

- Level 4 to level 3 requires mastery of over 600 skills.
- Level 3 to level 2 adds an additional 478 skills.
- Level 2 to level 1 adds an additional 401 skills.

The total skills to reach Level 1 = 1,479.

Hydrogen fuel station technicians have specific competencies that are required for hydrogen fueling stations.

Safety Reviews

As previously described, Air Products uses the HAZOP methodology as the primary safety review for any project. If deemed necessary or required by local jurisdictions, additional safety reviews or analysis are performed. Layer of protection analysis (LOPA), NEPA/CEQA environmental reviews, and root cause analysis (RCA) are all tools Air Products have used in the past to identify and address any safety related issues.

Systems are also third party certified to meet applicable codes and standards, plus reviewed and approved by the Authority Having Jurisdiction.

Safety Events and Lessons Learned

Air Products utilizes the HAZOP procedure to identify project related risks during the initial execution. As systems are commissioned, and throughout ongoing operations, safety related incidents and near misses are recorded and investigated through the Event Management (EM) tool within our internal SAP system. The procedures to be followed are highlighted in the below chart. At a high level, the details of an incident are recorded by an initiator. Next an investigation lead is selected. Then an investigation team is created who performs the investigation and creates action items to address any deficiencies that led to the incident. Depending on the case, changes to materials, equipment, or procedures are made to address the site specific incident as well as prevent similar cases from occurring in the future.

In addition, Air Products also has a Design Near Miss system for items that are found in the design of systems prior to installation. These are also recorded and investigated in similar fashion.

After projects are completed, the project team will meet to review what went well and what didn't, with a special emphasis on safety issues.

SECTION 11 - INCIDENT REPORTING AND INVESTIGATION

Document	Priority	Rev	Title	Region	FAQs?	Job Aids?	Effective Date
25-0002	2	0	EU Injury and Illness Management	Europe		Yes	Feb 16
25-011101	1	7	Incident Notification, Investigation and Reporting	Global	yes	yes	Oct 15
25-011102	3	0	Red Border Reports and EHS Alerts			yes	Dec 09
25-011114AM	2	0	Vehicle Accident and Hazardous Materials Incident Reporting	North America			Sep 07
25-011117	3	0	Extraordinary Accident Investigation and Reporting				Aug 14

Emergency Response

There are, of course, any number of emergency scenarios that could develop during the operation of a fueling station. Systems are designed with large safety factors and numerous safeguards in anticipation of all likely problems. Based on this design, the worst case scenarios should create no extreme hazard. However, incidents can still occur and must be addressed via appropriate planning and procedures. Training on these procedures is provided to the local maintenance and operating staff, the site owner and employees, and the local first responders.

The following procedures provide some examples of internal procedures for to address appropriate emergency.

This information represents first-level responder information, as defined by the Federal HAZWOPER Regulations.

SECTION 8 - EMERGENCY PREPAREDNESS

Document	Priority	Rev	Title	Region	FAQs?	Job Aids?	Effective Date
25-010801	3	2	Emergency Management Overview				Jun 11
25-010802	1	1	Site Emergency Planning	Global		yes	Mar 16
25-010804	2	1	Lone Working	Global		yes	Nov 15
25-010816AM	2	0	Hazardous Materials Emergency Resonse Operations (U.S.)	North America			Sep 07
25-010819	2	0	Response to Off-site Emergencies Involving Air Products' Products or Wastes				Sep 09
25-010820	2	0	Off-Site Emergency Response Process Management				Sep 10

Self Audits

Air Products will be responsible for a number of key safety procedures throughout this project. The HAZOP review, ORI, and MOC process are a few examples. Air Products' Project and Engineering team are responsible for the execution of all applicable procedures during the project. These procedures ensure that all equipment is designed to the latest Air Products and industry standards and are safe for delivery to our customers. In addition, Air Products will be responsible for the startup and commissioning of each station. Before any hydrogen can be introduced, all checklist items must be completed. This ensures the system is ready before any flammable gas enters the system.

