Power Service, Inc.
Industrial Tool & Repair, Inc.

Safety Manual

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Power Service, Inc. Safety Manual

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TO: All Employees

Subj: Safety And Health Program

Power Service, Inc. and Industrial Tool and Repair, Inc. are committed to providing a safe, accident-free and healthy work environment for everyone. A Safe and healthy work place is the result of diligent work and on-going attention to all company policies by everyone.

Cooperation on everyone's part is an essential element of a safe work place. Communication between management and employees should be kept open at all times. Workers who notice hazards or other safety issues, or who feel that they need additional training must notify their supervisor. Supervisors and management will address these concerns and take corrective action when warranted.

Everyone must be knowledgeable about the safe work practices applicable to their area or job and must abide by them. Supervisors will promote a positive attitude and safety awareness in their subordinates through personal example, personal contact, training and regularly scheduled safety meetings. All employees will perform their work with maximum regard for the safety of themselves and co-workers.

Past experience and current standards are essential components of our safety policies and are also an integral part of the company's personnel policies. Compliance with the policies is a condition of employment and must be take seriously. Failure to comply is sufficient grounds for disciplinary action including termination of employment.

Safety and health are a top priority at Power Service, Inc. and Industrial Tool and Repair, Inc. and go hand in hand with productivity and quality. By conscientiously following the safety policies you will stay safe, healthy and able to work, play and enjoy life to its fullest.

Power Service, Inc.
Industrial Tool and Repair, Inc.

Tony Cercy
President

POWER SERVICE, INC.
INDUSTRIAL TOOL & REPAIR, INC.

SAFETY AND HEALTH PROGRAM

Safety and Health Policy

It is the policy and top priority of Power Service, Inc. and Industrial Tool & Repair (PSI and ITR) to provide accident free and comfortable work environments by identifying all potential hazards in the work place. Hazards will be eliminated to the extent possible. When hazards cannot be eliminated, employees will be trained how to work around these hazards in a safe manner and will be instructed to use any equipment that would protect the employee. Our health and safety program and specific individual programs comply with federal, state and local regulations.

Health and safety are of vital interest to everyone in each company: each level of our organization is accountable for performing their work safely. Health and safety are functional responsibilities of each supervisor. Compliance with this program and safety and health rules is taken seriously. Failure to comply is sufficient grounds for disciplinary action including termination of employment. These policies are an integral part of the company's personnel policies.

OCCUPATIONAL HEALTH AND SAFETY ACT

State and federal Occupational Health and Safety Acts provide that every U.S. employer engaged in business shall:

a. Furnish to each employee a place of employment free from recognized hazards that are causing or likely to cause death or serious physical harm.

b. Comply with occupational health and safety standards and rules, regulations and orders pursuant to the Act that are applicable to company business and operations.

c. Comply with and require all employees to comply with occupational health and safety standards and regulations under the Act that are applicable to their actions and situations.

d. Encourage employees to contact their immediate superior for information that will help them understand their responsibilities under the law.

HEALTH AND SAFETY RESPONSIBILITIES

Our goal is to protect employees from injury while working for our companies. This will receive top priority from everyone.

Duties and responsibilities of all personnel under our Health and Safety Program are as follows:

GENERAL MANAGER:

a. Provide all levels of management the services and technical advice need for proper administration of the Health and Safety Program.

b. Develop programs and technical guidance to identify and remove physical, chemical and biological hazards from facilities, operations and sites.

c. Assist management and supervisors in the health and safety training of employees.

d. Conduct, or cause to be conducted, inspections to identify unhealthy or unsafe conditions or work practices. Prepare written reports of inspections.

e. Recommend programs and activities that will develop and maintain incentives for and motivation of employees in health and safety.

f. Recommend disciplinary action for repeat violators of health and safety rules.

g. Maintain the state health and safety poster, emergency telephone numbers, OSHA Form 300 and other notices required by applicable laws. Ensure that this information is posted in places where employees can see it at each Company location.

h. Develop and maintain accident investigation and reporting procedures and systems. Investigate all accidents and near misses and take action to eliminate their causes. Keep management informed of findings.

i. Report accidents that result in an occupational fatality or three or more hospitalized workers to Wyoming Workers Safety at 307-777-7786 within eight (8) hours of occurrence.

SAFETY COORDINATOR (General Manager if no one has been appointed)

a. Familiarize him/herself with health and safety regulations for the company.

b. Direct, implement and coordinate health and safety program elements and activities for the company.

c. Require all employees to use personal protective equipment and safety devices when required.

d. Ensure that safety equipment is available, maintained, used and stored correctly.

e. Ensure that all employees receive job safety and health training as required.

f. Conduct a monthly health and safety inspection of company facilities or delegate these inspections to others and ensure that they are done. Direct correction of unsafe conditions.

g. Conduct periodic safety briefings with all supervisors.

h. Ensure that supervisors are aware of and comply with requirements for safe practices.

i. Investigate all company accidents. Review all accidents/incidents with supervisors and workers involved. Ensure that accident reports and Worker's Compensation forms are completed and submitted as appropriate. Insure that corrective action is taken immediately to eliminate the cause of the accident.

j. Require all subcontractors and subcontractor personnel working within the company's facilities to comply with company regulations.

k. Maintain copies of applicable programs and applicable worker's safety forms in the work area, in accordance with company practice and policy.

SERVICE, PARTS, SALES & BRANCH MANAGERS

a. Be familiar with, explain and enforce health and safety regulations that apply to company operations within his/her area of responsibility.

b. Ensure that safety devices and proper personal protective equipment are used by persons under his/her supervision.

c. Instruct and train all persons within area of responsibility in job health and safety requirements.

d. Conduct frequent and regular safety and health inspections of his/her work areas and ensures that no unsafe conditions exist in area of responsibility.

e. Service Mangers must conduct weekly (or more often if needed) safety briefings with all workers under his/her supervision.

f. Ensure that injuries are treated promptly and reported properly.

g. Investigate all accidents/incidents, obtain all pertinent data, complete and submit the appropriate report(s) and initiate/take corrective action.

h. Act on reports of hazards or hazardous conditions reported to him/her by employees.

i. Maintain all training records for a minimum of three (3) years.

BOOKKEEPER

a. Maintains all records and reports of accidents that have taken place during company operations. These forms and reports may include the OSHA Form 300 Injury/Illness Log and the OSHA From 300A summary and the OSHA 301 Incident Report or the Company's own similar report.

b. Ensure that the employee's workers compensation form report is filed at the proper offices within allowed period of the company's notification of an occupational injury or disease.

c. Process all paperwork associated with accidents, on-site inspections and in-house audits. Maintain permanent record for company files.

d. Maintain all medical records, evaluations and exposure monitoring records for a period of 30 years and in accordance with privacy policies.

ALL EMPLOYEES

a. Be familiar with and comply with proper health and safety practices.

b. Use the required safety devices and proper personal protective safety equipment.

c. Notify supervisor immediately of unsafe conditions/acts, accidents and injuries.

WORKERS' COMPENSATION CLAIMS MANAGEMENT

The following actions will be taken/followed on all accidents/injuries being submitted as a Workers' Compensation claim.

a. Injured employees must report all accidents/injuries to their supervisor immediately (within legal time limit in their state), who in turn will notify other appropriate company officials, such as the safety manager or claims manager. All accidents/incidents will be investigated by the General Manager or supervisor to determine the facts and take corrective action to prevent reoccurrence.

b. Employees, within ten (10) days after notification to the employer, must complete the Worker Information section only of the Worker's Safety and Compensation Report of Occupational Injury or Disease forms package.

c. The supervisor or bookkeeper will complete the Employer's Information section of the same report within ten days of the notification.

d. The bookkeeper will ensure that worker's compensation insurers and state offices are notified as appropriate by filing of reports within ten (10) days of the notification.

e. The accident investigation must confirm that the injury was job related for the resultant claim to be valid.

f. Injured employees will be entered into a modified job program, i.e., light duty, restricted duty, part time duty, when such is recommendation by the attending physician.

OSHA FORM 300 INJURY/ILLNESS LOG

The OSHA Form 300 log of all recordable occupational injuries and illnesses is maintained for and/or at each work facility. In some cases, the log may be kept at the main office (This involves ensuring the information from the initial accident is posted onto the master form in the main office within seven (7) days after the incident has occurred). The OSHA Form 300A summary must be posted at each work facility/site by February 1st of the following year and remain in place until April 30.

TRAINING

Training and education cannot be over-emphasized as a means of encouraging a healthful and safe approach to employee work. Knowledge of the safety rules and how and when to function under the rules, supplemented by compliance, is essential to safety.

a. Employees scheduled for any safety and health training will attend such training.

b. New employees will be provided orientation training and will be furnished information and literature covering the company heath and safety policies, rules and procedures. This orientation training must be provided prior to the employee's exposure to the work environment.

c. Individual job/task training, to include the applicable regulations/standards for their job, will be provided to all employees. Included in the training is: the recognition, avoidance and prevention of unsafe conditions, areas and activities that require personal protection equipment, and how to use protective equipment (such as respirators, etc.).

d. Occasional on-going safety training sessions will be conducted to provide information and training on new equipment, new procedures, new chemicals,

refresher/remedial training in specific areas, or meet annual requirements. Such training may be held in conjunction with the safety briefings/meetings addressed elsewhere in the program.

e. Various individual OSHA programs specify that training be provided to employees. Supervisors will ensure their employees are scheduled and provided with training as required, which may include:

Hazard Communication
Respirator Care and Use
Lockout/Tagout Procedures
Forklift Operation
Proper Lifting
Ergonomics
Defensive Driving
Fire Extinguisher Safety/Use

f. Training addressed above will be documented in the employees' personnel records and/or in training records.

HAZARD IDENTIFICATION, ASSESSMENT AND CONTROL

Hazard identification and elimination is not only an inherent responsibility of supervision in providing a safe work place for employees, but also requires employee involvement. As such, hazard evaluation and control shall be an on-going concern for all. It is the responsibility of everyone (management, supervisors and all employees) to identify, report and correct all possible hazards in the work place and day-to-day operations. **Reporting hazards is a protected activity and no action will be taken against anyone for identifying unsafe conditions.** Reports should be made to the General Manager or Supervisor for appropriate action.

WORK PLACE SAFETY INSPECTIONS

This company has a procedure for conducting inspection of work places/jobsites for compliance with health and safety rules. The purpose of the in-house inspection is to identify hazards and unsafe practices before they cause an injury or accident. Formal safety and health inspections will be conducted under the following minimum time lines:

a. General Manager (Safety Manager if appointed) and Branch Managers: Monthly of all fixed facilities and shops.

b. Service, Parts, Sales and Branch Managers: Daily of area of responsibility, not in conjunction with the above inspections.

c. The company's Health and Safety Program will be reviewed at least annually.

d. State Worker's Safety - Technical Assistance, private consultation services and insurance company representatives may conduct on-site consultation services and inspections if desired and requested.

After completing jobsite or facility inspections, the person making the inspection will:

a. Discuss findings with employees/ persons responsible for creating the condition. Invite their comments, suggestions and aid.

b. Ensure recommended corrections/changes are transmitted or discussed with the proper supervisor /person for correction.

c. Follow up on changes, corrections and other actions necessary.

d. Provide copy of checklist to company health and safety person.

INSPECTION CHECKLIST GUIDELINE

This listing includes items, areas and categories that may be looked at during health and safety inspections of the work place and in the shop. It is generic and not all-inclusive but provides a guideline to be developed into a checklist for use during the inspection.

a. First aid safety and health equipment.

b. Posters and signs required by Wyoming Worker's Safety and health and safety practices.

c. Accident reporting records.

d. Employee training provided, such as health and safety talks and worker orientation. Records maintained.

e. Equipment and tools - their condition and use.

f. Protective guards and devices - their availability, use, proper maintenance and operation condition.

g. Housekeeping, maintenance clean work areas free of trash and debris accumulation, tripping and slipping hazards.

h. Lighting for adequacy and safety.

i. Sanitation - water and toilets for cleanliness and proper operation.

j. Noise hazards and hearing protection.

k. Ventilation for gases, vapors, fumes and dusts.

l. Availability of personal protective equipment, such as hard hats/head protection, respirators, safety belts, lifelines, safety shoes, eye protection and gloves.

m. Fire protection, prevention and control, and use of fire protection equipment.

n. Temporary buildings, trailers and sheds.

o. Open yard storage.

p. Storage of flammable and combustible liquids including service and refueling areas for vehicles.

q. Temporary heating devices.

r. Tools (hand, power and welding) - condition and use.

s. Electrical system and devices; condition and use of cords; ground fault protection or assured grounding conductor protection.

t. Openings in floors, walls and railings.

u. Materials handling equipment and elevators.

v. Ladders - condition and use.

w. Hazard communication program and material safety data sheets (MSDS).

x. Overhead cranes and hoists.

y. Scaffolds - safety railings secured.

z. Lockout/Tagout procedures.

aa. Other items as appropriate.

Management Policy

The management of Power Service, Inc. is dedicated to providing active support to ensure a safe working environment for all employees and for the contracting employers. However, the support of each employee is also vital towards the goal of preventing all safety incidents. Power Service, Inc. employees must respect the confidentiality of trade

secret information when the process safety information is released to them. There are three basic guidelines for our safety policy:

1. There are no jobs so important that we cannot take the necessary steps and time to perform in a safe manner.
2. The first priority is the safety of people, not property.
3. Each employee is instructed to prevent or minimize consequences of catastrophic releases of toxic, reactive, flammable or explosive chemicals related to his/her job, refineries, and the process and the applicable provisions of the emergency action plan.

General Policies

1 Power Service, Inc. does not allow alcohol, drugs or firearms of any type on the property of the company or the property of any contracting employer. Any employee caught with these substances on company property or contracting employer property shall be subject to immediate termination.

2 Any safety issues that come up during the normal course of work should be immediately brought to the attention of the local supervisor.

3 The policies of the contracting employer shall always be followed. The steps taken to follow all safety policies are an integral part of doing business. Coordination and cooperation with the contracting employer during safety meetings and safety training is highly encouraged and is part of the teamwork that minimizes safety incidents.

4 Power Service, Inc. shall maintain good housekeeping at all times.

5 In case of emergency, the proper response is to leave the facility and go to the predetermined meeting location, contact the contracting employer immediately, ensure that all contract personnel are accounted for, and call for medical help if needed. As stated above – Protect People First.

6 PSM – Power Service, Inc. will comply with all requirements of OSHA PSM regulations. Specifically, Power Service, Inc. shall

   a) Assure that each contract employee is trained in the work practices necessary to perform his/her job.
   b) Assure that each contract employee is aware of the process hazards related to their job
   c) Assure that each contract employee knows how to respond in case of emergency (see #5 above)
   d) Assure that each contract employee is properly trained, with adequate documentation
   e) Assure that each contract employee understands the safety rules of the contracting employer and the safety rules of the specific facility in which they are working
   f) Advise the contracting employer of any unique hazards presented by the contractor's work.
   g) Advise the contracting employer if sub-contractors are being used and ensure they are properly trained to perform their tasks.

Disciplinary Policies

1. The company positions responsible for enforcing the disciplinary policies are all managers, supervisors, and lead project managers.

2. Examples of safety violations are, not following verbal procedures or the written safety procedures that are outlined in our Safety Manual.
    * Physical inspections by company officials showing lack of commitment to company safety procedures will be subject to disciplinary actions.
3. Corrective action that is taken when a safety violation has occurred is:
    * Meet with employee to discuss the infraction.
    * Inform individual(s) of the rule or procedure that was violated.
    * Discuss corrective action to be taken.

FALL PROTECTION & LADDERS/SCAFFOLDING

Purpose

To provide guidelines for workers who have to work at least 6 feet above ground level, as well as safety requirements for the use of ladders and scaffolding.
Controlled access zones are not utilized by our employees.

Training

The Qualified Trainer should cover the following items:

- Fall protection principles (ANSI, ASTM or OSHA)
- Ladder and scaffolding safety
- Stairs and handrail requirements
- Fall protection hazard assessment
- Fall protection using body harnesses
- Prompt rescue of employees/self safety training.
- Incident/accident reporting will be used when applicable.
- All accidents and serious incidents will be investigated.
- All equipment will meet ANSI, ASTM, or OSHA requirements.

Retraining Situations:

- When deficiencies are recognized in training.
- Any work place changes. (Fall, Electrical, and Falling Objects)
- Fall protection systems or equipment changes that render previous training obsolete, and the training is documented.

FALL PROTECTION & LADDERS/SCAFFOLDING

Portable Ladder Safety

All portable ladders shall meet the following requirements:

- All ladders should be Type 1 - Industrial. Ladders should have a working rate of 275 pounds.
- Stepladders should not exceed 20 feet in length
- Extension ladders should not exceed 40 feet in length
- The base of the ladder must have secure footing, such as skid resistant feet.
- The care and maintenance of portable ladders shall include:
  - Periodically check all hardware, ropes, movable parts, skid resistant feet and rungs for damage or excessive wear. Repair or replace prior to usage.
  - Rungs should be kept free from accumulations of dust, paint, oil grease and ice.
  - Visible inspection of ladder prior to each use
  - Ensure that no alterations or modifications have been made to the ladder
  - Ensure ladder has not been painted as this may hide defects.