Air Products will work closely with our project partners to maintain a safe working environment. We are subject to audit by our customers and likewise, we audit our vendors and contractors to ensure compliance with our standards.

Air Products also has procedures to ensure compliance with internal standards, and the project team is subject to audit at any time. For example, a random drug testing program is in place for all employees that are in safety sensitive roles. There is also a system for management personnel to perform inspections of construction and operating sites during field visits.

Other Coments or Concerns:

Air Products has developed an extensive management system to address Environmental, Health & Safety. Our EH&S Management System supports the principles promoted by international standards such as ISO 14001 (Environmental) and OHSAS 18001 (Occupational Health and Safety). The components of those principals are depicted in the attached table.

OHSAS 18001 (Occupational Health & Safety)	ISO 14001 (Environmental)	APCI EH&S Management System*
General Requirements - Management System	General Requirements - Management System	√
OH&S Policy	Environmental Policy	√
Planning	Planning	√
Planning For Hazard Identification, Risk Assessment And Risk Control	Environmental Aspects	√
Legal And Other Requirements	Legal And Other Requirements	√
Objectives	Objectives And Targets	√
OH&S Management Programme(S)	Environmental Management Programme(S)	√
Implementation And Operation	Implementation And Operation	√
Structure And Responsibility	Structure And Responsibility	√
Training, Awareness And Competence	Training, Awareness And Competence	√
Consultation And Communication	Communication	√
Documentation	Environmental Management System Documentation	√
Document And Data Control	Document Control	√
Operational Control	Operational Control	√
Emergency Preparedness And Response	Emergency Preparedness And Response	√
Checking And Corrective Action	Checking And Corrective Action	√
Performance Measure And Monitoring	Monitoring And Measurement	√
Accidents, Incidents, Non-Conformances And Corrective And Preventive Action	Non-Conformance And Corrective And Preventive Action	√
Records And Records Management	Records	√
Audit	Environmental Management System Audit	√
Management Review	Management Review	√

PROPRIETARY NOTICE: All information contained herein is the property of Air Products and Chemicals, Inc.; it must be kept confidential and may not be disclosed without Air Products' express prior written consent. Further, such information may not be used, in whole or in part, directly or indirectly, in the manufacture or sale of hydrogen or hydrogen dispensing equipment without the express written permission of Air Products. Air Products authorizes the necessary and reasonable use of this document, and information herein, solely for the evaluation of the proposal for which this information is being delivered. No other use is authorized or permitted.

Hydrogen Refueling System Maintenance

Invent the Future:

STRATOSFUEL conducts all work in accordance with industry best practices and standards, with client and manufacturers requirements and recommended practices. The work is conducted by trained and qualified technician's and engineer's in a safe, quality and timely manner with a minimum goal of 95% uptime. It is proposed that HRS work will be conducted on a Time and Material basis following the practices described above. The T&M rates are competitive per the current market place work. All planned and scheduled maintenance work will be conducted per a defined scope of work with a not to exceed price. Any deviations will be approved by the client prior to proceeding. The same will be true for out of scope and changes to the agreed upon scope of work.

Safely - HSSE Management System:

STRATOSFUEL places the highest priority on health and safety and shall maintain a safe working environment during performance of the work identified in the Scope of Services. All STRATOSFUEL technicians and sub-contractors shall meet and comply with all STRATOSFUEL and Client applicable health, safety and security requirements and rules, including, without limitation, state and local laws and regulations. STRATOSFUEL is green banded in the PICS system and all technicians will have API Work Safe certifications and training.

STRATOSFUEL Health and Safety Program (HASP) embodies the requirements and expectations of all its clients and therefore meets their expectations at a minimum and in most cases exceeds them. The HASP includes, PPE requirements, ICC, OSHA, DOT and other regulatory training requirements, (Permit to Work program), API Work Safe, daily tailgate meetings, onsite inspections, regular random drug testing, vehicle driver training and other health and safety focused activities.