Use of Portable Ladders

- Always face the ladder when climbing or descending.
- Ladders shall be used only for the purpose for which they were designed.
- The angle of the ladder should be 1 foot horizontal for each 4 feet vertical whenever possible.
- The ladder should be tied off at the top for security or held in place by another employee.
- The ladder should extend 3 feet above the top surface
- Ladders shall not be placed in front of doors unless the door is blocked or guarded.
- Ladders shall not be placed on boxes, drums or other unstable items to gain additional height.
- Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced, when the ladder is in position for use.
- Ladders with missing or broken rungs, steps or other faulty conditions shall not be used until repaired or replaced.

FALL PROTECTION & LADDERS/SCAFFOLDING

Scaffolding

There are specific OSHA regulations in 1910.28, but some general scaffolding requirements are shown below:

- Toe boards and hand railings are required on all scaffolding more than 10 feet in height.
- Scaffolds and their components shall be capable of supporting without failure at least four times the maximum intended load.
- Tools, materials and debris shall not be allowed to accumulate in quantities to cause a hazard.
- The footing for scaffolding shall be sound, rigid and capable of carrying the maximum intended load without settling.
- Scaffolding shall never be moved while personnel are on them.
- Competent person must ensure scaffolds are safe prior to and during use.
- Unsafe equipment or conditions must be tagged out by competent person and must be complied with.

Personal Fall Protection Equipment

When engineering efforts are not attainable, fall protection can be set up in a three component system.

1. Body Harness - designed to distribute the forces throughout the body to prevent further injuries should a fall occur. Note that safety belts are no longer acceptable.
2. Connecting device - normally a rope or webbing lanyard.
3. Tie-off point - the anchor point that will support the employee in case of a fall. This point must be capable of supporting 5,000 pounds per worker and could be part of existing equipment already on the location. This tie-off point must be high enough so that no lower level equipment is struck in case of a fall. Also, the tie-off point must be such that no rough or jagged edges could damage the connecting device.

FIRE PROTECTION

Purpose

To provide adequate fire protection equipment and training to allow employees to protect themselves and, in some cases, the equipment in the event of a fire. Human safety is more important than equipment. Fight a fire only if in your judgment, you can do so without unnecessary risk.

This procedure establishes safety practices for the prevention and minimization of fires due to accidental ignition of combustible gases, liquids, chemicals, and other materials.

Responsibility

Power Service, Inc. shall be responsible for:

- Ensuring that each employee is trained at initial assignment and annually from then on.
- Ensuring that all necessary equipment is at the location
- Providing fire protection as needed for specific work

Definitions

Combustible Liquid - any liquid having a flash point at or above 100 degrees

Flammable Liquid - any liquid having a flash point below 100 degrees.

Flash Point - the minimum temperature at which a liquid gives off ignitable vapors near the surface of a liquid.

Incipient Stage Fire - a fire which can be controlled or extinguished by portable fire extinguishers or small hose systems without the need for protective clothing or breathing apparatus

Smoking Policy

Power Service, Inc. shall refrain from smoking in and around company facilities, except in designated smoking areas.

FIRE PROTECTION

Storage of Flammable Material

Install NO SMOKING or NO UNAUTHORIZED IGNITION SOURCES signs at all enclosures and areas where the possible leakage or presence of gas, flammable and/or combustible materials could constitute a fire or explosion hazard.

Flammable material shall be stored as follows:

- All oily rags and oil/paint soaked material should be stored in metal cans with airtight closures.
- Only NFPA approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids. These cans shall be maintained with flame arrestors intact and proper hose connections. Safety cans shall be used to handle flammable liquids, such as methanol and gasoline and shall be labeled accordingly. Safety cans shall mean an approved container of not more than 5 gallons capacity, having a spring-close lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure.
- Quantities of flammable or combustible liquids in excess of 25 gallons shall be stored outdoors or in approved flammable storage cabinets. Standards for the cabinets are found in OSHA CFR 1926.152. The maximum allowable storage of liquids stored in such a cabinet is 60 gallons for flammable liquids and 120 gallons for combustible liquids. Whenever possible, large quantities of flammables should be stored out of doors, in a safe designated area.
- Flammable and combustible liquids shall not be stored in areas normally used as exits.

FIRE PROTECTION

Fire Extinguisher Mounting

When mounting fire extinguishers, the standard practice will be as follows:

- All mounted extinguishers shall be installed between 3 and 5 feet above the floor. Extinguishers having a gross weight more than 40 pounds shall be mounted no more than 3 1/2 feet above the floor.
- Fire extinguisher mounts must be secure and not subject to vibration.
- Fire extinguishers must be covered for protection, if located outside.
- All fire extinguishers must be labeled with a readily visible sign above the mounted fire extinguisher
- Access to fire extinguishers shall not be blocked by equipment, stored materials or machinery.

Fire Extinguisher Inspections

The standard practice for fire extinguisher inspections shall be as follows

Fire extinguishers should be inspected continuously for any sign of damage. However, each fire extinguisher should be inspected monthly to ensure that the extinguisher has not been used, is capable of being used and all equipment is in good condition. Records of these inspections should be maintained.

Annually, the fire extinguishers should be given a more thorough inspection, including weighing the extinguisher to ensure that it is full and ready to use.

Check to ensure that the extinguisher is up-to-date on the required hydrostatic test. Most extinguishers have to be hydrostatically tested every twelve years.

Training

Fire prevention and fire extinguisher training shall be conducted annually for all employees required to work with or around flammable or combustible materials.

HAZARD COMMUNICATION

Purpose

To comply with the criteria specified in the OSHA regulations. This standard is to help employees work safely with the hazardous chemicals in the workplace.

This information will be provided through the following elements:

- Chemical listing (product names must be consistent on MSDSs and container labels)
- Material Safety Data Sheet (MSDS)
- Container labeling
- Employee training
- Exchanging information with outside contractors
-

Definitions

Container - Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical.

Hazardous Chemical - Any chemical which is a health or physical hazard.

Material Safety Data Sheets - Prepared by manufacturers, the MSDS contains information on proper chemical handling and storage, as well as identifying the precautions and protective equipment required for employee safety.

Material Safety Data Sheets

A complete set of MSDSs for each product being used or produced should be available at the facility. A complete list of MSDSs shall be maintained in the MSDS book for easy reference.

MSDSs are not required for consumer products available to be used in the same manner and quantity as the general public, but these consumer products must have the required warnings on the label. For example, a 1 gallon can of paint does not require an MSDS, but a 55 gallon drum of the same paint does require an MSDS.

When use of a chemical is permanently discontinued, place the MSDS into an archive file. This file will be retained for at least 30 years after discontinuing chemical use.

Labeling and Other Forms of Warning

General labeling requirements are as follows:

- Cans, drums and all other portable containers shall have labels, tags or stenciled markings. Labels or markings are not to be removed. If they become unreadable, they must be replaced. If a shipment of a product arrives onsite without proper labels, the shipment must be properly labeled or refused prior to acceptance of the order.
- Hazardous chemicals stored in bulk or contained in process streams may be indicated on the vessels or piping, on process flow sheets or on plat diagrams located at the facility.
- Any container of Hazardous Material leaving a facility shall be marked or labeled in accordance with DOT HM 181.
- Labels shall include the following:
  - Chemical name of the substance
  - Manufacturer's name and address
  - 24 hour emergency number
  - Any physical or health hazards
  - Any protective equipment or precautions necessary to work with the chemical.
- All employees required to speak and understand English. Labels must legible and in English.

For specific labeling requirements, see section on "Labels for Drums and Containers" later in this section.

Compressed Gas Cylinders

When compressed gas cylinders are in use or brought onto a facility, the following rules apply:

- All cylinders are secured in a suitable cart or are chained to a support in an upright position
- All cylinders have valve caps in place when not in use
- All compressed gas cylinders shall be properly labeled
- Clearly mark empty cylinders and store separately from full cylinders
- Incompatible gases should be stored at least 20’ apart or with an appropriate fire wall between them. Examples of incompatible gases include
  - oxygen and acetylene
  - oxygen and natural gas
  - chlorine and any other cylinder

HAZARD COMMUNICATION

Employee Information and Training

Employees shall be provided information and training on hazardous chemicals used in their work area:

- At the time of their initial assignment
- Whenever a new hazard is introduced in their work area
- Annually

Employees shall be advised and informed of the Hazard Communication Program and its requirements with any applicable method (such as video tapes, handouts at training sessions, safety meetings or bulletins on Employee Notice Boards).

The content of the training shall include the following:

- The location and hazards of any chemicals stored or used in local operations.
- The location and availability of this written program, the list of hazardous chemicals and all MSDSs used at the work area.
- Details of the Hazard Communications Program, including how to read and interpret MSDSs and labels.
- How to detect the presence or release of the hazardous chemicals.
- The physical and health hazards of the chemicals in the work area and how the employees can protect themselves from these hazards.
- Appropriate emergency procedures including first aid and spill/leak procedures.

Methods of Informing Employees of Hazards Involved with Non-Routine Tasks

A non-routine task is defined as one which is performed less frequently than twice per year or one involving cleaning of or entry into vessels (see section on Confined Space Entry)

All training must be documented on the appropriate form. The training shall consist of a review of all MSDSs and specific information on the physical and health hazards involved with the task. Employees shall be informed of the hazards dealing with the non-routine task in any of the following methods

- Supervisor/work crew orientation sessions
- Tailgate meetings with contractors, employees and supervisors
- One on one supervisor/employee training sessions
- Safe Work Permit

HAZARD COMMUNICATION

Contractor Hazards

All contractors with employees performing tasks shall receive information as to the hazardous chemicals which their employees may be exposed to during the performance of their duties. This information shall be made available to the contractor during the orientation session required for each contractor, visitor and other outside personnel.

It is the responsibility of any contractor performing work to provide for the safety of their own employees and the safety of any contracting company employees that may be affected by the work being performed. This includes providing information (MSDS) concerning any hazardous chemicals the contractor may bring with them on-site, proper identification and labeling of all hazardous chemicals and proper use and disposal of all hazardous chemicals.

Labels for Drums and Containers

Original manufacturer containers are labeled indicating contents and applicable hazards. If the original label is destroyed or no longer legible, or when a container is used for storage of a substance different than the original content, it must be relabeled.

Individual containers do not require labeling when the containers are for immediate use. "Immediate use" means a chemical under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it was transferred.

Storage tanks shall be labeled with at least the following:

- The name of the contents
- A NFPA square-on-point which identifies in a color and numerical grading system. The color grading system is as follows

Color	Hazard		Number	Key Word
Blue	Health		4	Extreme Health Hazard
Red	Flammability		3	High Health Hazard
Yellow	Reactivity		2	Moderate Health Hazard
White	Special		1	Slight Health Hazard
			0	No Significant Health Hazard

HAZARD COMMUNICATION

ATTACH MATERIAL SAFETY DATA SHEETS (MSDSs)

HOT WORK PERMITS

Purpose

To establish control over work that requires the use of open flame, is spark producing (burning, welding, grinding, etc.) or may provide an ignition source. This standard is to ensure that flammable or combustible materials are absent, isolated, protected or removed from work sites requiring the use of tools or equipment that may provide an ignition source.

Definitions

Hot Work - The use of any equipment that produces a flame, spark or heat which may be an ignition source. In addition to typical tasks such as welding, grinding or burning, the use of any equipment that is not intrinsically safe or explosion proof shall be considered hot work and require a hot work permit. Examples of non-intrinsically safe equipment are flash cameras, electric drills, gasoline-powered tools, energized electrical equipment and shop-type trouble lights.

Designated Area - Areas that may have a hazardous atmosphere. Certain areas, such as shops, areas around new construction or authorized fabrication areas (at least 150 feet from where flammable gases are likely to occur), may not be designated areas, depending on site conditions.

Person-in-Charge - The facility manager or other employee designated by the facility manager to verify permit conditions and issue the hot work permit.

Training

The following items will be covered during training:

- Hot work permit
- Definition of hot work
- Procedures to obtain hot work permit
- Type of atmospheric monitoring required

HOT WORK PERMITS

Issuing a Hot Work Permit

The procedures listed below shall be followed when issuing a hot work permit. Note that as a contractor, the contracting employer should provide the hot work permit. However, if the contracting employer does not have a person in charge or wants the contractor to use their own how work permit, a Safe Work permit is provided at the end of this manual.

1. Only persons-in-charge may issue a hot work permit. Persons-in-charge shall be trained in gas detection, the provisions of this section and how to properly fill out a hot work permit.
2. Thoroughly clean, isolate, protect or remove all combustible and flammable materials from the area. This includes weeds, grass, paper, rags and similar material that may allow a fire to spread to other areas.
3. Cover adjacent open equipment containing flammables and confine sparks with flame-retardant materials or metal shields.
4. Ensure sparks and molten slugs of metal from welding and grinding are confined to the work area and prevented from entering other areas. Special considerations shall be given to these ignition sources in storage areas where combustible materials are present.
5. The work area is to be isolated from vehicular and pedestrian traffic as necessary through the use of barricades or signs.
6. Ensure that the presence of hydrocarbon gases is at or below five percent (5%) of the Lower Explosive Level (LEL). This test shall be conducted in the presence of the work crew leader and the results recorded on the Hot Work Permit. All atmospheric tests shall be conducted prior to work starting and before restarting following work breaks. In each case, the person-in-charge shall determine whether continuous monitoring is necessary.
7. The atmospheric tests for hydrocarbons shall be conducted in the entire area affected by the potential ignition source. For welding or torch cutting, this shall be an area extending 35 feet in all directions from the work area.
8. The hot work permit shall be filled out completely, with no sections left unanswered.

HOT WORK PERMITS

Person-in Charge Responsibility

It shall be the responsibility of the person-in-charge to:

1. Document any special precautions and fire equipment requirements for the specific hot work task. When welding or torch cutting is being performed, a crew member shall be designated as fire watch on the hot work permit. When the hot work permit is being issued due to the use of non-intrinsically safe tools, lighting, electric drills, open electrical panels, etc., it may not be necessary to have a fire watch.
2. Determine the need for fire blankets and spark/heat containment as noted in the previous section and to note these requirements on the hot work permit.
3. Ensure that any equipment that contains or has contained flammable or toxic materials is steamed and/or purged out prior to any hot work. Even if this equipment is moved to a non-designated area, a hot work permit and all necessary testing is required prior to work on that equipment.
4. The hot work permit may be issued when all provisions of the permit have been met and the form is filled out in its entirety.
5. Notify the operations group that work is about to begin and that the work area is restricted.
6. The person-in-charge shall remain at the work site until the first arc, spark or ignition source is created.

Other Considerations

- Ensure emergency fire extinguishers are not used as fire guard equipment. Additional fire equipment should always be used, and all fire equipment shall be recharged after the job is complete.
- Document all periodic checks for flammable vapors on the hot work permit form.
- The safety requirements on the hot work permit form may always be exceeded at the discretion of the work crew.
- Ensure test equipment is properly calibrated prior to taking readings.

INCIDENT REPORTING AND INVESTIGATION

Purpose

To establish standards for reporting and investigating incidents at facilities that Power Service, Inc. may perform work, when these incidents result in personal injuries, property damage, or release of hazardous materials or when these incidents involve unsafe acts or near incidents.

Responsibility

Power Service, Inc. is responsible for:

- Filling out incident report forms if Power Service, Inc. is involved with the incident
- Ensuring that employees follow these procedures after an incident
- Implementing all actions identified by an incident investigation
- Seeing that all injuries receive proper treatment, with examination by a physician if there is any question as to the seriousness of the injury
- Maintaining a working injury/illness log
- Notifying the supervisor of the contracting employer whenever an incident or near-miss occurs

All employees are responsible for:

- Notifying their supervisor immediately following an incident
- Notifying their supervisor of all safety hazards so that corrective action can be taken before an incident occurs
- Assisting with incident investigations when requested by their supervisor

General

In the event of an incident, appropriate action shall be taken to protect people first and then property.

INCIDENT REPORTING AND INVESTIGATION

OSHA 300 Logs

The Occupational Safety and Health Administration requires that all companies maintain a Bureau of Labor Statistics Log and Summary of Occupational Injuries and Illnesses (OSHA 300). **There is an exemption from maintaining the OSHA 300 log if the company has less than 10 employees.** This form is to be maintained as a permanent record for Power Service, Inc..

- Since the OSHA 300 form is a legal record of recordable injuries at a site, care must be taken to comply with the requirements which are shown in the attached information from OSHA.

INCIDENT REPORTING AND INVESTIGATION

Definitions

Accident - an incident which results in personal injury, illness or death.
Catastrophic Release - a major uncontrolled emission, fire or explosion, involving one or more highly hazardous chemicals, that presents serious danger to employees in the workplace.
Illness - occupational induced acute or chronic diseases that may be caused by inhalation, absorption, ingestion or direct contact.
Incident - An unplanned event that interrupts the completion of a planned activity and may include injury and/or property damage.
Injury - any occupational injury such as a burn, cut, fracture, sprain, amputation, animal bite, or one time exposures to chemicals.
Loss - a disruption of normal efficiency, loss of production or physical damage to property.
Lost Workdays - either Days Away from Work or Days of Restricted Work Activity

- Days Away from Work is any time an individual is unable to report to work on a given day due to an occupational accident or illness.
- Days of Restricted Work is any time an individual is unable to perform all duties which are normally assigned due to an occupational injury or illness and is then assigned to temporary duty or part time duty at his regular job.

Medical Treatment - includes treatment (other than First Aid) administered by a physician or registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid (one time treatment and subsequent observation of minor scratches, cuts, burns, splinters and so forth which do not ordinarily require medical care) even if the treatment was provided by a physician or registered professional.
Near Incident - an event where no damage or injury occurred, but there was a high probability for severe injury or damage.
OSHA 300 Log (Working Log) - the log kept at each manned facility where all recordable and potentially recordable incidents are recorded.
OSHA 300 Log (Summary) - the log generated by safety that shall be posted at each manned facility no later than February 1 and kept posted until April 30 of each year.
OSHA Reportable - any occupational accident or illness which requires medical treatment. First Aid cases are not OSHA recordable.

INCIDENT REPORTING AND INVESTIGATION

INCIDENT INVESTIGATION

Introduction

In order to learn from past incidents and prevent future incidents, all incidents will be investigated. All incidents should be investigated by the personnel at the location where the incident occurred. If COMPANY had any involvement in the incident, Power Service, Inc. employee(s) should assist with the investigation.

Incident Investigation Steps

Each of the items required to be covered is listed below:

INITIAL RESPONSE – Employees must immediately report accidents, injuries and near misses. An incident investigation must be initiated within 48 hours. After notice has been received about an incident, confirm whether a formal investigation is necessary. If a formal investigation is necessary, ***the timing will be an immediate response for a fatality or incident where 3 or more employees are hospitalized***.

DETERMINING THE FACTS - Using standard investigation techniques (such as interviews, review of site, review of operating logs, past incident review, etc.), a full investigation into the facts surrounding the incident will be performed.

DETERMINING THE CAUSE - Based on the facts discovered, the root cause(s) of the incident will be determined.

WRITTEN REPORT - The written report will be issued as soon as possible.

RECOMMENDATIONS AND FOLLOW-UP - After everything is complete, a final report shall be written. Documentation will be maintained for 5 years.

LOCKOUT/TAGOUT

Purpose

To prevent accidental injuries due to an uncontrolled release of hazardous energy or materials by establishing minimum requirements for the lockout or tagout of equipment.

Responsibility

Power Service, Inc. is responsible for ensuring that:

- An effective lockout/tagout procedure is implemented
- Employees are provided with the necessary materials and training to comply with the requirements
- All new, repaired or modified equipment shall be designed to accept a lockout device.
- Power Service, Inc. employees work with the contracting employer to ensure that lockout/tagout is effective.
- Retraining will be done upon any changes with job assignments, machines, energy control procedures or any new hazards.
- All training and retraining will be documented, signed and certified.
- The Service Manager will perform an annual inspection that is documented of the lockout/tagout procedure.
- Multiple groups of workers will be subject to the same lockout/tagout procedures as an individual worker.
- Program must address shift changes and proper documentation for smooth continuity.
- An authorized employee/supervisor has the primary responsibility for a set number of employees working under the protection of a group lockout/tagout device.

Each employee is responsible for:

- Understanding and applying lockout/tagout procedures in order to protect themselves and other employees.
- Using their own lock and tag with their name.

LOCKOUT/TAGOUT

Definitions

Affected Employee - An employee or contractor that works in the area or on the equipment being locked or tagged out. Training involves why lockout/tagout is important and why they must not remove tags.

Authorized Employee - An employee trained in the recognition of energy sources and the proper methods of isolation, control and release of the energy and is therefore authorized to place a lockout or tagout device on equipment with the employee's proper identification on the tag.

Energy Isolating Device - A mechanical device that physically prevents the transmission or release of energy. Examples include:

- Manually operated electrical circuit breaker
- Disconnect switch
- Line valve
- Blind

Individual Lock - A lock issued to an individual. These locks are to be used only for lockout purposes. If a key is lost, replace the lock, not the key.

LOCKOUT/TAGOUT

Definitions (cont.)

Lockout - locking or blinding and tagging equipment in such a way that it cannot be energized without the lock being removed

Lockout Device - a device that uses a positive means (such as a lock) to hold an energy isolating device (such as a valve or switch) in the safe position and prevent the energizing of the equipment.

Tagout - the placement of a tagout device on an energy isolating device to indicate that the energy isolating device and the equipment being controlled may not be operated until the tag is removed.

Tagout Device - a unique and standardized warning device capable of being attached to energizing points on equipment. The tags must be durable, standardized, easily identifiable and attached to the equipment with non-reusable devices. Tags must contain who placed the lock/tag, when the lock/tag was put on and what system the lock/tag is protecting.

Zero Energy State - a state in which a logged and tagged machine or piece of equipment possesses no unrestrained stored energy of any type. Items such as capacitors and springs can retain energy even with no outside power sources.

Lockout Examples

There are many different types of energy covered under this standard, including hydraulic, electrical, mechanical, pneumatic, gravity, chemical or thermal. Examples of lockout methods are shown below:

- Electrical and electromagnetic lockout - Disconnect the conductors of a circuit from the source of electrical current by:
  - Opening a disconnect switch, removing a fuse and/or effectively parting terminals and then attaching lock and tag.
  - Bleeding off all residual electrical and electromagnetic charges.
- Hydraulics, air, gas or steam lockout -
  - Close supply valve and blind the supply line when possible
  - Lock the valve closed and tag the valve
  - Bleed the line or lines and disconnect
- Mechanical energy - block or chain any objects that can be affected by the source of gravity or another source of mechanical energy
- Stored energy - relieve or restrain energy stored in spring, then lock and tag as appropriate
- Thermal, chemical, other - Always isolate, lock and tag, dissipate and restrain as appropriate.

LOCKOUT/TAGOUT

Lockout/Tagout Sequence

Lockout/tagout procedures must be followed during the repair or servicing of equipment that may be energized. In general, lockout/tagout procedures include:

- Isolating and/or disconnecting energy sources with lockout/tagout devices
- Verifying isolation
- Repairing/servicing isolated equipment
- Removing locks and tags
- Returning to normal service

Step	This table describes the lockout/tagout sequence
1	Locate and identify all switches, valves or other energy isolating devices that apply to the equipment to be locked and tagged out. More than one energy source may be involved. This identification should be done as part of the work order system.
2	Notify all affected employees (at least verbally) that a lockout/tagout system is going to be used. Explain the circumstances.
3	If the equipment is operating, shut it down with normal stopping procedures (i.e., press stop button, close valve, etc.)
4	If applicable, open the electrical disconnect switch(es), etc. so that all electrical energy sources are disconnected /isolated from equipment.
5	Blind valves or other isolating devices so energy sources (mechanical, hydraulic, etc.) are disconnected or isolated from equipment. Note - double block and bleed valves are suitable in place of blinds.
6	Each individual involved in the repair or maintenance operation must place a lock and tag on each energy isolating device.
7	Dissipate or restrain stored energy, such as in capacitors, flywheels, springs, hydraulics, air, gas, steam, water, gravity, etc.

Verification of Isolation

To ensure that equipment will not operate and to verify that energy sources are disconnected, operate the push button or other normal operating controls. Note: always return the operating controls to a "neutral" or "off" position after performing this test. Never leave a "command" which will lead to an unexpected or undesired operation of the equipment as soon as power is restored.

LOCKOUT/TAGOUT

Removing Locks and Tags

The following table describes the procedures for removing locks/tags:

Step	Action
1	After servicing and/or maintenance is complete and the equipment is ready for normal operations, check area around equipment to ensure that no one is exposed.
2	Notify all affected employees of the intent to remove locks/tags.
3	After all tools have been removed from the equipment, guards have been reinstalled, employees are clear, and the controls are in neutral, each person removes their lock and tag. It is a serious violation of safety for any person to remove another person's lock and/or tag.

Equipment That Cannot be "Physically" Locked Out

Due to age and/or design, it is not possible to "physically" lock out some equipment. However, make every effort to secure a device to the system, machine or equipment so it can be physically locked out.

If it is not possible to physically lock out equipment:

- Perform alternate means, such as physically disconnecting and tagging drive chains, shafts, motors, electrical leads or switches, piping, etc.
- Clearly tag each piece of equipment to confirm that it has been disassembled to isolate the energy source.
- Conductors and parts of electrical equipment that have been deenergized, but have not been Locked or Tagged shall be treated as live parts.

Ensure that all repaired, modified or replaced pieces of equipment or machines are designed to accept a lock.

Lockouts must be used wherever possible, since tags do not provide the security of a lock. Tags alone are acceptable only if there is no way to lock out the equipment

PERSONAL PROTECTIVE EQUIPMENT AND HAZARD ASSESSMENT

Purpose

This standard is designed to protect employees by reducing the probability of injuries from hazards that may exist due to normal operations or emergencies. Personal Protective Equipment (PPE) establishes a barrier between the worker and the hazard, but it does not eliminate the hazard. Thus, PPE should be used in conjunction with hazard assessments, engineering controls, training and safe practices to enhance safety in the workplace.

Responsibility

Power Service, Inc. is responsible for:

- Ensuring that each employee has the necessary training.
- Documenting all training.
- Ensuring that all PPE is provided and used properly.
- Assigning duties only to properly trained employees.
- Ensuring that Power Service, Inc. employees meet the PPE requirements of the contracting employer
- Retraining when workplace changes, type of PPE changes, or when the employee demonstrates lack/improper use of PPE.

Each employee is responsible for using and maintaining PPE in reliable condition. Storing of PPE needs to be in a sanitary and clean area.

Definitions

Hazard Assessment – A review of the workplace to determine if hazards are present, or are likely to be present, which necessitates the use of PPE.

General PPE Requirements

PPE shall include, but is not limited to, protection for hearing, eyes, face, head, skin, extremities, respiratory devices, clothing, and toxic gas/combustible gas monitors. All PPE shall display the appropriate insignia (ANSI, NIOSH or other appropriate standard) stating that the equipment does meet the standards.

PERSONAL PROTECTIVE EQUIPMENT AND HAZARD ASSESSMENT

PPE Provided

Power Service, Inc. will supply all PPE deemed necessary by the hazard assessment and/or the contracting employer. All PPE will be in good working order, and all defective PPE must immediately be repaired or replaced.

The following PPE shall be provided:

- Eye and Face Protection (see Appendix #1)
- Head Protection (see Appendix #2)
- Hearing Protection (see Appendix #4)
- Respiratory Protection (see Appendix #5)
- Hand Protection (see Appendix #6)
- Special Clothing Protection (see Appendix #7)
- Other Personal Protective Measures (see Appendix #8)

Employees will provide their own prescription eyewear and steel toed footwear (see Appendix #3).

Hazard Assessment

Facilities where Power Service, Inc. will work are assumed to have some or all of the following potential safety hazards:

- Overhead structures, with potential falling material
- High, medium and low elevation piping
- Sound levels in excess of 85 dBA
- Flammable or combustible gases and/or liquids
- Heavy equipment
- Welding and grinding
- Tripping hazards

As such, the required PPE will include hard hat, steel toed footwear, safety glasses, hearing protection (where needed) and fall protection (where needed). A more detailed hazard assessment will be performed if the contracting employer requires it or if the contractor deems it necessary based on the conditions at each individual site. The contracting employer may stipulate the required PPE based on their own hazard assessment.

PERSONAL PROTECTIVE EQUIPMENT AND HAZARD ASSESSMENT

Hazard Assessment Guidelines

1. Survey – Conduct a walk-through survey of the areas in question. The purpose of the survey is to identify sources of hazards to workers and coworkers. Consideration should be given to the basic hazard categories:

Impact	Penetration	Compression (Rollover)	Chemical
Heat	Harmful dust	Light radiation	Noise

2. Sources – During the walk-through survey, observe the following sources:
   - Motion, such as machinery or processes where any movement of tools, machine elements or particles could exist or movement of personnel that could result in collision with stationary objects.
   - High temperature that could result in burns, eye injury or ignition of protective equipment
   - Chemical exposure
   - Harmful dust
   - Light radiation, such as welding, cutting or heat treating
   - Falling objects or potential for dropping objects
   - Sharp objects that might pierce the feet/hands or cut the arms/legs.
   - Rolling or pinching objects which could crush body parts
   - Any electrical hazards
   - Noise hazards
3. Gather incident, accident or near miss data
4. Organize and analyze data – Each of the basic hazards should be reviewed and a determination made as to the type, level of risk and seriousness of potentially injury from each of he hazards found in the area. The possibility of exposure to several hazards simultaneously should be considered.
5. After becoming familiar with the potential hazards, select the proper PPE that provides a level of protection equal to or greater than the hazard.
6. Train the user on the PPE within 30 days of the hazard assessment.
7. Document in writing all training given on appropriate form.
8. Reassessment of hazards in the workplace will be necessary by identifying and evaluating new equipment and processes, reviewing accident records and reevaluating the suitability of previously selected PPE.

PERSONAL PROTECTIVE EQUIPMENT AND HAZARD ASSESSMENT

APPENDIX 1
EYE AND FACE PROTECTION

Equipment Standards

Approved eye and face protection equipment must:
- Conform to ANSI standards
- Be properly fitted and worn
- Be marked to facilitate identification of the manufacturer

Note – Safety glasses that conform to ANSI standards must be stamped "Z87" on the temple of the glasses. Safety glasses must comply with ANSI Z87.1-1989 or later amendments

When to Wear

All personnel must wear approved eye protection while at all locations. Certain tasks with a potential for eye injury require additional eye protection, regardless of the location.

Corrective lenses (Glasses)

Personnel who require corrective lenses (glasses) must wear:
- Prescription safety glasses
- Safety glasses, specifically designed to be worn over corrective lenses

Note – For additional information on the use of prescription lenses and contacts, refer to the Respiratory Protection section.

Contact Lenses

Personnel who wear contact lenses and work where eye hazards exist must inform their supervisors that they wear contact lenses. Personnel may wear contact lenses at field locations, shops, plants and warehouses if:
- The lenses are used in conjunction with approved eye protection equipment; and
- Their use is not prohibited by documented work rules and regulations.

Special Eye Protection

Safety glasses with side shields are approved for general eye protection in the workplace. Other eye protection is required under certain conditions and in some locations, as shown below:

PERSONAL PROTECTIVE EQUIPMENT AND HAZARD ASSESSMENT

ACTIVITY	REQUIRED EYE AND FACE PROTECTION
Activities that create flying particles: • Grinding • Hammering • Wire brushing • Weed eating • Compressed air cleaning • Cutting cable or wire rope • Using power tools • Using pneumatic tools • Blasting • Sanding • Chipping • Machining • Chiseling • Scraping • Buffing • Sawing	Impact-type goggles or safety lasses with side shields Note: A face shield must also be worn if a face hazard exists.
• Handling hazardous liquids, powders, chemicals or vapors, or • Presence in the immediate vicinity where these materials are being handled, or • Where an eye/face hazard exists while venting natural gas.	Splash-proof goggles and face shield Reference : for more information, always refer to the MSDS for the material involved
Inspecting and lighting fire boxes manually	Safety goggles and face shield
Inspecting equipment, tubing or piping while they are under hydraulic pressure or air pressure	Safety goggles
Working near other persons who are doing work that requires safety goggles	Safety goggles

Welding Protection

Anyone observing welding operations must wear proper eye protection. The table below shows the eye protection that welders and their helpers must wear. Shaded welding and cutting lenses must be protected by a clear cover glass.

PERSONAL PROTECTIVE EQUIPMENT AND HAZARD ASSESSMENT

Activity	The Welder Must Wear	The Helper Must Wear
Acetylene gas cutting	• Goggles with No. 5 or 6 shade lenses, or • No. 5 or 6 shade full face shield or helmet in conjunction with safety glasses with side shields	• Goggles with No. 4 shade lenses, or • No. 4 shade full face shield or helmet in conjunction with safety glasses with side shields
Electric-arc welding (Arc current < 250 amps)	• A welding helmet with No. 9 or darker shade lenses, or • A hand shield with No. 9 or darker shade lenses plus safety glasses with side shields or goggles	• Goggles with No. 6 or darker shade lenses

Eyewash Facilities

Eyewash stations (portable or stationary) must be provided for immediate emergency use at locations where hazardous chemicals (caustic, corrosive, toxic, etc.) are used. Stations must be clearly marked and accessible.

Eyewash stations should be periodically checked for proper function, including temperature, pressure and water quality. Documentation of the latest 2 inspections must be kept at the location. Use ANSI Z358.1-1990 (Emergency Eyewash and Shower) as reference.

Eyewash material (eyewash solution, cups, etc.) must be provided to all employees who work in the field. These items are to be carried in their company vehicle or located at the work site as appropriate. For emergency situations in remote areas, potable water can be used to flush eyes.

PERSONAL PROTECTIVE EQUIPMENT AND HAZARD ASSESSMENT

APPENDIX 2
HEAD PROTECTION

Approved Hardhats

Hardhats are designed to provide protection for specific hazards. The ANSI Class B design is the only approved hardhat because it provides the highest level of protection against impact from falling objects and it reduces the danger of high voltage shock and burn. Metal hardhats are prohibited. All hardhats must comply with ANSI Z89.1-1986 or later editions.

When to Wear

All Power Service, Inc. personnel must wear hardhats at all field locations and plants.

When Not Required

A hardhat is not required:

- Inside vehicles
- In shops or warehouses unless overhead work is being done
- In parking lots
- In office areas or control rooms
- When performing work that requires a special helmet
- When performing work in small spaces where the wearing of a hardhat causes more hazards than would be reduced by wearing the hardhat.

How to Wear

- The hard hat must not be tipped forward, backward, or to either side.
- The headband must be adjusted to the proper size to provide sufficient clearance between the shell and headband. The suspension system must never be modified or altered, and objects must never be carried or stored between the headband and head.
- When chinstraps are used, they must be adjusted so that the hardhat stays positioned properly. On the head and must be designed to break at a force that will prevent a strangulation hazard.
- Liners designed for use during cold weather should be installed in accordance with the manufacturer's instructions.
- The hardhat must not be worn on top of everyday hats or caps.