STRATOSFUEL has a manned 24/7 Call Center and maintenance team. Our Dispatchers are trained to understand the customer needs and through GPS access GPS determine and dispatch the closest technician to the location requiring service. Our technicians are trained and certified with fully stocked service vehicles capable of troubleshooting and resolving problems. Our service technicians are available 24 hours a day for on-call emergency assist and troubleshooting needs.

Experience:

STRATOSFUEL has been in business since 2015 providing services to the Retail petroleum, natural gas and hydrogen sectors. STRATOSFUEL is a design-build company offering a complete suite of services - engineering, construction, fueling station repair, facility start up, permitting management, construction management, warehousing, procurement and more. We provide a multidisciplinary approach to ensure that our clients' needs are not only met, but are exceeded. We understand the impact of designing, constructing and maintaining an efficient and safe fueling station. Services provided are Preliminary Site Assessment, Conceptual Station Design, Construction Documents, CAD, Engineering – California Registered Professional Engineers on staff, Petroleum, Hydrogen, CNG, LNG Fueling facility design, Permitting, Entitlement, building permits, Bidding Management, Equipment and Parts Procurement, Construction Management, Construction, Fueling Station Maintenance & Repair and Compliance Testing & Repair. Shell Retail has been a client of STRATOSFUEL's since day one of operation.

Skills, workmanship, supplier staffing and competence:

STRATOSFUEL has a manned 24/7 Call Center and maintenance team. Our Dispatchers are trained to understand the customer needs and through GPS access GPS determine and dispatch the closest technician to the location requiring service. Our technicians are trained and certified with fully stocked service vehicles capable of troubleshooting and resolving problems. Our service technicians are available 24 hours a day for on-call emergency assist and troubleshooting needs.

STRATOSFUEL uses Dispatch Log (D Log) as its CMMS. All aspects of the maintenance service process are managed in D Log from call logging, tracking, prioritization, request status, tech location vis GPS, tech vehicle parts inventory, tech certification, man hours, billing, query capability, location operational status (if enabled), warehouse parts management, historical data etc..

STRATOSFUEL maintains a warehouse of 2,200 sft with a rolling inventory of \$350,000 of owned and customer managed equipment and parts. The inventory is in place to support our client's maintenance expectations. All parts are tagged and managed real time through our Procurement department. As parts are used, the system tracks the use and when the minimum quantity is triggered new parts are ordered to ensure proper inventory levels are maintained. Our maintained technician's trucks are replenished almost on a daily basis with new inventory. This is done by a delivery process to the technicians in the field to ensure full technician productivity.

STRATOSFUEL offers the following:

- Technicians are ASC trained and certified to service Gilbarco, Wayne, Bennett, VeriFone, Comdata dispensing and point of sale equipment. Servicing dispensing and POS equipment is one of STRATOSFUEL's core competencies.
- Technicians are experienced and trained (Parker, Tylock, Swagelok, etc..) in cone and thread tubing installation. They have completed numerous cone and tread installations on natural gas and hydrogen projects.
- 2 Engineers who are trained in troubleshooting and diagnosing various PLC and control systems. The Engineer's direct our field Technicians to make client approved corrections and adjustments to PLC's and controls. STRATOSFUEL currently manages the Rockwell PLC and control systems for the Shell LNG systems in the US.
- Site telecommunications, remote monitoring and telemetry (if client enabled), fire and gas detector monitoring services are also available.
- 2 Engineer's and an in house electrical department who are trained in troubleshooting and diagnosing various instrumentation systems. They are experienced in all types of fuel (petroleum, CNG, LNG and Hydrogen) system controls systems.
- In house electrical department (3 electricians) that manages and services our clients electrical needs on construction and maintenance projects.
- Basic and limited HVAC services capabilities. Maintenance and recharge of Hydrogen heat exchanger and refrigeration systems are subcontracted as required.
- In house general and orbital welding capabilities. Specialty welding is typically subcontracted.
- In house general brazing capabilities. Specialty brazing is typically subcontracted.

- Technicians and engineer's are trained to maintain compressed flammable and compressed cryogenic flammable gases.
- 1 technicians who are trained to maintain, overhaul and rebuild compression equipment. Additional training is currently scheduled and pending to cover other compression equipment at our clients requests.

Compliance regulatory and laws:

All STRATOSFUEL technicians and sub-contractors will be trained, appropriately certified by equipment manufacturers/suppliers and meet agency requirements to provide the services required. Any sub-contractors employed by STRATOSFUEL shall be vetted to ensure they meet all certification requirements and approved by Client prior to use.

STRATOSFUEL Technicians, Project Managers, Site Superintendents and other key personal are appropriately trained, certified and qualified to meet Federal, State and local regulatory, manufacturer and supplier and client specific requirements. The training, certification and qualification process is completed through on-site, at manufacturers, 3rd party, on line or train-the trainer sessions. Refresher training is conducted as required by the original training process. All STRATOSFUEL employee training is tracked by individual to ensure the employee's deployed have the appropriate training, certifications and qualifications to perform the required task or activity.

Subcontractors:

RESPONSE: All STRATOSFUEL technicians and sub-contractors will be trained, appropriately certified by equipment manufacturers/suppliers and meet agency requirements to provide the services required. Any sub-contractors employed by STRATOSFUEL shall be vetted to ensure they meet all certification requirements and approved by Client prior to use.

HSSE:

STRATOSFUEL Health and Safety Program (HASP) embodies the requirements and expectations of all its clients and therefore meets their expectations at a minimum and in most cases exceeds them. The HASP includes, PPE requirements, ICC, OSHA, DOT and other regulatory training requirements, API Work Safe, daily tailgate meetings, onsite inspections, regular random drug testing, vehicle driver training and other health and safety focused activities..

Call Center:

STRATOSFUEL's Call Center is currently in place and operating. We currently provide maintenance services and support for clients and 3 sites. We have 3 technicians, 2 are trained on hydrogen systems, and 3 service trucks. The Call Center services include 24/7 call center coverage, routing, call status, call follow up and closure, and monthly reporting via Clients Portal and STRATOSFUEL's Dispatch Log (D Log) system. Our technician's vehicles are tracked via GPS, Verizon Network Fleet on board camera's and tracking system.

STRATOSFUEL has the capability to receive, acknowledge, diagnose and respond to alarm events and currently provide this alarm management service to other clients. STRATOSFUEL receives alarm events from site equipment PLC's via email notification. Alarms are the evaluated based on type and appropriate

action is taken to respond. Alarms are categorized based on type and then responded to based on the response time required by that alarm type.

Service activation and SLA's:

STRATOSFUEL currently has a maintenance service system in place to manage and respond to service requests. Once a site is entered into the system we can immediately begin to accept and respond to service requests. We are currently providing this service to current clients including Ontario CNG.

Support:

STRATOSFUEL is currently in the planning phases to develop and implement an in house HRS testing and calibration device. We currently have the ability to conduct low, medium and high pressure component and system testing and are currently doing so for other clients. Other testing and calibration services are provided through a subcontractor. Again it our intention to offer a full suite of HRS testing, calibration and certification services in the near future.

Performance reporting, business continuity planning, root cause analysis, warranty management etc.

STRATOSFUEL and will establish Key Performance Index's (KPI's) as required for the services provided. The KPI's will be tracked are reported out as required.

Our work order process and management system is described above. All work orders are entered into the management system and tracked to closure with all details filed. The system is also the basis of financial tracking, invoice generation and payment tracking.