Maintenance

Never use gasoline, solvents or similar substances on a hardhat. Use mild soap and warm water to clean a hardhat. Never paint or modify the shell of a hardhat (e.g., punching holes in it for additional ventilation).

Periodic Inspection and Replacement

Hardhats should be periodically inspected. The hat or headband may need to be replaced if the following is observed:

- Cracks
- Breaks
- Brittleness
- Discoloration

Hardhats used on a daily basis should have their headband/suspension replaced annually and the entire hardhat replaced every five years. The entire hardhat should be replaced after a major impact.

PERSONAL PROTECTIVE EQUIPMENT AND HAZARD ASSESSMENT

APPENDIX 3
FOOT PROTECTION

Minimum Requirements	Sturdy footwear with nonslip soles and steel toes must be worn: • At all field locations, shops, warehouses and plants • Any other location where the potential for foot injury exists Protective footwear must comply with ANSI Z41-1991
Footwear Inspection and Replacement	Footwear should be inspected periodically and replaced when it does not provide adequate protection or traction.

APPENDIX 4
HEARING PROTECTION

Required Use

All personnel, including contractors and visitors, must wear hearing protection in areas where signs are posted that warn of excessive noise levels. The excessive noise level limit is 85 dbA on an 8 hour time-weighted average basis. Annual training will be done for those employees subject to these excessive noise limits. Employees hearing protection will be reevaluated and/or refitted when needed. If hearing protection is needed or needs to be replaced this will be done at no cost to the employee.

Employees will use and be trained on the correct noise monitoring device and procedures before working in areas where exposure noise limits may exceed 85 dbA. Employers shall evaluate hearing protection for the specific noise environments in which the protector will be used.

Hearing protection should be worn in areas that are not posted, if the work creates a potential for temporary elevated noise levels, such as when high-pressure gases are released. Employer will maintain an accurate record of all employee exposure measurements and all records will be maintained by regulation.

Power Service, Inc. does not require any audiometric testing for their employees. Therefore, audiograms will not be required for the employees. When information indicates that employee exposure may equal/exceed the 8 hr time-weighted average of 85 decibels, Power Service, Inc. will implement a monitoring program to identify employees to be included in the hearing conservation program. At this time audiometric testing will be made available to all employees whose exposures equal or exceed a 8 hr time-weighted average 85 decibels.

Within six months of first exposure Power Service, Inc. shall establish a valid baseline audiogram against which future audiograms can be compared. Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise. Hearing protection may be used to meet the requirement. Employees shall also be notified to avoid high levels of noise.

At least annually after obtaining the baseline audiogram, Power Service, Inc. shall obtain a new audiogram for each employee exposed at or above the 8 hr time-weighted average of 85 decibels.

Each employee's annual audiogram shall be compared to that employee's baseline audiogram to determine if the audiogram is valid and if a standard threshold shift has occurred. If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift, the employee shall be informed in writing, within 21 day of the determination.

Employees can request a medical evaluation if deemed necessary.

APPENDIX 5
RESPIRATORY PROTECTION

Where to Use

Respiratory protection must be used where respiratory hazards may be encountered in the workplace. Generally, these hazards include but are not limited to:

- Oxygen deficiency
- Gas and vapor contaminants
- Particulate contaminants, such as harmful dust, fume, chemical mist or fog, smoke and spray
- A combination of gas, vapor and particulate contaminants
- Potential exposure during emergency response activities

RESPIRATOR COLOR CHART

CONTAMINANT	COLOR
Acid Gases (note – it is not suggested to use air purifying respirators for acid gas)	White
Organic vapor	Black
Ammonia Gas	Green
Carbon Monoxide	Blue
Acid gases and organic vapor	Yellow
Acid gas, organic vapor and ammonia gas	Brown
Radioactive materials	Purple
Hydrocyanic acid gas	White with ½" green stripe near bottom
Chlorine gas	White with ½" yellow stripe near bottom
Acid gas and ammonia gas	Green with ½" white stripe near bottom
Particulates with any of the above gases or vapors	Color of contaminant, as designated above, with ½" gray stripe near top
All the above contaminants	Red with ½" gray strip near top

APPENDIX 6
HAND PROTECTION

Types of Hand Protection

Workers must use hand protection to prevent injuries when hazards are present. The most common types of hand protection are gloves and barrier creams. Gloves are normally the most effective type of hand protection.

Glove Selection

When selecting gloves, consider:

- Size, style, material, thickness and design
- The potential hazards associated with the material or equipment being handled
- Chemical hazards

Personnel working around rotating or moving equipment must not wear gauntlet gloves or gloves that fasten around the wrist and should exercise caution using other types of gloves that might cause the hand to become caught or pulled into a dangerous area.

Cleaning Chemical Resistant Gloves

Chemical resistant gloves should be cleaned in accordance with manufacturer's recommendations. Soap and water should be used to clean the inside of the gloves.

Barrier Creams

Barrier creams do not replace required protective equipment. However, they may be used selectively to provide protection to hands or other areas of exposed skin.

PERSONAL PROTECTIVE EQUIPMENT AND HAZARD ASSESSMENT

Types of Gloves The table below describes types of gloves used during operations:

Glove Type	Purpose	Common Uses
Cotton/canvas cloth	• Protects from abrasions • Provides warmth and cleanliness	Light work (e.g., handling pipe, small hand tools, and materials with rough surfaces)
Leather/leather reinforced	Protects from • Abrasions • Puncture wounds • Lacerations	Handling rough, rigid or abrasive materials during work activities such as wire-rope handling, grinding and blasting
Leather, reinforced with metal or metal stitching	Protects from • Lacerations • Abrasions	Handling edged tools for cutting, such as knives, chainsaws and skill saws.
Leather, insulated or heat resistant	Protects from thermal burns (hot or cold)	Welding or operating/maintaining cryogenic equipment or equipment around engines, boilers and steam lines
Electrical insulated	Protection from electrical burns and shock	Work on electrical equipment
Latex	Protection from • Bloodborne pathogens • Mild detergents	First aid, emergency response, cleaning, glove liners.
Chemical resistant	Protection from • Skin contact • Skin irritation or absorption • Burns	Handling chemicals such as acids, caustics, soda ash, and most hydrocarbons. Refer to the MSDS for the chemical to be handled.

PERSONAL PROTECTIVE EQUIPMENT AND HAZARD ASSESSMENT

APPENDIX 7
PROTECTION BY SPECIAL CLOTHING

When to Wear

Special protective clothing should be used during operations where potential job hazards may include but are not limited to:

- Exposures to hazardous materials (see MSDS for proper clothing)
- Hot work and/or pipeline repairs
- Burns from fires due to flammable atmospheres (use fire retardant clothing)
- Other hazards that may be produced by special operations, such as short-term exposures to extreme heat or cold.

Examples

Examples of operations that may require flame resistant clothing include but are not limited to:

- Loading and unloading LPG
- All welding operations
- Hot work
- Work in excavations with gas exposure

The use of fire resistant clothing will depend on the results of the hazard assessment and the requirements of the contracting employer.

PERSONAL PROTECTIVE EQUIPMENT AND HAZARD ASSESSMENT

APPENDIX 8
OTHER PERSONAL PROTECTIVE MEASURES

Additional Protective Measures

Personnel must wear clothing suited to the work, weather and the environment in which they work.

Personnel who work around moving and rotating machinery must not wear:

- Neckties
- Long hair or beards that might constitute a hazard
- Neck chains
- Gauntlet gloves or gloves that fasten around the wrist
- Baggy, loose or ragged clothing
- A handkerchief or rag tied to them that prevents removal by one quick, easy pull.

If potential hazards exist, the wearing of jewelry, such as earrings, rings, watchbands or neck chains on the job is prohibited.

If clothing becomes saturated with oil, gasoline or chemicals, the following actions must be taken:

- Avoid all sources of fire until clothes have been changed and the skin is washed free of oil, etc.
- Respond as prescribed by the appropriate MSDS
- Immediately wash the exposed skin area with soap and water to prevent skin irritation and change clothes

PERSONAL PROTECTIVE EQUIPMENT AND HAZARD ASSESSMENT

APPENDIX 9
HAZARD ASSESSMENT FORM

LOCATION - _____

DATE - _____

PERFORMED BY - _____

_____

_____

_____

HAZARDS IDENTIFIED	CATEGORY	RANK	PPE SELECTED

Employees must be informed and become familiar with the identified hazards. Training on the PPE shall be given no later than 30 days after the Assessment is completed. Training shall consist of proper fit, use, care and limitations of all PPE

CERTIFIED BY _____

DRIVING SAFETY

Purpose	Employees driving Company-owned or leased vehicles must be properly trained and aware of their safety responsibilities. Drivers must practice defensive driving techniques at all times. Properly maintained vehicles are another integral part of safe driving practices.
Responsibility	Power Service, Inc. is responsible for ensuring that vehicles are properly maintained, that all drivers are properly licensed and that all drivers operate their vehicles in compliance with all laws and regulations.
Regulations	All drivers must have a valid drivers license in their State of residence, and valid for the class of commercial vehicle which they drive. Drivers shall follow all local, state and federal laws, including DOT Hazardous Materials regulations. Power Service, Inc. employees must report all citations for traffic violations received while operating a company vehicle to their supervisor immediately. All drivers must also follow posted speed limits within facilities or maintain a safe speed if a speed limit is not posted.
General Vehicle Safety Tips	• Secure all materials, tools and equipment against movement when they are stored in the same compartment as workers or erect barriers (such as headache racks) to isolate workers from stored items • Only use a cellular telephone while driving in areas where the traffic conditions allow safe use of the phone. Note that there are some states where the use of a standard cellular phone is illegal. Use a hands free or speakerphone if possible. • Vehicles should be equipped with a proper fire extinguisher • Ensure seat belts are in use at all times

SAFETY MEETINGS

Purpose

It is required of all employees that they attend scheduled safety meetings to promote safety awareness.

Responsibility

Power Service, Inc. is responsible for holding the meetings as required by this manual and ensuring that all personnel attend these meetings on a quarterly basis. Note that job-specific safety meetings will be held prior to each job with the contracting employer.

Procedure

There should be at least one safety meeting per quarter. Tool box safety meetings should be held as required.

The safety meetings are documented. The format of the safety meeting is flexible according to the needs of the facility. However, the following topics should be covered in each safety meeting:

- Sign-in.
- Discussion of accidents, near incidents and incidents at the facility.
- Open discussion for any safety questions, problems or other issues.
- Scheduled topic.
- Discussion of following quarter topic.

Please note that safety issues or questions should be brought up as they occur - do not wait for a safety meeting to bring these issues up.

Required Safety Meeting Topics

Certain topics are mandatory for all employees on an annual basis.

- Respiratory Protection
- Hazard Communication Program
- Emergency Response Training
- Fire Equipment Training
- Safe Work Permits (hot work, confined space entry and excavation)

One Person Companies

If the contractor is a one person company, the safety meeting will consist of a review of a topic in the safety manual or other safety topic. Documentation of this safety review will be maintained.

CONFINED SPACE ENTRY

Purpose

To provide for the safety of employees and contractors who must enter a confined space in order to perform a job task.

Responsibility

Power Service, Inc. is responsible for ensuring that:

- The confined space entry program is implemented.
- Contractors working for Power Service, Inc. have and use a confined space entry program at least equal to this program and provide the proper training and equipment for their employees.
- Proper training is provided for all employees prior to assigning them confined space entry duties.
- All required equipment is provided, properly maintained and used.
- Entry operations are reviewed and deficiencies are corrected when there is reason to believe the program does not protect employees.
- The confined space entry program is at least as stringent as the contracting company

Each employee is responsible for:

- Not entering a permit required confined space except as specified in this procedure.
- Performing the assigned duties and using the provided equipment in accordance with the training and the manufacturer's specifications.

Scope

This standard applies to all company employees, contract personnel and subcontractor employees who must enter a confined space as part of their job. This procedure requires employees to:

- Prevent unauthorized entry into a permit space.
- Identify and evaluate permit space hazards.
- Place appropriate warning signs on permit spaces.
- Implement procedures for ensuring the safe entry into permit spaces.
- Be trained in the requirements of confined space entry.

Definitions

Acceptable Entry Conditions - the conditions that must exist in a permit space to allow entry.

Attendant - an individual stationed outside one or more permit spaces who monitors the authorized entrants and performs all duties assigned to an attendant in this standard.

CONFINED SPACE ENTRY

Definitions (cont.)

Authorized Entrant - an employee who is authorized to enter a permit space.

Blanking or Blinding - the absolute closure of a pipe, line or duct by the fastening of a solid plate that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line or duct with no leakage beyond the plate.

Confined Space - a space that:

- Is large enough and so configured that an employee can bodily enter and perform assigned work;
- Has limited or restricted means for entry or exit (i.e. tanks, vessels, pits, storage bins, vaults); and
- Is not designed for continuous occupancy.

Double Block and Bleed - the closure of a line, duct or pipe by closing and locking/tagging two in-line valves and by opening and locking/tagging a drain or vent valve in the line between the two valves.

Emergency - any occurrence (including any failure of hazard control or monitoring equipment) or event external or internal to the permit space that could endanger the entrants.

Entry - the action by which a person passes through an opening into a permit-required confined space. Entry includes the work activities in the space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.

Entry Permit - the printed document that allows and controls entry into a permit space. Requirements of this permit are detailed in the Permits section later in this procedure.

Entry Supervisor - the person responsible for determining that the acceptable entry conditions are present within a permit space, overseeing entry operations, and for terminating the entry as required by this procedure. The Entry Supervisor shall know the hazards that may be faced during entry, verify that rescue services are available and remain within the facility where entry is to be conducted.

CONFINED SPACE ENTRY

Definitions (cont.)

Hazardous Atmosphere - an atmosphere that contains one or more of the following:

- Flammable gas, vapor or mist in excess of 10% of its lower explosive limit (LEL) or lower flammability limit (LFL).
- Airborne combustible dust at concentrations exceeding LFL (obscures vision at 5 feet)
- Atmospheric oxygen concentrations below 19.5% or above 23.5%
- Atmospheric concentrations of any substance for which a dose or permissive exposure limit (PEL) is exceeded
- Atmosphere that is immediately dangerous to life or health (IDLH)
- Naturally occurring radioactive material (NORM) at or above 50 microrem/hr.

Hot Work Permit - a written authorization to perform work capable of providing a source of ignition (see section on Hot Work in this manual).

IDLH - Immediately Dangerous to Life or Health - any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space. This space may be entered for Emergency Rescue only using the buddy system and proper equipment. To enter an IDLH atmosphere requires 4 people - the entrant, the entrant's partner and at least 2 stand-by people.

Isolation - the process by which a permit space is removed from service and completely protected from unwanted energy or material being released into the space.

Non-Permit Required Confined Space - A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.

Permit Required Confined Space - a space that meets the definition of a confined space and has at least one of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere;
- Has the potential for engulfing an entrant;
- Has a configuration (such as sloping sides or trays) that could trap or asphyxiate an entrant; or
- Contains any other recognized serious safety or health hazard.

Permit spaces can include, but are not limited to, storage and sump tanks, vessels, separators, pits, pipelines and cooling fans.

CONFINED SPACE ENTRY

Definitions (cont.)

Prohibited Condition - any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

Rescue Service - the personnel designated to rescue employees from permit spaces.

Retrieval System - A line or rope secured at one end to the worker and the other end secured to a retrieval device or anchor point outside the entry space portal, used for non-entry rescue of persons from permit spaces.

1. Evaluation, Classification and Posting

Each facility shall evaluate confined spaces within the workplace to determine if they are permit required confined spaces. Such evaluations should be made using the flow chart in Attachment A. All spaces classified as permit required confined spaces shall be posted with a sign. As an example, the sign could state the following:

DANGER
CONFINED SPACE
DO NOT ENTER WITHOUT PERMIT
AND AUTHORIZED ATTENDANT

If a space is determined to be a permit required confined space, a procedure identifying the space and outlining the acceptable entry conditions, isolation requirements, tests, ventilation requirements and equipment required for entry will be developed if one is not already available. Such procedures will be made available to all entry supervisors, attendants and entrants.

2. Permit Required Spaces with Hazardous Atmosphere Only

If the evaluation shows that the only hazard posed by a permit space is an actual or potential hazardous atmosphere, the space can be entered without following all of the permit conditions provided:

- The hazard can be eliminated by using forced air ventilation, continuous monitoring of the hazardous atmosphere and periodic inspections.

The following requirements must be met before entry can occur:

- Any conditions making it unsafe to remove an entrance cover must be eliminated before the cover is removed.
- Protection must be provided to prevent foreign objects or other workers from falling through the opening when the covers are removed.
- Internal atmospheric testing must be completed prior to any employee entering the space. Such tests shall be made using a direct reading monitor that has been properly calibrated for the following conditions and in the order shown
  - Oxygen content (between 19.5% and 23.5%)
  - Flammable gases and vapors (less than 10% LEL)
  - Potential toxic air contaminants (less than the PEL of the contaminant)
  - Testing must be done on a continuous basis to verify that these levels are not exceeded whenever any employees are inside the space. If testing shows any exceedance of the accepted levels, all persons shall leave the space immediately and the space shall be evaluated to assure that a safe atmosphere exists prior to any further entry.
  - Continuous forced ventilation shall be used, as follows:
    - ✓ No person shall enter the space until the ventilation has eliminated the hazardous atmosphere.
    - ✓ The ventilation must be directed to the area where the work is or will be done and shall continue for the length of time persons are in the space.
    - ✓ The air supply for the forced ventilation shall be from a clean source and must not increase the hazards in the space.
- The evaluation and demonstration that such ventilation and continuous monitoring eliminates the hazard must be documented on the work permit by the entry supervisor before entry and made available to each person entering the space. Posting the documentation at the entry to the space can provide this notification. Such posted documentation does not eliminate the need for the confined space permit.