Business continuity planning is in place to ensure backup are in place for personnel and critical systems required to provided services and meet the requirements of the contract.

Warranty management is included and cover under the D Log management system. Warranty dates for equipment and services are in the site database and are tracked and applied as appropriate.

Root cause analysis (RCA) are conducted as required when a safety or recordable incident, equipment failure or environmental release occurs. We also continuously review operational data, maintenance and alarm events to watch and determine trends that may impact operational performance which allows action prior to any issues.

SLA Work order priorities.

- SLA definition to P5 and P4 is a reaction time within 4 hours
- SLA definition to P3 is a reaction time within 24 hours
- SLA definition to P2 is a reaction time within 5 days
- SLA definition to P1 is a reaction time within 30 days

STRATOSFUEL has the staffing and capability to respond and meet the required work order priorities and SLA's. The requested service call will define the SLA and STRATOSFUEL will respond accordingly. We currently provide the requested services under the same work priorities and SLA's as required below.

WORK ORDER PRIORITIES		
P5	This priority should only be used for: a) Site Emergency b) Total Fuel Outage	Emergency or SOOA
P4	To be used against HSSE related WO's. R:F within 4 hours (Make Safe)	Site or Person at risk
P3	Serious impact on the sites customer and/or their ability to sell. This priority should be used when the failure results in the site not being able to sell that product/service or has a major negative impact on the customer journey.	Equipment totally unavailable for customer
P2	Significant impact: An equipment fault that impacts the customer to a degree, but can be managed without the immediate attention. Alternative equipment is available.	Working, but operations affected
P1	Minor or no impact on the customer or the site's ability to sell. The failure on the equipment is look & feel only. P1 work orders cannot cause downtime.	Working - Look & Feel

EMERGENCY ACTION PLAN for

Facility Name: _____

Facility Address: _____

DATE PREPARED: ____/____/____

EMERGENCY PERSONNEL NAMES AND PHONE NUMBERS

DESIGNATED RESPONSIBLE OFFICIAL (Highest Ranking Manager at _____ site, such as _____, _____, or _____):

Name: Phone: (_____)

EMERGENCY COORDINATOR:

Name: Phone: (_____)

AREA/FLOOR MONITORS (If applicable):

Area/Floor: Name: Phone: (_____)

Area/Floor: Name: Phone: (_____)

ASSISTANTS TO PHYSICALLY CHALLENGED (If applicable):

Name: Phone: (_____)

Name: Phone: (_____)

Date ____/____/____

EVACUATION ROUTES

- Evacuation route maps have been posted in each work area. The following information is marked on evacuation maps:

1. Emergency exits
2. Primary and secondary evacuation routes
3. Locations of fire extinguishers
4. Fire alarm pull stations' location
- a. Assembly points

- Site personnel should know at least two evacuation routes.

EMERGENCY PHONE NUMBERS

FIRE DEPARTMENT: _____

PARAMEDICS: _____

AMBULANCE: _____

POLICE: _____

FEDERAL PROTECTIVE SERVICE: _____

SECURITY (If applicable): _____

BUILDING MANAGER (If applicable): _____

UTILITY COMPANY EMERGENCY CONTACTS

(Specify name of the company, phone number and point of contact)

ELECTRIC: _____

WATER: _____

GAS (if applicable): _____

TELEPHONE COMPANY: _____

Date: ____/____/____

EMERGENCY REPORTING AND EVACUATION PROCEDURES

Types of emergencies to be reported by site personnel are:

- MEDICAL
- FIRE
- SEVERE WEATHER
- BOMB THREAT
- CHEMICAL SPILL
- STRUCTURE CLIMBING/DESCENDING
- EXTENDED POWER LOSS
- OTHER (specify) _____
(e.g., terrorist attack/hostage taking)

MEDICAL EMERGENCY

- Call medical emergency phone number (check applicable):

- ☐ Paramedics
- ☐ Ambulance
- ☐ Fire Department
- ☐ Other

Provide the following information:

- a. Nature of medical emergency,
- b. Location of the emergency (address, building, room number),
and
- c. Your name and phone number from which you are calling.

- Do not move victim unless absolutely necessary.

- Call the following personnel trained in CPR and First Aid to provide the required assistance prior to the arrival of the professional medical help:

Name: Phone: _____

Name: Phone: _____

- If personnel trained in First Aid are not available, as a minimum, attempt to provide the following assistance:

1. Stop the bleeding with firm pressure on the wounds (note: avoid contact with blood or other bodily fluids).
2. Clear the air passages using the Heimlich Maneuver in case of choking.

- In case of rendering assistance to personnel exposed to hazardous materials, consult the Material Safety Data Sheet (MSDS) and wear the appropriate personal protective equipment.

Attempt first aid ONLY if trained and qualified.

Date ____/____/____

FIRE EMERGENCY

When fire is discovered:

- Activate the nearest fire alarm (if installed)
- Notify the local Fire Department by calling .
- If the fire alarm is not available, notify the site personnel about the fire emergency by the following means (check applicable):

- ☐ Voice Communication
- ☐ Phone Paging
- ☐ Radio
- ☐ Other (specify)

Fight the fire ONLY if:

- The Fire Department has been notified.
- The fire is small and is not spreading to other areas.
- Escaping the area is possible by backing up to the nearest exit.
- The fire extinguisher is in working condition and personnel are trained to use it.

Upon being notified about the fire emergency, occupants must:

- Leave the building using the designated escape routes.
- Assemble in the designated area (specify location):
- Remain outside until the competent authority (Designated Official or designee) announces that it is safe to reenter.

Designated Official, Emergency Coordinator or supervisors must (underline one):

- Disconnect utilities and equipment unless doing so jeopardizes his/her safety.
- Coordinate an orderly evacuation of personnel.
- Perform an accurate head count of personnel reported to the designated area.
- Determine a rescue method to locate missing personnel.
- Provide the Fire Department personnel with the necessary information about the facility.
- Perform assessment and coordinate weather forecast office emergency closing procedures

Area/Floor Monitors must:

- Ensure that all employees have evacuated the area/floor.
- Report any problems to the Emergency Coordinator at the assembly area.

Assistants to Physically Challenged should:

- Assist all physically challenged employees in emergency evacuation.

Date ____/____/____

EXTENDED POWER LOSS

In the event of extended power loss to a facility certain precautionary measures should be taken depending on the geographical location and environment of the facility:

- Unnecessary electrical equipment and appliances should be turned off in the event that power restoration would surge causing damage to electronics and effecting sensitive equipment.
- Facilities with freezing temperatures should turn off and drain the following lines in the event of a long term power loss.
 - Fire sprinkler system
 - Standpipes
 - Potable water lines
 - Toilets
- Add propylene-glycol to drains to prevent traps from freezing
- Equipment that contain fluids that may freeze due to long term exposure to freezing temperatures should be moved to heated areas, drained of liquids, or provided with auxiliary heat sources.

Upon Restoration of heat and power:

- Electronic equipment should be brought up to ambient temperatures before energizing to prevent condensate from forming on circuitry.

- Fire and potable water piping should be checked for leaks from freeze damage after the heat has been restored to the facility and water turned back on.

CHEMICAL SPILL

The following are the locations of:

Spill Containment and Security Equipment: _____

Personal Protective Equipment (PPE): _____

MSDS: _____

When a Large Chemical Spill has occurred:

- Immediately notify the designated official and Emergency Coordinator.
- Contain the spill with available equipment (e.g., pads, booms, absorbent powder, etc.).
- Secure the area and alert other site personnel.
- Do not attempt to clean the spill unless trained to do so.
- Attend to injured personnel and call the medical emergency number, if required.
- Call a local spill cleanup company or the Fire Department (if arrangement has been made) to perform a large chemical (e.g., mercury) spill cleanup.