3. Reclassification of Confined Spaces

A space classified as a permit required confined space may be reclassified as a non-permit required confined space if:

- The space poses no actual or potential atmospheric hazards and if all hazards within the space may be eliminated without entry into the space for as long as the non-atmospheric hazards remain eliminated.

  If it is necessary to enter the space to eliminate the hazards, such entry shall be done in accordance with the confined space entry procedures. Then, after proper testing to assure that such hazards have been eliminated, the space may be reclassified. It is important to note that control of atmospheric hazards through the use of forced air ventilation does not constitute elimination of the hazards.

- The entry supervisor shall document all testing and isolation used to determine that the hazards have been eliminated. This documentation must contain the date, location of the space, the methods used to make the determination and the signature of the person making the determination. Such certification shall be posted at the entrance to the space and available to any employee entering the space.

- If conditions change within the space which has been reclassified, then each employee must exit the space and the space shall be re-evaluated to see if it can meet the criteria of a non-permit required confined space.

4. Procedures - Acceptable Entry Conditions

Procedures and practices shall include testing for specific acceptable entry conditions, such as

- Oxygen levels between 19.5% and 23.5%.
- Flammable gas or vapor level below 10% LEL.
- Toxic gas levels below the PEL for the specific toxin.
- Minimum/maximum temperatures within the space.

5. Procedures - Isolation and Purging

Procedures and practices shall include isolation and purging requirements as shown below:

- Where necessary, specific piping or valves must be blinded or removed. A sketch shall be produced showing requirements that need to be met for proper isolation.
- Utility supplies must be removed or blocked in to prevent unwanted materials or energy from entering the space.
- Specific equipment must be locked out to prevent unwanted energy from being released into the space (such as an engine or other reciprocating machinery).
- Materials used for cleaning, flushing, inerting or purging equipment such as steam or nitrogen must be followed by forced air ventilation.
- Barriers must be in place to prevent external hazards from affecting an entrant to the space.
- Testing requirements must be in place to verify that the isolation and purging was and remains effective in eliminating the hazards.

6. Procedures - Specific Equipment Required

Procedures and practices shall include specific equipment required for entry, such as:

- Testing and continuous monitoring equipment needed to determine if acceptable entry conditions exist.
- Forced air ventilation equipment needed to obtain acceptable entry conditions.
- Communications equipment necessary to allow the attendant and entrants to maintain communications to warn of dangerous situations or trigger an evacuation alarm.
- Personal protective equipment required to protect entrants such as breathing equipment, tyvek suits, heat resistant suits and gloves, in the event that engineering and work practice controls cannot adequately protect employees.
- Lighting equipment needed to allow entrants to see well enough to work safely and exit the area in the event of an emergency.
- Barricades or shields necessary to protect the entrants from hazards outside of the work space.
- Ladders or other devices to enable entrants to exit the work space.
- Rescue equipment such as ropes, retrieval systems, full body harnesses, etc.

7. Procedures - Prior to Entry

The following procedures and practices shall be implemented prior to entry:

- The entry supervisor shall ensure that the physical and atmospheric hazards of the space to be entered are evaluated. The MSDS manual shall be used to determine hazards, appropriate PPE and PELs.
- Testing of the space and isolation of the space as discussed in the sections above.
- There must be persons designated to fill the following roles - authorized entrants, attendants, and entry supervisors. The duties and training of these personnel is discussed in the training section later in these procedures.
- Identify and implement procedures for summoning rescue and emergency services. In order to be effective, these rescue services will most likely have to be provided from in plant resources. Emergency services numbers such as ambulance or fire departments must be included as part of the procedure.
- If more than one employee is to enter the space at a time, such activities shall be discussed and coordinated prior to entry. Each entrant should be well informed as to the nature and scope of the other entrant's work.

8. Procedures - During Entry

The following procedures and practices shall be followed during entry:

- When the Entry Supervisor determines that acceptable entry conditions exist, the authorized entrant may then enter the permit space. The attendant shall verify that the conditions are acceptable throughout the duration of the entry.
- Continuous monitoring of conditions is required if the space cannot be effectively isolated or purged due to size or contents of the space. Continuous monitoring is recommended on all confined space entries.
- The attendant shall be stationed outside the permit space and remain in contact with the entrant at all times. Communications shall be through visual, voice or signal wire. The attendant may be assigned to more than one space providing the attendant is able to perform the duties required for each space.
- The entry supervisor shall oversee and terminate the entry operations when safe conditions cannot be maintained.

CONFINED SPACE ENTRY

9. Procedures - After Entry

The following procedures and practices should be implemented after entry:

- The entry procedures should include the proper method of placing the space back into service following the entry operations. These would include the removal of blinds, opening of valves and purging of the space if required.
- All sections of the entry procedures should be reviewed for accuracy before and after each entry and at any time it is felt that the procedures may not be adequate to protect a person who may enter the space.
- The entry supervisor shall oversee and terminate the entry operations when the job is over.

10. Work Generated Hazards

- All welding and cutting operations carried on in permit spaces shall be adequately ventilated to prevent accumulation of toxic materials or possible oxygen deficiency.
- All cylinders containing oxygen, acetylene, etc. shall be removed from the work area when not in use and shall be connected outside the permit space.
- A welding power source used in a permit space shall be placed and secured outside of the space where work is being performed.
- All equipment, chemicals and potential hazards shall be removed from the permit space when not in use for an extended period of time.
- Adequate protection for fire protection shall be kept near the permit space area.
- Class I, Division I, Group D electrical equipment, explosion proof lighting and non-sparking tools shall be used in the permit space when appropriate.

CONFINED SPACE ENTRY

11. Entry Permit

The Power Service, Inc. Permit Required Confined Space Entry permit (at end of manual) shall be used as an entry permit, unless the contracting employer provides one. Permits are required any time there is an entry planned into a "permit required" confined space.

- The permit must be filled out by the entry supervisor, who has the power to issue and cancel the permit.
- The duration of the permit should not exceed the anticipated time for completion of the job tasks.
- A permit will be revoked or canceled when the job is completed or if the conditions within the space exceed the conditions of entry.
- Each permit shall be kept in the possession of the entry attendant. If the attendant is monitoring more than one entry simultaneously, a permit shall be stationed at each entry location.
- Each issued permit must be retained for three (3) years to allow for proper review and evaluation of the system.
- An annual review covering all entries will be performed during a 12-month period. If no entry is performed during a 12-month period, no review is necessary.

12. Contents of the Entry Permit

The permit must include the following:

- The permit space to be entered.
- The purpose of entry.
- The date and authorized duration of the entry permit.
- The names of the authorized people who will enter the permit space.
- The name of the attendant.
- The name and signature of the entry supervisor.
- The hazards of the space which will be entered.
- The measures used to isolate, eliminate or control hazards prior to entry.
- The acceptable conditions for entry.
- The results of the initial and follow-up tests for these conditions and the initials of the person performing these tests.
- The rescue services which may be summoned and how they are to be summoned.
- The communication procedures which will be used.
- Personal protection, testing, communications and rescue equipment that are necessary for entry.
- Additional permits being issued such as hot work.
- Any other information which may be necessary for the protection of the entrants.
- Any problems that were encountered during the entry must be noted on the permit after completion of the job, so that appropriate changes in the entry procedures may be made.

13. Training

Yearly training will be provided as follows:

WHO - Each employee whose work is affected by this standard must be trained such that they are knowledgeable of the requirements of this standard and skilled in the tasks required for the safe performance of the duties that they may be assigned.

WHEN - This training will be provided to each affected employee prior to being assigned the duties or whenever there is doubt that the previous training was adequate for the hazards which may be present within the space.

WHAT - The training must establish the proficiency of the duties which will be expected of the person. Such training and proficiency testing must be documented. Documentation shall include the employee's name, signature of the trainer and the dates of the training. Such documentation shall be available to the employees upon request.

14. Duties of Authorized Entrants

Each person authorized to be an entrant shall:

- Know the hazards that may be faced during entry, including the methods, signs, symptoms and consequences of exposure to any toxic materials.
- Know how to properly use all personal protective, testing or monitoring, and communication equipment that may be used during the entry.
- Communicate with the attendant to alert them of changes in status or conditions that may affect the entry status.
- Alert the attendant if they suspect there is an increase in the hazards within the space. Entrant may request additional monitoring at any time.
- Exit the confined space if ordered to do so by the attendant or entry supervisor, or if hazardous conditions are encountered, or if an evacuation alarm is activated.

15. Duties of Attendants

Each person authorized to be an attendant shall:

- Know the hazards that may be faced during entry, including the methods, signs, symptoms and consequences of exposure to any toxic materials.
- Know the affects of exposure to the possible chemicals, including behavioral changes.
- Maintain an accurate count and identity of persons in the space.
- Be properly trained and equipped for rescue operations.
- Remain outside the space during entry operations until properly relieved. If rescue is necessary, the attendant should not attempt entry into the space until another attendant is on site.
- Communicate with the entrants as necessary to alert them of changes in conditions within the space.
- Monitor the activities both inside and outside of the space to assure it is safe for the entrants to remain in the space.
- Order the evacuation of the space if:
  - A prohibited condition is detected.
  - A change in the behavior of the entrants indicates possible exposure to a hazard.
  - A situation outside the space represents a hazard to the entrants.
  - Attendant can't perform assigned duties or must leave the area.
- Summon rescue or emergency services if required
- Not allow unauthorized persons to enter the space.
- Perform other tasks as outlined by the entry procedure, providing they don't interfere with the primary duty of protecting the entrants.

16. Duties of Entry Supervisors

Each person authorized to be an entry supervisor shall:

- Know the hazards that may be faced during entry, including methods, signs, symptoms and consequences of exposure to any toxic materials.
- Verify before signing the permit or allowing entry that:
  - The proper information is on the entry permit.
  - All tests specified by the procedures have been conducted and the results are documented.
  - All necessary PPE is in place and in proper working condition.
- Terminate the entry and cancel the permit if the work is completed or hazards arise that endanger the entrants.
- Restrict entry to the space to those authorized.
- Authorize persons as entrants or attendants and arrange the relief of persons assigned to these tasks.

CONFINED SPACE ENTRY

17. Rescue and Emergency Services

Employee Rescue Crews - Each person authorized to act as part of a rescue or emergency service crew shall:

- Be provided with and properly trained in the use of the necessary PPE and rescue equipment to affect a rescue from a confined space.
- Be trained to perform the duties necessary for rescue operations including all functions required under the "authorized entrant" section.
- Practice rescues from confined spaces. Such practices can take place using manikins or actual persons and involve real or simulated confined spaces. Simulated spaces should be representative of actual confined spaces in the workplace.
- Be trained in basic first-aid and CPR.

Contract Rescue Services - If contract or volunteer rescue crews are to be used for emergency and rescue services, they shall:

- Be notified of the hazards that may exist within the confined space.
- Be furnished a list of all confined spaces and entry procedures for spaces from which rescue may be necessary to allow appropriate rescue planning and practice.

Non-Entry Rescue - Retrieval systems or methods shall be used whenever possible to avoid risks to rescue crews unless this type of retrieval would not contribute to the rescue of entrants. Each retrieval system shall:

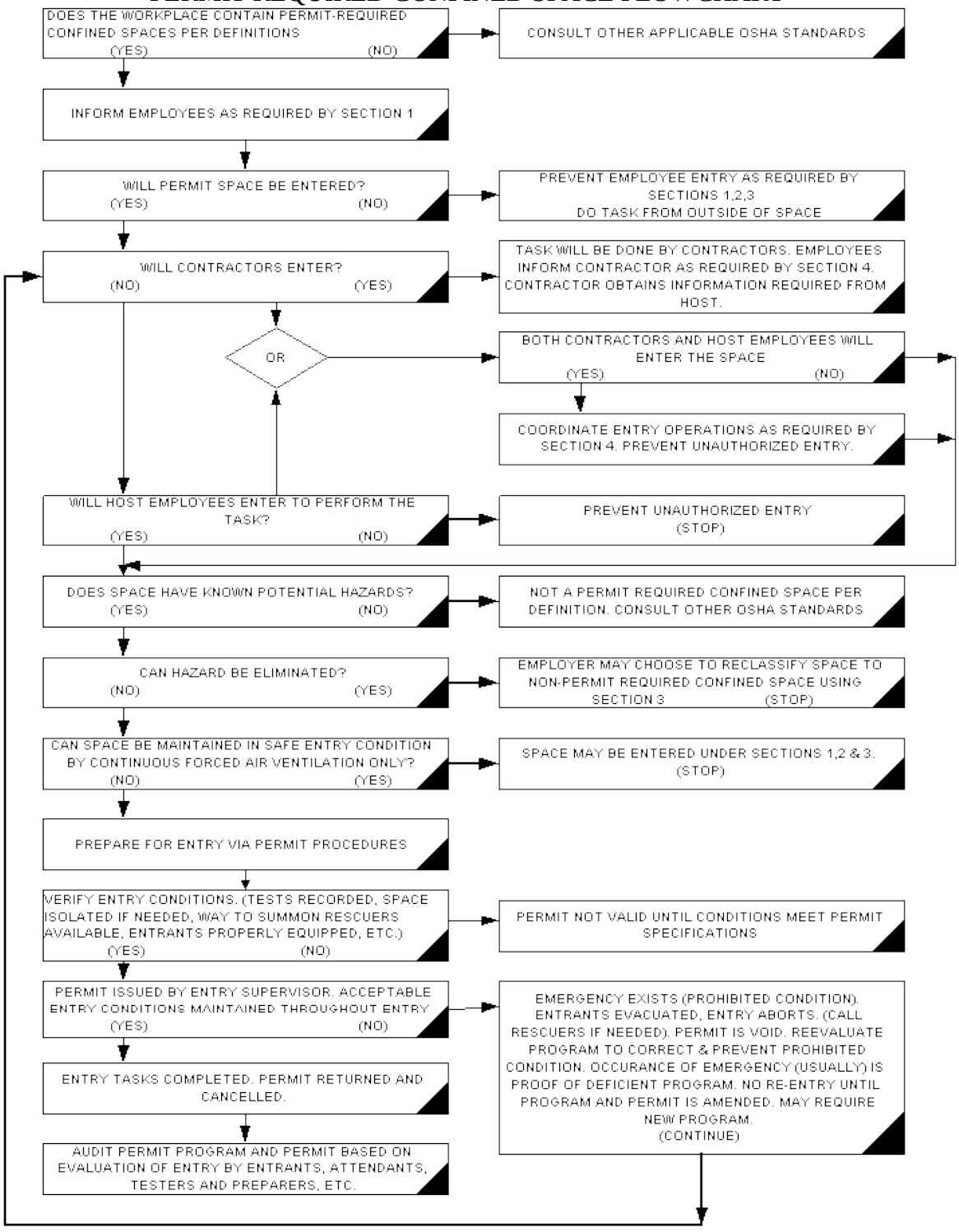
- Be of the chest or full body type with a retrieval line attached near the upper shoulder or above the head. Wristlets may be used if the other described equipment creates a greater hazard.
- Have the retrieval end of the line attached to a fixed point outside the entry space so that rescue can be started as soon as it is necessary. A mechanical method of retrieval shall be used if there is a drop of more than five (5) feet into the entry space.

Documentation

DOCUMENT	WHERE KEPT	HOW LONG
Confined Space Entry Permit	Office	3 years
Training of each employee	Office	Length of employment

CONFINED SPACE ENTRY

PERMIT REQUIRED CONFINED SPACE FLOWCHART



EXCAVATIONS

Purpose	This procedure establishes safety requirements for the protection of personnel who enter excavations or who excavate on the plant site, field stations or pipeline right-of-way. This procedure is to protect people from injury due to possible cave-ins or unexpected release of gases during excavation activities. This procedure is not a detailed procedure for how to design sloping/benching or how to classify soil. Those procedures require a competent, specially trained person, while this general procedure describes the safety requirements for all employees who may enter an excavation or participate in the excavation of soil.
Responsibility	It is the responsibility of Power Service, Inc. and the person in charge of the job to follow the requirements of this section.

EXCAVATIONS

Definitions

Competent Person - One who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are hazardous to employees, and who has the authority to take prompt corrective measures to eliminate these hazards.

Excavation - Any operation that involves boring, trenching, digging, auguring or removal of earth which results in a cavity, pit or depression.

Live Line - Any pipeline under pressure, pipeline carrying product or other hazardous material, buried cable or conduit containing electrical or instrumentation wiring that is in use.

Type A Soil - Cohesive soil with an unconfined compression strength of 1.5 tons/ft^2 (tsf) or greater. Examples of Type A soil are clay, silty clay, sandy clay, caliche and hardpan. However, no soil is Type A if:

- The soil is fissured.
- The soil is subject to vibration.
- There are other factors that would classify it as a less stable material.

Type B Soil - Cohesive soil with an unconfined compressive strength greater than 0.5 tsf but less than 1.5 tsf. Examples of Type B soils are angular gravel (crushed rock), silt, silt loam, sandy loam and:

- Previously disturbed soil unless it is Type C soil.
- Soils subjected to vibration and fissures.
- Dry rock which is not stable.