Name of Spill Cleanup Company: _____

Phone Number: _____

- Evacuate building as necessary

When a Small Chemical Spill has occurred:

- Notify the Emergency Coordinator and/or supervisor (select one).
- If toxic fumes are present, secure the area (with caution tapes or cones) to prevent other personnel from entering.
- Deal with the spill in accordance with the instructions described in the MSDS.
- Small spills must be handled in a safe manner, while wearing the proper PPE.
- Review the general spill cleanup procedures.

Date ____/____/____

STRUCTURE CLIMBING/DESCENDING EMERGENCIES

List structures maintained by site personnel (tower, river gauge, etc.):

No.

Structure Type

Location (address, if applicable)

Emergency Response

Organization* (if available within 30-minute response time)

Emergency Response Organization(s):

Name Phone Number _____

Name Phone Number _____

(Attach Emergency Response Agreement if available)

* - N/A. If no Emergency Response Organization available within 30-minute response time additional personnel trained in rescue operations and equipped with rescue kit must accompany the climber(s).

TELEPHONE BOMB THREAT CHECKLIST

INSTRUCTIONS: BE CALM, BE COURTEOUS. LISTEN. DO NOT INTERRUPT THE CALLER.

YOUR NAME: _____ TIME: _____ DATE: _____

CALLER'S IDENTITY SEX: Male _____ Female _____ Adult _____ Juvenile _____ APPROXIMATE AGE: _____

ORIGIN OF CALL: Local _____ Long Distance _____ Telephone Booth _____

VOICE CHARACTERISTICS

SPEECH/LANGUAGE

☐ Loud
☐ High Pitch
☐ Raspy
☐ Intoxicated
☐ Soft
☐ Deep
☐ Pleasant

Other

☐ Fast
☐ Distinct
☐ Stutter
☐ Slurred
☐ Slow
☐ Distorted
☐ Nasal

Other
☐ Excellent
☐ Fair
☐ Foul
☐ Good
☐ Poor

Other

ACCENT MANNER

BACKGROUND NOISES

☐ Local
☐ Foreign
☐ Race
☐ Not Local
☐ Region
☐ Calm
☐ Rational
☐ Coherent
☐ Deliberate
☐ Righteous
☐ Angry
☐ Irrational
☐ Incoherent
☐ Emotional
☐ Laughing
☐ Factory
☐ Machines
☐ Music
☐ Office
☐ Machines
☐ Street
☐ Traffic
☐ Trains
☐ Animals
☐ Quiet

- ___ Voices
- ___ Airplanes
- ___ Party
- ___ Atmosphere

BOMB FACTS

PRETEND DIFFICULTY HEARING - KEEP CALLER TALKING - IF CALLER SEEMS AGREEABLE TO FURTHER CONVERSATION, ASK QUESTIONS LIKE:

When will it go off? Certain Hour ___ Time Remaining

Where is it located? Building Area

What kind of bomb? _____

What kind of package? _____

How do you know so much about the bomb? _____

What is your name and address?

If building is occupied, inform caller that detonation could cause injury or death.

Activate malicious call trace: Hang up phone and do not answer another line. Choose same

line and dial *57 (if your phone system has this capability). Listen for the confirmation announcement and hang up.

Call Security at _____ and relay information about call.

Did the caller appear familiar with plant or building (by his/her description of the bomb location)?

Write out the message in its entirety and any other comments on a separate sheet of paper and attach to this checklist.

Notify your supervisor immediately.

SEVERE WEATHER AND NATURAL DISASTERS

Tornado:

- When a warning is issued by sirens or other means, seek inside shelter.

Consider the following:

- Small interior rooms on the lowest floor and without windows,
- Hallways on the lowest floor away from doors and windows, and
- Rooms constructed with reinforced concrete, brick, or block with no windows.
- Stay away from outside walls and windows.
- Use arms to protect head and neck.
- Remain sheltered until the tornado threat is announced to be over.

Earthquake:

- Stay calm and await instructions from the Emergency Coordinator or the designated official.
- Keep away from overhead fixtures, windows, filing cabinets, and electrical power.
- Assist people with disabilities in finding a safe place.
- Evacuate as instructed by the Emergency Coordinator and/or the designated official.

Flood:

If indoors:

- Be ready to evacuate as directed by the Emergency Coordinator and/or the designated official.
- Follow the recommended primary or secondary evacuation routes.

If outdoors:

- Climb to high ground and stay there.

- Avoid walking or driving through flood water.
- If car stalls, abandon it immediately and climb to a higher ground.

Hurricane:

• The nature of a hurricane provides for more warning than other natural and weather disasters. A hurricane watch issued when a hurricane becomes a threat to a coastal area. A hurricane warning is issued when hurricane winds of 74 mph or higher, or a combination of dangerously high water and rough seas, are expected in the area within 24 hours.

Once a hurricane watch has been issued:

- Stay calm and await instructions from the Emergency Coordinator or the designated official.
- Moor any boats securely, or move to a safe place if time allows.
- Continue to monitor local TV and radio stations for instructions.
- Move early out of low-lying areas or from the coast, at the request of officials.
- If you are on high ground, away from the coast and plan to stay, secure the building, moving all loose items indoors and boarding up windows and openings.
- Collect drinking water in appropriate containers.

Once a hurricane warning has been issued:

- Be ready to evacuate as directed by the Emergency Coordinator and/or the designated official.
- Leave areas that might be affected by storm tide or stream flooding.

During a hurricane:

- Remain indoors and consider the following:
 - Small interior rooms on the lowest floor and without windows,
 - Hallways on the lowest floor away from doors and windows, and
 - Rooms constructed with reinforced concrete, brick, or block with no windows.

Blizzard:

If indoors:

- Stay calm and await instructions from the Emergency Coordinator or the designated official.
- Stay indoors!
- If there is no heat:
 - Close off unneeded rooms or areas.
 - Stuff towels or rags in cracks under doors.
 - Cover windows at night.
- Eat and drink. Food provides the body with energy and heat. Fluids prevent dehydration.
- Wear layers of loose-fitting, light-weight, warm clothing, if available.

If outdoors:

- Find a dry shelter. Cover all exposed parts of the body.
- If shelter is not available:
 - Prepare a lean-to, wind break, or snow cave for protection from the wind.
 - Build a fire for heat and to attract attention. Place rocks around the fire to absorb and reflect heat.
 - Do not eat snow. It will lower your body temperature. Melt it first.

If stranded in a car or truck:

- Stay in the vehicle!
- Run the motor about ten minutes each hour. Open the windows a little for fresh air to avoid carbon monoxide poisoning. Make sure the exhaust pipe is not blocked.
- Make yourself visible to rescuers.
 - Turn on the dome light at night when running the engine.

- Tie a colored cloth to your antenna or door.
- Raise the hood after the snow stops falling.
- Exercise to keep blood circulating and to keep warm.

CRITICAL OPERATIONS

During some emergency situations, it will be necessary for some specially assigned personnel to remain at the work areas to perform critical operations. Assignments:

Work Area Name	Job Title	Description of Assignment
		<ul style="list-style-type: none"> • Personnel involved in critical operations may remain on the site upon the permission of the site designated official or Emergency Coordinator. • In case emergency situation will not permit any of the personnel to remain at the facility, the designated official or other assigned personnel shall notify the appropriate _____ offices to initiate backups. This information can be obtained from the Emergency Evacuation Procedures included in the _____ Manual.

The following offices should be contacted:

Name/Location:	_____
Telephone Number:	_____
Name/Location:	_____
Telephone Number:	_____
Name/Location:	_____
Telephone Number:	_____