Type C Soil - Cohesive soil with an unconfined compressive strength of 0.5 tsf or less. Examples of Type C soils include:

- Submerged soil or soil from which water is freely seeping.
- Submerged rock that is not stable.

Procedures Prior to Excavation

The following safety procedures shall be observed prior to excavating:

1. The local "ONE CALL" or similar organization shall be notified prior to beginning an excavation or trenching operation. All piping or conduit shall be located and marked.
2. All "live lines" shall be located with probes.
3. Ensure that a competent person is supervising the project.

EXCAVATIONS

Permit Requirements for Excavations

1. Prior to starting work, a Safe Work Permit shall be issued by the person in charge of the job.
2. Precautions for confined space entry shall be observed when required, including testing and monitoring of atmosphere, emergency plans and rescue equipment. Refer to the confined space entry section of this manual for more details.
3. If the excavation is more than 4' deep, a confined space entry permit is required. If the excavation is more than 3' deep and there is congestion due to other piping or other obstructions, a confined space entry permit is required.

EXCAVATIONS

Other Procedures for Excavations

1. Prior to start of work within any excavation, the faces of the excavation shall be scaled to remove any loose material and other material shall be stored at least two feet (2') from the edge of the excavation.
2. The walls of all excavations deeper than four feet (4') shall be shored up or sloped according to OSHA requirements (see 1926.650 through 1926.653). The type of shoring and/or sloping will be determined based on the type of soil determined by a competent person.
3. A competent person shall inspect the excavation at least twice per day, with documentation. More frequent inspections may be necessary in case of rain, sloughing side walls or similar hazard increasing events.
4. If there is evidence of possible cave-ins or slides, all work in the excavation shall cease until necessary repairs or precautions have been taken to safeguard the employees.
5. For a trench or excavation more than four feet (4') deep and eight feet (8') long, a ladder or other acceptable method of exit is required. A ladder should be available at least every twenty-five feet (25'), but one ladder must always be in view. If a structural ramp is used rather than a ladder, a competent person must design the ramp.
6. Except in stable rock, excavations below the level of the base of a foundation or retaining wall shall not be permitted unless the wall is underpinned and other precautions are taken to ensure the stability of adjacent walls.
7. Barricades shall be erected by the work crew doing the excavating and shall remain in place until the excavation is filled in.
8. Heavy equipment.
   - At no time shall personnel be in an excavation that is within twenty five feet (25') of an operating backhoe or other similar operating equipment unless the excavation has been properly back sloped, personnel are protected by a trench box and backhoe is properly barricaded and spaced to insure against a cave in or fall in hazard.
   - Trenching machines, backhoes, boring machines, paving breakers, concrete saws and other mechanical equipment shall be operated only by authorized employees.
   - No employees shall be allowed under loads handled by digging or lifting equipment.

EXCAVATIONS

Soil Type Classification

A competent person shall make each soil and rock classification, based on the results of at least one visual and one manual test.

Visual Test - Visual tests are conducted to identify the factors and conditions affecting the classification of soil types.

1. Observe excavated soil and faces of the excavation for evidence of fine-grained (cohesive material) or coarse-grained sand or gravel (granular material).
2. Observe soil as it is excavated - soil remaining in clumps is cohesive and soil that breaks up easily is granular.
3. Observe the faces of excavations - if crack-line openings appear or chunks of soil fall off, the soil could be fissured.
4. Observe the excavation and adjacent areas for utilities which may identify previously disturbed soil.
5. Observe the opened side of the excavation for layered systems and estimate the slope of the system (horizontal to vertical).
6. Observe the excavation and adjacent area for evidence of water encroachment.
7. Observe the excavation and adjacent area for sources of vibration that may affect the stability of the excavation faces.

Manual Test

1. Compression strength - estimate the unconfined compressive strength of the soil by using a pocket penetrometer or by using a hand operated shear vane.
2. Plasticity - mold a moist or wet sample of soil into a ball and attempt to roll it into thin threads without crumbling.
3. Dry strength - Granular soil is dry and crumbles on its own or with moderate pressure into individual grains. If the soil is dry and falls into clumps, but the smaller clumps can only be broken up with difficulty, it may be a combination clay. If the dry soil breaks into large clumps which can only be broken with difficulty and there is no indication of fissured soil, the soil may be considered unfissured.
4. Thumb penetration - if a soil can readily be indented by the thumb, but only penetrate with great effort, this would be Type A soil. Type C soil can easily be penetrated several inches by the thumb and can be molded with light finger pressure. This test should be conducted on an undisturbed soil sample as soon as practicable after the excavation to keep to a minimum the effects of exposure to drying influences.

Upon completion of the visual and manual testing of the soil, the results shall be compared to the definitions for determination of the soil type.

EXCAVATIONS

Sloping and Benching

When excavating, one of the following three options for the design of sloping and benching systems shall be used.

Option 1 - The excavation may be made with a minimum allowable slope of 2 horizontal to 1 vertical.

Option 2 - The excavation may be sloped or benched to the configurations found in applicable tables. Use of these tables require that the soil be classified for the location of the excavation. Copies of these tables are in the OSHA regulations.

Option 3 - A design using written tabulated data from tables and charts may be selected. Identification of the parameters, limitations of data, explanatory information, and a copy of the tabulated data, which identifies the registered professional engineer who tabulated the data, is required on site during construction.

Supports and Trench Shields

Options for design of support, shield and other protective systems are:

Option 1 - Determine the soil classification for the location of the excavation. Timber shoring configurations for different soil types are found in applicable tables.

Option 2 - Determine the soil classification for the location of the excavation. A support, shield and shoring system design using manufacturer's tabulated data may be used.

Option 3 - A design using written tabulated data from tables and charts may be selected. Identification of the parameters, limitations of data, explanatory information and a copy of the tabulated data, which identifies the registered professional engineer who tabulated the data, is required on site during construction.

Documentation

Documentation required during excavations include:

- Safe work permits
- Excavation inspections
- Design data on excavations and/or shoring.
- Soil classifications
- Training for the competent persons

ELECTRICAL SAFETY

Purpose	To prevent injuries and minimize damage to equipment, Power Service, Inc. has these standards for the proper installation and handling of electrical devices and wiring.
Responsibility	It is the responsibility of Power Service, Inc. to assure that the employees under their supervision are properly trained in the safe handling of electricity and the conditions of this standard. It is also the responsibility of Power Service, Inc. to ensure that no person undertake electrical work for which they are not properly trained.

ELECTRICAL SAFETY

Electrical Safety Guidelines

Follow these guidelines for general electrical safety

- Unplug equipment prior to repairing or servicing it.
- Report all electrical problems to your supervisor. Do not attempt to repair electrical problems unless you are properly trained.
- Portable electrical heaters must be located so as to avoid a tripping hazard. Always unplug them when not in use.
- Keep electrical equipment away from water unless specifically designed for that service.
- Be aware of overhead power lines when working with tall equipment (cranes, ladders, tall vessels, etc.) Overhead lines must be deenergized, grounded and/or other protective measures shall be provided before work is started.
- Always follow lockout/tagout procedures, no matter the size or strength of the electricity in question.
- Do not use adaptors to defeat a standard grounding device.
- Use extension cords only on a temporary basis.
- Never unplug an appliance by pulling on the cord, pull on the plug.
- In case of an emergency, do not touch a victim that is still in contact with a power source, as you could electrocute yourself.
- In case of an electrical fire, do not use water on the fire.
- Vehicle clearance distances need to remain at 10 feet minimum.
- Proper illumination/lighting is required for all electrical situations.
- Protective shields, barriers, or insulating materials shall be provided if necessary.
- All portable ladders shall have non-conductive side rails.
- Conductive items of jewelry or clothing shall not be worn unless rendered non-conductive by properly covering.
- Deenergized equipment that has not been locked or tagged out shall be treated as energized.
- While working on, or near, exposed energized parts use proper safety procedures. (Lockout/Tagout, etc……)
- If employee is subject to handle long dimensional conductor objects (ducts or pipes), they must follow all safety work practices.

ELECTRICAL SAFETY

General Requirements

Qualified Personnel

- Only qualified personnel may alter electrical circuits, tools or other types of electrical equipment.
- Qualified personnel shall exercise caution when working on or near electrical equipment. Electrical equipment shall not be repaired unless the equipment can be locked out, tagged out and tested as to the effectiveness of the lockout/tagout. Persons working on such equipment must take extreme care.

Non Qualified Personnel

- Non Qualified Personnel shall be trained and familiar with electrically related safety practices.
- Should also be trained in safety work practices that pertain to their respective job assignments.
- Training on clearance distances. (10 feet)

Warnings and Labels

- Warning labels shall be permanently posted on electrical equipment for voltages over 480 volts AC/DC. An example of a sign is shown below:

DANGER
HIGH VOLTAGE
VOLTS
KEEP OUT

- The labels shall be plainly visible even when the doors are open or panels are removed from compartments. The labels shall indicate the voltages in the equipment and/or compartments.
- All electrical disconnects shall be legibly marked to indicate their purpose (what they control), unless located and arranged so the purpose is obvious. The service feeder and branch circuits shall also be legibly marked to indicate their purpose. The applicable equipment must be identified to cross reference with the disconnect, if it is not obvious. The markings shall be durable to withstand the service environment.

General Requirements (cont.)

Miscellaneous

- Circuits shall be locked out, tagged out and tested prior to performing work on any electrical circuit unless the work is such that the equipment must remain hot. Such hot work requires a skilled electrician and a hot work permit.
- Where doors are used for access to voltages from 500 to 1000 volts AC or DC, either door locks or interlocks shall be provided. Mechanical lockouts with a disconnecting means to prevent access until voltage is removed from the cubicle shall be in place on doors where over 1000 volts AC or DC are used.
- Purchases of switches, controllers, circuit breakers and the like shall be limited to only those types that can be mechanically locked out in the off positions to facilitate repairs and maintenance.
- All installations shall be as required by the National Electric Code for the area classification based on API Report 500B.

Table S-5 – Approach Distances for Qualified Employees

Voltage Range (phase to phase) --	**Minimum approach distance**
300V and less……	Avoid contact
Over 300V, not over 750V……	1ft. 0 in. (30.5 cm).
Over 750V, not over 2kV……..	1ft. 6 in. (46 cm).
Over 2kV, not over 15kV……..	2ft. 0 in. (61 cm).
Over 15kV, not over 37kV……	3ft. 0 in. (91 cm).
Over 37kV, not over 87.5kV…….	3ft. 6 in. (107 cm).
Over 87.5kV, not over 121kV…..	4ft. 0 in. (122 cm).
Over 121kV, not over 140kV……	4ft. 6 in. (137 cm).

ELECTRICAL SAFETY

Electrical Power Tools and Extension Cords

General Requirements

- Power tools shall be properly grounded by means of a three wire ground plug used in a properly grounded receptacle. Double insulated tools may be used provided the case has not been opened or damaged. Non-explosion proof electrically operated tools shall be operated only when the area is clear of flammable vapors and following the issuing of a hot work permit.
- Power Tools whether furnished by the employer/employee shall be maintained in a safe condition.
- Guards shall in place and operable at all times while the tool is in use.
- Proper PPE protection must be used when using Hand and Power Tools.
- Any Hand or Power Tools identified as unsafe/faulty will be removed or tagged out of service.
- Extension cords shall be of sufficient conductor size to carry the maximum current load for the equipment. All extension cords shall include a grounding conductor within the cable jacket and shall have proper receptacle ends for its intended purpose and area classification, i.e. Class I, Div. II.
- If a cord is damaged, it shall be replaced or repaired immediately. Cords shall not be spliced or patched with electrical tape.
- Extension cords are for temporary use. Install permanent wiring when use is not temporary.
- Care shall be taken to protect extension cords from damage. Possible sources of damage may include sharp edges, pinch points, vehicle damage, hot surfaces, chemicals or oils. Keep slack in flexible cords to prevent tension on electrical terminals.

ELECTRICAL SAFETY

Electrical Power Tools and Extension Cords (cont.)

- Adapter cords (pigtails) shall be provided with an explosion proof plug on one end and a three wire grounding type receptacle on the other end. Care shall be taken to prevent accidental disconnection of either plug. Prior to using a pigtail, the area must be free of flammable gases and a hot work permit shall be issued. Adapter cords must be disconnected from the power supply when not in use. Use the following procedure when using extension cords or pigtails:
  - Area shall be checked for flammable gases and a hot work permit issued.
  - Connect tool to extension cord, ensuring accidental disconnect is not possible.
  - Connect extension cord to adapter cord (pigtail), ensuring accidental disconnect is not possible.
  - Connect adapter cord (pigtail) to power supply, ensuring accidental disconnect is not possible.
  - Insure tripping hazard is not created by any of the cords.
  - To disconnect, reverse above steps.

Electrical Fuses

- High voltage circuits shall be de-energized using lockout/tagout and test procedures before attempting to replace fuses.
- Bridging of fuses, circumventing the normal operations of circuit breakers or replacing fuses with higher current rated or lower voltage fuses is prohibited. Trained personnel using a fuse puller shall remove cartridge fuses.
- Determine the reason that a fuse operated or circuit breaker tripped before replacing or resetting.

Static Electricity

Many operations or conditions can generate static electricity. Care must be taken to minimize hazards associated with static electrical discharge.

- Sand or bead blasting operations in areas where flammable gases may occur shall require the issuance of a hot work permit.
- Transfer of flammable or combustible liquids requires that the vessels be bonded or grounded together. Plastic containers shall not be used to sample or collect hydrocarbon liquids.
- Nylon wearing apparel shall not be worn in areas where flammable gases are likely to occur.

ELECTRICAL SAFETY

Classified Areas

All electrical equipment for hazardous locations shall conform to current NEC specifications for the classified area. Equipment installed in classified areas shall be legibly marked by the manufacturer or testing agency indicating in what areas it is approved for use.

Equipment and associated wiring approved as intrinsically safe shall be permitted in any classification so long as it is not capable of releasing sufficient electrical or thermal energy to cause ignition of any mixture in its most easily ignitable concentration.

The hazardous locations most likely encountered during typical jobs will be Group D (flammable liquids, vapors and gases) and:
Class I, Division I location - a location in which:

- Ignitable concentrations of flammable gases or vapors can exist under normal operating conditions; or
- Ignitable concentrations of such gases or vapors may exist frequently because of repair or maintenance operations or because of leakage; or
- Breakdown or faulty operation of equipment or processes might release ignitable concentrations of flammable gases or vapors and might also cause simultaneous failure of electric equipment.

Class I, Division II location - a location:

- In which volatile flammable liquids or flammable gases are handled, processed or used, but in which the liquids, vapor or gases will normally be confined within closed containers or closed systems from which they can escape only in case of accidental rupture or breakdown of such containers or systems, or in case of abnormal operation of equipment; or
- In which ignitable concentrations of gases or vapors are normally prevented by positive mechanical ventilation, and which might become hazardous through failure or abnormal operation of the ventilating equipment; or
- That is adjacent to a Class I, Division I location, and to which ignitable concentrations of gases or vapors might occasionally be communicated unless such communication is prevented by adequate positive-pressure ventilation from a source of clean air, and effective safeguards against ventilation failure are provided.

ELECTRICAL SAFETY

Procedures for Touching, Connecting or Disconnecting Power at Electrical Control Panels

- If you have to touch anything on an electrical control panel, first check it with a non-contact voltage tester.
- To disconnect the electrical power, always shut the control switch off first before shutting the main switch off.
- To connect the electrical power, always make sure that all control switches are off before engaging the master switch.
- When operating the control, or master switch, NEVER stand in front of the electrical panel. ALWAYS stand off to the side of the panel to operate the switch. NEVER look at the control panel. Should the panel explode, your eyes or body will not be in a direct line with the explosion.

Rubber Insulating Electrical Gloves

Rubber insulating electrical linemen's gloves shall be visually inspected before each use. At intervals not exceeding six months, these gloves shall be tested by the manufacturer, or their qualified agent, to determine their integrity or they may be replaced in lieu of testing.

If the gloves fail the tests, then they shall be replaced. The test results must be documented and retained on file. Also spare gloves must be tested every six months or identified as spare gloves and are not to be used until tested.

These gloves shall only be used by qualified personnel. Remember that PPE is only a last line of defense in case something goes wrong.

Documentation

DOCUMENT	WHERE KEPT	HOW LONG
Electrical Glove Tests	Office	3 years
Electrical Certifications for Certified Employees	Office	As needed

First Aid and Bloodborne Pathogens

Purpose

To provide the necessary training and equipment to adequately protect the health and welfare of the employees.

Responsibility

It is the responsibility of the contractor to:

- Ensure that first aid supplies are available and properly maintained in the event of an emergency.
- Ensure that all contract employees receive the proper training.
- Ensure proper equipment for prompt transportation of the injured person to a physician or hospital or a communication system for contacting ambulance service is provided.

Definitions

CPR – Cardiopulmonary Resuscitation – a method of reviving a person by a combination of rescue breathing (mouth-to-mouth) and external chest compressions.

Exposure Incident – A specific eye, mouth, mucous membrane or internal contact with blood or other infectious materials that results from the performance of an employee's duties.

First Aid – the immediate and temporary care given to the victim of an accident or sudden illness until the services of a physician can be obtained.

Emergency Response Phone Numbers

Emergency response phone numbers shall be posted in offices and other appropriate locations. These numbers shall include:

- Ambulance
- Fire Department
- Doctor/physician or clinic
- Sheriff
- Others as applicable to the specific site, such as air ambulance and emergency response teams

First Aid/CPR Training

All Power Service, Inc. employees involved in field operations shall be trained and certified in First Aid. The training shall consist of certification by the Bureau of Mines, American Red Cross, Medic-First or other recognized first aid providers. CPR training is not required by OSHA, but is recommended for certain jobs.

First Aid certifications are valid for three years. Thus, each employee will be certified in First Aid every three years.

Training must include the following:

- Hands on skills using mannequins or partners. Videos and workbooks should be used to supplement possible injuries or emergency situations
- Principles of responding to emergencies, illnesses or injuries likely in the facility, such as shock, poison inhalation, cuts, breaks, sprains, burns, insect or animal bites.
- Interaction with local emergency medical services
- Communication system for contacting necessary ambulance service shall be provided.
- Legal aspects of providing First Aid
- Scene safety and size-up
- Bandaging, splinting and moving victims
- Universal precautions for prevention of infection from bloodborne pathogens, hazards of body fluids, values of universal precautions, management of potentially infectious fluid spills and personal protective equipment
- First aid equipment provided
- Knowledge and proficiency assessment

First Aid and Bloodborne Pathogens

First Aid Supplies

First Aid Kits and supplies for immediate use shall be located in convenient accessible location. The contents of the large and small kit should contain items similar to those shown in Attachment 1. All First Aid Kits shall consist of appropriate items and stored in a weather proof container with individual sealed packages with each type of item.

Any time any material is used from the First Aid kit, it shall be replaced immediately. First Aid Kits must be checked before being sent out to each job to ensure that the expended items are replaced, and will be checked at least weekly on each job.

Other First Aid and Emergency Medical Equipment

Certain situations may require medical equipment that is not listed in the Power Service, Inc. First Aid kit. This equipment includes, but is not limited to, emergency showers and eyewash, respirators, and bio-hazard bags for bloodborne pathogens. This other equipment is discussed in other sections of this manual, but in all cases, the equipment must be properly signed (marked) and all employees must have proper training in the use of this equipment.

First Aid and Bloodborne Pathogens

Bloodborne Pathogens

Normal routine duties in Power Service, Inc. facilities do not require any employees to be exposed to bloodborne pathogens. It is possible that exposure could occur while rendering first aid to a fellow employee or other person. If provisions of handwashing facilities are not feasible, Power Service, Inc. will provide an appropriate antiseptic hand cleaner in conjunction with cloth/paper towels or antiseptic towelettes. Although the likelihood of exposure is small, all employees shall be trained in the proper precautions necessary to protect themselves and others from possible infection from bloodborne pathogens. Employees will be trained annually and at the time of initial assignment. All training records will include date, content, names, and job titles of persons attending the training. Power Service, Inc. will ensure that all records will be made available to all employees upon request. All medical records must have written consent of employee before released. Medical records will be kept for the duration of employment plus 30 years and training records will kept for a minimum of 3 years.
All employees will have access to our Exposure Control Plan. All records will be available upon request of employees, assistant secretaries & director for examination and copying. All requirements involving transfer of records will be followed.

Bloodborne Pathogens – Universal Precautions

Power Service, Inc. attempts to minimize employee exposure to blood or other infectious materials by keeping all equipment or environmental surfaces cleaned and decontaminated after contact with blood or other infectious materials. Specimens of blood or other potentially infectious materials will be put in leak proof bags for handling, storage and transport. These potentially infectious materials will be properly identified by a label and sign.

Example:

First Aid and Bloodborne Pathogens

Bloodborne Pathogens – Personal Protective Equipment

Power Service, Inc. will use appropriate personal protective equipment to protect employees from exposure to blood or other infectious materials. The exposure determination will be made without regards to the use of PPE. The required PPE includes a micro-shield (a mouthpiece to protect the mouth area in case CPR is necessary) and rubber gloves, which must be kept in each first aid kit. This level of personnel protection is appropriate for the type of exposure our workers will face. PPE is provided to every employee at no cost. PPE shall be used unless the employee temporarily declines usage under rare circumstances. Power Service, Inc. will ensure that appropriate PPE in the appropriate sizes is readily accessible. PPE will be cleaned, laundered and properly disposed. Power Service, Inc. shall replace and repair PPE as needed. Training will guide employees when extra protection is necessary.

Bloodborne Pathogens – Reporting

All first aid incidents must be reported as required as soon as possible. The contractor and contracting employer will determine what follow-up testing is required. The final report shall contain the following information:

- Name of First Aid providers
- Description of circumstances of the accident
- Determination of whether an "exposure incident" as defined in the standard has occurred.

Bloodborne Pathogens – Hepatitis B Vaccination

All First Aid providers assisting in any situation involving the presence of blood or other potentially infectious materials – regardless of whether or not an exposure incident occurs – must be offered the full immunization series no later than 24 hours after an incident. Even if the employee declines the immunization, the employee must document that on the appropriate form.

Bloodborne Pathogens - Documentation

All exposures are to be documented as required, but test results are to remain confidential. Follow-up exams will be made if the physician deems it necessary or requested by the employee.

First Aid and Bloodborne Pathogens

Documentation

DOCUMENT	WHERE KEPT	HOW LONG
Bloodborne Pathogen Training	Facility	Length of Employment
First Aid Kit Contents	All First Aid Kits	Always
First Aid/CPR Training	Facility	Length of Employment

Power Service, Inc. shall ensure that all records required by this section shall be made available upon request of employees, Assistant Secretary, and the Director for examination and copying. Medical records must have written consent of employee before released. Power Service, Inc. shall comply with the requirements involving transfer of records set forth in 29 CFR 1910.1020(h) if the company ceases to do business.

HBV IMMUNIZATION FORM

This form is used for documenting that a Hepatitis B Vaccine was offered to an employee of Power Service, Inc.. According to our company policy on bloodborne pathogens, any person who comes into contact with blood or other infectious materials on the job will be offered an HBV immunization at no cost to the employee. This form should be filled out upon offering this immunization. If the employee declines the immunization for any reason, the employee must sign this form stating that they were offered the immunization.

_____ , an employee of Power Service, Inc., was offered an HBV immunization after coming into contact with blood or other contagious diseases during working hours. The employee confirms this by signing below, stating that he/she accepted or declined the offer. The plant superintendent or his designee should also sign and date this form.

I have been offered the immunization and accept it. _____

I have been offered the immunization, but decline it. _____

_____ _____

Contractor Supervisor or designee Date

Attachment 1

POWER SERVICE, INC. FIRST AID KIT CONTENTS

Kit Contents	Small	Large
Adhesive Bandages	X	X
Adhesive Tape (1” small kit, 1” and 2” large)	X	X
Ammonia Inhalants		X
Antiseptic Wipes	X	X
Burn Cream (Water-Gel)	X	X
Disposable Gloves	X	X
Eye Solution (Dacriose or equivalent)		X
First Aid Cream (antibiotic)	X	X
Forceps (Tweezers) (Disposable)		X
Instant Cold Packs		X
Non-stick Pads	X	X
Sterile Sponges		X
Oval Eye Pads		X
Scissors (Disposable)		X
Triangle Bandages	X	X
Bandage Compress	X	X
Other		
Specialty Bandages (knuckle, finger, spot, etc.)	X	X
Sting relief (field use kits)	X	X
CPR Airway Mask		X
Snake Bite Kit		X

First Aid Kits will be checked before being sent out to each job and at least weekly on each job to ensure that the expended items are replaced.

Respiratory Protection

GENERAL

Purpose

The Respiratory Protection Policy is to ensure that all Power Service, Inc. employees are protected at all times against harmful levels of air contaminants and conditions of oxygen deficiency. This policy also provides a continuous training program to all affected employees. Power Service, Inc. will provide respirators where engineering controls do not reduce atmospheric contamination to acceptable levels; or where unavoidable spills, leaks or other emergencies may occur when such equipment is necessary to protect the health and ensure the safety of employees. The use of respiratory equipment is meant to be for short duration and not as a substitute for elimination of the hazards through engineering or administrative controls.

Scope

This standard shall apply to all respiratory protection equipment belonging to or being used by Power Service, Inc. personnel, contractors or subcontractors.

Responsibility

Power Service, Inc. (Trained Administrator) is responsible for ensuring that:

- All affected employees have received training and are qualified to use respirators prior to assigning them duties that require respiratory protection;
- The Administrator is knowledgeable of the complexity of the program.
- Proper respiratory equipment is provided, used and maintained;
- Training is provided and documented on at least an annual basis.
- An annual effectiveness evaluation of the respirator program is performed.
- Medical, respirators, and training are provided free to all employees.

Each employee is responsible for ensuring that:

- Respiratory protection is used in accordance with the training provided;
- Any malfunction of respiratory equipment is reported immediately to their supervisor.

Definitions

APR - Air Purifying Respirator - A respirator that purifies the ambient air, such as a cartridge respirator.

Hazardous Atmosphere - Any atmosphere which is oxygen deficient, oxygen rich or which contains a toxic or disease-producing contaminant that exceeds the permissible limit.

IDLH - Immediately Dangerous to Life or Health - Any atmosphere that poses an immediate hazard to life or produces immediate irreversible debilitating effects on health. IDLH per NIOSH: the maximum concentration from which, in the event of respirator failure, one could escape without experiencing any escape-impairing or irreversible health effects within 30 minutes. Includes oxygen deficient atmospheres.

MSHA - Mine Safety and Health Administration

NIOSH - National Institute for Occupational Safety and Health

Oxygen Deficient Atmosphere - Any atmosphere with less than 19.5% oxygen

PEL - Permissible Exposure Limit - exposure limit that cannot be exceeded without adverse effect.

PFT - Pulmonary Function Test

SAR - Supplied Air Respirator - A respirator that provides its own air, such as Scott Air Pak and Air Line respirators.

SCBA - Self Contained Breathing Apparatus - A respirator that provides its own air and that air is carried with the user, such as a Scott Air Pak.

TLV - Threshold Limit Value - A level of airborne concentrations of substances, below which it is believed that nearly all workers may be repeatedly exposed without adverse effect (see MSDSs for TLVs).

Respiratory Protection

Respirator Requirements

Respirators are required while performing any work that could cause, through breathing, impairment or irreversible health effects.

In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least one additional person shall be present. Communications (visual, voice or signal line) shall be maintained between both or all individuals present. Planning shall be such that one individual will be unaffected by any likely incident and have the proper rescue equipment and/or personnel to be able to assist the other(s) in case of an emergency.

Review the MSDS for the chemical/product being used. If a potentially hazardous operation is not on this chart, please contact Power Service, Inc. prior to starting work.

Respiratory Protection

RESPIRATORS FOR SELECTED OPERATIONS			
LOCATION/ OPERATION	CONTAMINANT	CONCENTRATION RANGE	MINIMUM RESPIRATORY PROTECTION
Confined Space Entry	O2 deficient O2 Enriched	<19.5% >23.5%	SCBA or Air Line Respirator
Responding to a Leak	Hydrogen Sulfide Sulfur Dioxide	>10 ppm >2 ppm	SCBA
Activity with exposure to	Benzene	>1 ppm	SCBA
Use of solvents and brush painting	Hydrocarbon base solvents	<1000 ppm >1000 ppm	Half-mask air purifying respirator with proper cartridge SCBA
Chemical spill, leak or emergency response	Various	Unknown	Depends on site assessment at location
Tank gauging	Hydrogen sulfide	>10 ppm	SCBA
Scale cleanup or similar activities with NORM present	Naturally Occurring Radioactive Material (NORM)	>30 picocuries	SCBA, Air Line Respirator or APR with a high efficiency particulate (HEPA) filter within limits
Spray Painting (Non-confined spaces)	Organic solvents	<1000 ppm >1000 ppm	Air purifying respirator w/ proper cartridge and paint spray pre-filter SCBA
Sandblasting	Silica Sand Lead	Any amount	Continuous flow air line w/ positive pressure Type CE Abrasive Blast respirator
Hydrocarbon or condensate (non-confined space exposure)	Organic Vapors	30 ppm - 1000 ppm >1000 ppm	Full mask APR SCBA or Air Line Respirator

Respirator Selection

Air Purifying Respirators (APR) consist of a half or full face piece and a detachable air purifying device. These devices selectively remove specific airborne contaminants (vapors, fumes and particulates). Do not use APRs in the following instances:

- For protection against gaseous materials that are extremely toxic or IDLH in small quantities (such as H_2S).
- For protection against harmful materials that cannot clearly be detected by odor or nose irritation. If an odor is detected with an APR, change the cartridge.
- For protection against materials that are not effectively stopped by the cartridge, regardless of the concentration.
- For protection against any gaseous material in concentrations that are highly irritating to the eyes.

Air Line Respirators consist of a half or full face mask, a breathing air regulator operating under positive pressure demand mode, an air line and air supply (manifold or pressurized tanks). Air line respirators must be equipped with a portable auxiliary air supply (five minute escape air bottle). Hose length may be up to 250'. Hose fittings must be incompatible with other gas systems in a facility to prevent inadvertent servicing of air line respirators with non-respirable gases or oxygen. Cascades must have a minimum operating pressure of 500 psig and be equipped with an operable low pressure alarm. Half facemasks are not appropriate for substances that are eye irritants.

Self Contained Breathing Apparatus (SCBA) consists of a full face piece and detachable regulator and hose connected to an air source either carried by the user or an air source from a distance connected by a flexible hose. SCBAs offer protection against most types and levels of airborne contaminants. SCBAs must be the "Pressure Demand" type.

Equipment selection should be based on the following:

- Nature of the hazard
- Extent of the hazard
- Work requirements and conditions
- Characteristics and limitations of respirators
- NIOSH or MSA approval

Fit-Testing and Eyewear

Employees will not use a respirator in a hazardous or potentially hazardous atmosphere unless they have successfully passed a Qualitative Fit Test (QLFT) or a Quantitative Fit Test (QNFT). The irritant smoke test is the preferred Qualitative method. Following the initial fit-test, workers who use negative pressure respirators will then be re-tested periodically or whenever physical aspects of the wearer change (i.e. significant weight gain or loss, injuries to the face in the seal area of the mask, etc.).

Immediately before use of any respirator, the employee shall ensure proper fit and functioning of the respirator. The manufacturer's instructions must be followed with each use of any respirator.

Under no conditions will any employee be fit-tested or allowed to use a respirator who has:

- Facial hair (including stubble) in the sealing area of the face piece;
- Facial configurations (injuries, scars, missing teeth, etc.) which prevent an adequate seal of the respirator to the wearer's face.

Affected employees who are required to wear glasses to perform normal duties will be provided a special full face piece that is manufactured to accommodate glasses inside the face piece. Full face respirators must not be worn over eyeglass templates. Contact lenses shall not be worn with full-face supplied air breathing apparatus when performing work for a certain duration. However, wearing contact lenses with full-face supplied air breathing apparatus during emergency situations is acceptable.

Medical Determination

Employees who wear respirators or may wear respirators in an emergency may have a pulmonary test. A physician, for medical determination that the employee can wear a respirator, will review this pulmonary test (if taken), along with a questionnaire filled out by the employee. Prior to the fit-testing a medical evaluation may be required. It must be confidential, during normal working hours, convenient, understandable and employee will be given a chance to discuss results with a PLHCP.

Breathing Air Quality and Cylinders

All breathing air shall meet at least the specifications for Type I, Grade D breathing air as defined by the Compressed Gas Association Commodity Specification G-7.1 1966 -- ANSI Z86.1 1973. The oxygen content of the air shall be between 19.5 and 23.5%. Additionally, the air should have a dew point of -20ºF or less to avoid freezing off in the regulators during use. Breathing air containers must be marked with a label stating, "Breathing Air". Any cylinder that does not meet this specification shall be refused and returned to the vendor.

110 cubic foot capacity breathing air cylinders shall be replaced when the pressure drops to 500 psig and 220 cubic foot capacity cylinders shall be replaced when the pressure drops to 300 psig.

Wherever corrosion is a problem, all breathing air quick coupling fittings are to be 316 stainless steel. All breathing air regulators are to be equipped with CGA 346 thread connectors to prevent accidental use of the wrong gas. Breathing air quick coupling fittings are to be unique to prevent usage of the air hoses or regulators on other systems.

Where air compressors are used to provide breathing air, their air intake ports must be located in areas free of contamination. If an oil-lubricated compressor is used to provide breathing air, it shall have a high temperature and carbon monoxide alarm.

All compressed gas cylinders must be hydrostatically tested on a periodic basis. Breathing air cylinders constructed of steel shall be hydrostatically tested every 5 years, aluminum tanks every 3 years. Cylinders should be tested on or before the date stamped on the cylinder. If a cylinder has not been pressure tested prior to the hydrostatic test date on the bottle, the cylinder should be taken out of service and depressurized (maintain slight positive pressure) until the test can be performed. Testing must be performed by a qualified company in accordance with DOT regulations (49 CFR Part 173.34 and CGA C-1: Methods for Hydrostatic Testing of Compressed Gas Cylinders.)

Defective equipment shall be removed from service until properly repaired, with a replacement unit provided.

A "Respirator Inspection Checklist" or similar documentation will be used to document inspections of both APRs and SARs.

Respiratory Protection

Equipment Storage

Respirators must be stored in a clean, sanitary and dry location where temperatures do not exceed 120ºF and in such a manner as to protect against sunlight, heat, extreme cold, excessive moisture, damaging chemicals and deformation. They should be kept free of distortion when stored. Manufacturing storage procedures will be followed. Respirators stored in vehicles will be kept in the manufacturer's case.

Equipment Inspection

Air Purifying Respirators - APRs - All APRs must be inspected routinely before and after each use, as well as periodically based on the manufacturer's instruction. Worn or broken parts should be replaced. The maker of the respirator must manufacture all replacement parts.

Supplied Air Respirators - SARs (SCBAs and Air Line) - All SARs, whether in regular use or being maintained for emergency use, must be inspected at least on a monthly basis and after each use by the wearer or an assigned, qualified person. A record of these inspections must be kept at the location where the respirator is normally stored. A tag may be affixed to each SAR or a form attached inside the storage cabinet so that the date of the monthly inspection and initials of the inspector can be entered.

The SAR inspection shall include a check of air pressure to assure that the cylinder is fully charged and a check to assure that the regulator and warning devices are functioning properly. The condition of the face piece, valves, headbands, shoulder straps and all connecting devices shall be checked. Connecting hoses should be stretched to check for breaks and leaks. Problems shall be immediately reported to supervisors.

Power Service, Inc. Employees do not enter into IDLH Atmospheres.

Training

Each employee required to use a respirator will be trained on the following:

- Why a respirator is necessary
- Limitations of a respirator
- How to use a respirator (inspections, put on and remove)
- Maintenance of respirators
- General requirements of the regulation (covered in this procedure)

This training will be required at least annually, and whenever deemed necessary by Power Service, Inc. based on actions of the employees.

Program Evaluation

Periodic evaluation of the effectiveness of the program is essential to ensure that persons are being provided with adequate respiratory protection. The effectiveness of the respirator program shall be evaluated at least annually by Power Service, Inc. and action shall be taken to correct defects in the program.

Wearer Acceptance - Respirator wearers will be consulted periodically and encouraged to report their acceptance of wearing respirators. Factors that might affect the acceptance of respirators include: comfort, resistance to breathing, fatigue, interference with vision, interference with communications, restrictions of movement, interference with job performance, and confidence in the effectiveness of the respirator to provide adequate protection.

Inspection and Evaluation of Respirator Program Operation - Random periodic inspections shall be conducted to ensure that

- proper types of respirators are selected,
- respirator wearers are trained properly,
- correct respirators are issued and used,
- respirators are worn, maintained and stored properly,
- respirators are inspected properly and
- respiratory hazards are monitored.

Action shall be taken to correct any defects found in the Respiratory Protection Program. The findings of the respiratory protection program evaluation shall be documented, and this documentation shall list plans to correct faults in the program and target dates for the implementation of the plans.

Respiratory Protection

Documentation

DOCUMENT	WHERE KEPT	HOW LONG
Fit Test Records	Facility	Length of Employment
Respirator Training	Facility	5 Years
Respirator Inspections	Facility	Last 2 inspections

Hydrogen Sulfide

GENERAL

Introduction

This procedure establishes employee safety requirements for H_2S facilities.

H_2S Information

H_2S is a highly toxic, colorless gas often associated with oil and gas production. It is highly corrosive, flammable, heavier than air, and at low concentrations it has the odor of rotten eggs. At concentrations above 100 ppm, H_2S paralyzes the sense of smell. Long term, low-level exposure has the same effect, making sense of smell an unsafe detector.

H_2S enters the body through inhalation, and, when enough builds up in the bloodstream, it can be lethal. In severe exposure cases, H_2S paralyzes nerve centers in the brain which control breathing, killing by asphyxiation.

SO_2 Information

Sulfur Dioxide (SO_2) is a colorless, transparent and non-flammable gas. SO_2 is produced by burning H_2S or other sulfur compounds. SO_2, like H_2S, is heavier than air.

Because SO_2 is extremely irritating to the eyes and mucous membranes of the upper respiratory tract, it is detectable with ordinary senses. However, it is even more toxic than H_2S and even low concentrations are dangerous.

Responsibility

Power Service, Inc. is responsible for ensuring that:

- Affected employees are provided the proper training and personal protective equipment

EMPLOYEE SAFETY - PROCEDURE

General

This procedure establishes safety guidelines and emergency actions to be followed in the event of an accidental release of H_2S or SO_2.

Exposure Levels

Employees shall not be exposed to H_2S levels above those listed below (unless they have the proper personal protective equipment):

- 10 ppm - permissible exposure limit (PEL) - 8 hour TWA
- 15 ppm - short term exposure limit (STEL) - 15 minutes four times a day with one hour between each exposure

Employees shall not be exposed to SO_2 levels above those listed below (unless they have the proper personal protective equipment):

- 2 ppm - permissible exposure limit (PEL) - 8 hour TWA
- 5 ppm - short term exposure limit (STEL) - 15 minutes four times a day with one hour between each exposure

PPE Required

Personal protective equipment is required for employees and contractors working at an H_2S facility. If the levels of H_2S may be above 10 ppm, each employee will have a personal monitor or there will be an area detector for H_2S. If employees evacuate upon hearing an alarm, no other PPE is necessary. If employees must continue working with greater than 10 ppm of H_2S or 2 ppm of SO_2, a self-contained breathing apparatus or cascade system is required. The use of a buddy system is always suggested, but is strongly suggested if levels are above 100 ppm of H_2S or SO_2.

H_2S Monitors

Use NIOSH (National Institute for Occupational Safety and Health) approved electronic type portable monitors to measure H_2S levels. Employees at an H2S site shall have an H2S monitor that will alert them when concentrations reach 10 ppm (unless an area monitor is sufficient and available).

Wind Socks

Wind direction indicators should be installed at locations where the 100 ppm radius of exposure exceeds 50 feet. Locate them so they are visible to anyone entering the area. Always look for the wind socks in case of an H_2S release and travel upwind if possible.

Hydrogen Sulfide

Training

Personnel with a potential exposure to H_2S shall be trained at least annually on:

- Physical and chemical properties of H_2S.
- Safety precautions as stated in the state regulations.
- Methods of detection.
- Contingency planning.
- Operation of safety equipment and life support systems.
- Effects of H_2S on the metal components of the system.

Signs

At all H_2S facilities, a "Caution, Poison Gas" sign (in yellow and black) should be installed within the facility. At all facilities with an H_2S concentration over 300 ppm, a "Danger - Poison Gas" sign (in red, white and black) should be installed within the facility, as well as the caution sign for 10 ppm concentrations. The sign requirements only cover facilities such as compressor stations, tank batteries, meter stations, gas plants, treating facilities or other similar sites.

Documentation

DOCUMENT	WHERE KEPT	HOW LONG
H_2S Training	Facility	5 years

Training Form

DATE: _____ LOCATION: _____

SUBJECT OF TRAINING (Circle one or more below or describe): _____

_____

- ❑ Prevention of Back Injuries
- ❑ Bloodborne Pathogens
- ❑ CPR
- ❑ Confined Space Entry
- ❑ DOT Drug Plan - Supervisors
- ❑ Defensive Driving
- ❑ DOT HM 126
- ❑ PSM - General Overview
- ❑ Electrical Safety
- ❑ Emergency Action Plan
- ❑ Excavation
- ❑ Fall Protection
- ❑ Fire Protection
- ❑ First Aid
- ❑ Respiratory Protection
- ❑ Hot Work Permit
- ❑ Hazwoper Operations Level
- ❑ Hazard Communication
- ❑ Incident Commander
- ❑ Incident Investigation
- ❑ SPCC
- ❑ Lockout/Tagout
- ❑ Noise and Hearing Protection
- ❑ NORM
- ❑ Personal Protective Equipment

DURATION OF TRAINING (Hours) - _____

METHOD OF TRAINING (Video, Instructor, Computer, Etc.) - _____

If Instructor, Instructor's Name - _____

WAS TEST TAKEN (If yes, attach copy of exam) - _____

PERSONS ATTENDING TRAINING (Attachment with names and signatures is adequate)

Name (print)	Social Security #	Work Location	Signature

Safety Meeting Form

Safety Meeting Documentation		
☐ Scheduled Safety Meeting	☐ Tailgate Safety Meeting	
Location -	Date -	
Primary Safety Topic –	Person Leading Discussion – Company -	
Unsafe Conditions		
New Hazards Reported	Old Hazards Repaired	Old Hazards Not Repaired
Safety Topics Discussed (New or Old Items)		
Names of Attendees		
Next Meeting Date -	Person Responsible -	
Safety Topic -		

Safe Work Permit

Name	ID #	Date
Work Requested:		Area
		Spec.
Requested By:	Request Approved:	Account Code

SAFETY REQUIREMENTS		
Depressure		
Drain		
Purge or Flush Clean		
Vehicle Entry Permit		
Breathing Air Masks		
Protective Clothing		
Work Permit	Safe	Hot

Description of Work Performed:

Note - Does this work trigger PSM Management of change?
☐ Yes ☐ No

Possible Exposure To:	
Work Completed as Requested	
Operator	Date
Manager	Date

Equipment Used

Work Completed
Date:
By:

Time From AM PM	To AM PM	Area	Received By:
Work Description			Issue ☐ 1 ☐ 2

TYPE OF PERMIT	SPECIAL PREPARATIONS	
☐ Safe Work Permit	☐ Oxygen Content Checked	☐ Nitrogen Purged
☐ Hot Work Permit	☐ Explosion Meter Checked	☐ Decontaminated
☐ Vessel Entry (see CSE permit)	☐ Toxic Gas Checked	☐ Air Mover in Service
☐ Vehicle Entry Permit	☐ Freed of Hazardous Chemicals	☐ Blinds installed and tagged
☐ Hazardous Work Permit	☐ Area Barricaded	☐ Deposits
List Hazard:	☐ Lockout/Tagout Procedure Complete	☐ Taken Precaution against Iron Sulfide
For confined space entry, appropriate rescue service must be available. Use CSE permit for more information.	☐ Equipment Drained and Depressured	☐ Circuit Breaker Locked
	☐ Fuel Gas Purged	☐ Other

SAFETY EQUIPMENT REQUIRED		
☐ Asbestos Gloves	☐ Fire Shield	☐ Wrist Line
☐ Leather Gloves	☐ Chemical Goggles	☐ Life Line
☐ Rubber Gloves	☐ Chipping Goggles	☐ Vehicle Watchman
☐ Rubber Coat	☐ Particle Mask	☐ Man on Standby
☐ Rubber Boots	☐ Gas Mask	☐ Scaffolding
☐ Acid Suit	☐ Breathing Equipment	☐ Fire Extinguisher
☐ Face Shield		☐ Light Water Supply
☐ Other		

Comments:

For all hot work, area must be free of flammable/combustible materials prior to start of work Permit is only valid until end of shift.

Gas Test	Oxygen Test	Toxic Gas Test
% of LEL	%	PPM
Taken By	Taken By	Taken By

Signed (operator)			Signed (manager)	
Job Status	☐ Complete	☐ Incomplete	Time AM PM	Operator

A. Space Description

Start Date _____

Start Time _____a.m./p.m.

Scheduled Expiration_____a.m./p.m.

Confine Space Entry Permit

A. Space Description

Type of confined space _____
ID #_____
Location_____
Entry Purpose_____
Hazard Identification_____

B. Personnel

The following person(s) trained in confined space procedures are assigned work in connection with a confined space entry, in accordance with this permit:

Entrants: Name (Printed) Name (Printed)

_____

_____

Attendants: Name (Printed) Name (Printed)

_____

_____

C. Type of Entry

Permit-Required Confined Space

Alternate entry

a. _____All employees trained
b. _____Atmospheric hazard (identify) _____
c. _____Atmospheric data available
d. _____Ventilation and monitoring without entry
e. _____Space atmosphere tested/no hazardous atmosphere
f. _____Continuous ventilation during entry
g. _____Continuous monitoring during entry

Reclassify space from Permit to Non-permit

a. _____No atmospheric hazard present
b. _____All other hazards eliminated before entry (list)_____
_____

_____
Signature of Entry Supervisor

D. Safety Requirements

	Yes	No	Date/Time	Checked By
Area secured_____	____	____	_____	_____
Piping disconnected_____	____	____	_____	_____
Energy sources and mechanical hazards locked/tagged out____	____	____	_____	_____
Cleaning (flushing/washing) done_____	____	____	_____	_____
Required purging or venting done_____	____	____	_____	_____
Sources of ignition controlled_____	____	____	_____	_____
Cutting, welding permit obtained_____	____	____	_____	_____
Use of hazardous or flammable materials approved_____	____	____	_____	_____
Other_____	____	____	_____	_____

E. Tests

Test must be taken in the following order: Test to be Taken	Limit	Test Results					Equip. Name	Serial No.	Cal. Date	Initials
% of OXYGEN (O_2)	19.5-23.5%									
% of LEL flammable concentrations	<10%									
CARBON MONOXIDE (CO)	<25 ppm									
HYDROGEN SULFIDE (H_2S)	<10 ppm									
OTHER										
TIME										

Note: Continuous/periodic tests shall be established before starting job. Any questions pertaining to test requirements, contact your supervisor, safety officer, or EHS department. Note hazardous conditions under Section A, #5.

F. Personal Protective and Safety Equipment

☐ Retrieval line/hoist	☐ Hard hat	☐ Safety Harness
☐ Hearing Protection	☐ Eye/foot protection	☐ Fire extinguisher
☐ GFI in Wet Environment	☐ Gas/oxygen/toxicity detectors	☐ Ventilation Equipment

☐ Respirators (specify) - _____

☐ Protective Clothing (specify) - _____

☐ Gloves (specify) - _____

☐ Communication Equipment (specify) - _____

☐ Others (specify) - _____

G. Entry Procedures

☐ Attendant understands duties

☐ Attendant has communication to rescue personnel

☐ Rescue plan is in place

☐ Entrant understands exit requirements

☐ Entrant has lifeline

☐ Pre-Entry Briefing: I/We have reviewed this permit and are aware of the hazards and precautions necessary for performing the designated work in the confined space authorized by this permit: *(Signed by all entrants & attendants)*

Name (signature) Name (signature)

_____ _____

_____ _____

Certification: I certify that all existing and potential hazards have been evaluated, necessary protective measures have been taken, and acceptable environmental conditions exist:

Printed Name: _____ Signed: _____ Date: _____
(Entry Supervisor)

Emergency Phone Numbers: **911** Other: Rescue Team _____ Police _____ Fire_____

Permit Cancelled/Closed at: _____ on: _____ by: _____
(Entry Supervisor)

Comments:
_____

A Job Safety Analysis (JSA) is a method that can be used to identify, analyze and record **1)** the steps involved in performing a specific job, **2)** the existing or potential safety and health hazards associated with each step, and **3)** the recommended action(s)/procedure(s) that will eliminate or reduce these hazards and risk of a workplace injury or illness.

Hazard Types:

The following hazards should be considered when completing a JSA.

- Impact with a falling or flying object.
- Penetration of sharp objects.
- Caught in or between a stationary/moving object.
- Falls from an elevated work platform, ladders or stairs.
- Excessive lifting, twisting, pushing, pulling, reaching, or bending.
- Exposure to vibrating power tools, excessive noise, cold or heat, or harmful levels of gases, vapors, liquids, fumes, or dust.
- Repetitive motion.
- Electrical hazards.
- Light (optical) radiation (i.e. welding operations, etc.).
- Water (potential for drowning or fungal infections caused by wetness).

Conducting the analysis:

1. Select jobs with the highest risk for a workplace injury or illness.

2. Select an experienced employee who is willing to be observed. Involve the employee and his/her immediate supervisor in the process.

3. Identify and record each step necessary to accomplish the task. Use an action verb (i.e. pick up, turn on) to describe each step.

4. Identify all actual or potential safety and health hazards associated with each task.

5. Determine and record the recommended action(s) or procedure(s) for performing each step that will eliminate or reduce the hazard (i.e. engineering changes, job rotation , PPE, etc.)

Note: For further information about how to complete a JSA, refer to OSHA's Publication #3071.

JOB SAFETY ANALYSIS FORM

DATE:	**TITLE OF PERSON WHO DOES JOB:**	**SUPERVISOR:**	**ANALYSIS PERFORMED BY:**
ORGANIZATION:	**LOCATION:**	**DEPARTMENT:**	**REVIEWED BY:**
SEQUENCE OF BASIC JOB STEPS:	**POTENTIAL HAZARDS:**	**RECOMMENDED ACTION OR PROCEDURE:**	

SHORT SERVICE EMPLOYEE (SSE) POLICY

The purpose of the "Short Service Employee" (SSE) policy is to insure all new employees with less than six months service have their initial job training and safety orientation, are easily identified by visual means, and are assigned a mentor to welcome and acclimate them to the workplace.

Our new employee orientation program will serve as the initial orientation into the SSE. Before any new employee enters the workforce they are required to go through our new employee orientation program. At this time they will be informed of the SSE policies and requirements of adhering to the program.

All SSEs will be required to wear a hard hat distinguished by an orange reflective SSE sticker. The employee will wear this hardhat and sticker until their six months of service has lapsed and they have demonstrated safe work behavior and working knowledge of the tasks assigned to them. In order to be removed from the SSE these two prerequisites must be met.

Upon introduction to the worksite the SSE will be assigned a Mentor to assist and guide the SSE in becoming familiar with all proper work practices and safety requirements expected of them. The Mentor assigned will have at least one year experience and be readily available to the SSE. The Mentor will provide supervision and guidance. They will make sure the SSE does not perform any tasks that they are not trained to do. If the SSE must perform a task they are not trained to do the Mentor will take them through the task.

At the end of the six month period the SSE's performance will be reviewed by the Mentor, SSE's supervisor and a representative from the safety department. At this time a decision will be make whether the SSE has met the conditions of the program.