Power Plant Services

"The Turnkey Solution"

Safety and Health Manual

Rev: 082115

Responsible Safety Officer:

Corp. EHS Manager

William Guzman, Corporate EHS Manager

December 15, 2015

Date

Table of Contents

Chapter 1 - Code of Safe Practices

1.1 Code of Safe Practices

The following Safe Practices will assist you in emphasizing safety first as part of your work habits. This is a sample list to help identify your responsibility for safety.

a. I will immediately report to my supervisor all accidents or near misses, and injuries, no matter how slight, that occur on the job.

b. I will cooperate with and assist in investigation of accidents to identify the causes and to prevent recurrence.

c. I will promptly report all unsafe acts, practices, or conditions that I observe.

d. I will observe safe work procedures during the course of my work activities.

e. I will keep my work areas clean and orderly at all times.

f. I will avoid engaging in any horseplay and avoid distracting others.

g. I will obey all safety rules and follow published work instructions.

h. I will wear personal protective equipment when working in hazardous areas, and/or as required by my supervisor.

i. I will inspect all equipment prior to use and report any unsafe conditions.

j. I will submit any suggestions for accident prevention, which may assist in improved working conditions or work practices to my immediate superior.

k. I will smoke in authorized locations only.

l. I will not bring onto the job, have in my possession or in my car, any weapons or ammunition of any kind.

m. I will not have in my possession, use, or introduce any kind of intoxicating liquor or illegal drugs on any customer's property or work area or facility, or I will accept possible discharge for these illegal actions.

n. I will not come to work under the influence of intoxicating liquor or illegal drugs, and realize that I will not be allowed to start work and may be immediately discharged for this action.

I HAVE READ AND UNDERSTAND THE ABOVE ITEMS AND REALIZE THAT FAILURE TO FOLLOW THESE RULES MAY BE GROUNDS FOR DISMISSAL.

1.2 Employee Acknowledgement Form

CODE OF SAFE PRACTICES

I _____ (PRINT), hereby acknowledge that I have received, read, and understand the 'Code of Safe Practices' from Alin Machining Company dba Power Plant Services .

I agree to conform to all practices, safety rules, and regulations relating to safe work performance.

I understand that my failure to follow these safety procedures will result in disciplinary action up to and including discharge.

I further understand that:

a. It is my responsibility to report all unsafe conditions or actions to my supervisor or other management personnel in order to minimize the potential of injury to my fellow workers.

b. I am encouraged to inform my immediate superior of any hazards on the job without fear or reprisal, and that should my assistance create any such action or related intimidation, that I am encouraged to contact the Safety Director or management by phone or mail.

(Signature of Employee)	Date
(Signature of Supervisor)	Date

Chapter 2 - Asbestos Awareness

2.1 Asbestos Awareness Training

Alin Machining Company dba Power Plant Services will provide Asbestos Awareness Training for all employees who work in areas that contain or may contain Asbestos or Asbestos Hazards. The Asbestos Awareness Training is required for employees whose work activities may contact Asbestos Containing Material (ACM) or Presumed Asbestos Containing Material (PACM) but do not disturb the ACM or PACM during their work activities. All training is documented and the files are kept with the ‘‘Safety Director’’.

2.2 Possible Exposure to Asbestos

Asbestos materials are used in the manufacture of heat-resistant clothing, automotive brake and clutch linings, and a variety of building materials including insulation, soundproofing, floor tiles, roofing felts, ceiling tiles, asbestos-cement pipe and sheet, and fire-resistant drywall. Asbestos is also present in pipe and boiler insulation materials, pipeline wrap and in sprayed-on materials located on beams, in crawlspaces, and between walls.

2.3 Asbestos Defined

The definition of Asbestos is divided into two parts, friable and non-friable.

Friable:

Friable means that the material can be crumbled with hand pressure and is therefore likely to emit fibers. The fibrous or fluffy sprayed-on materials used for fireproofing, insulation, or sound proofing are considered to be friable, and they readily release airborne fibers if disturbed.

Non-friable:

Materials such as vinyl-asbestos floor tile or roofing felts are considered non-friable and generally do not emit airborne fibers unless subjected to sanding or sawing operations. Asbestos-cement pipe or sheet can emit airborne fibers if the materials are cut, abraded or sawed, or if they are broken during demolition operations.

2.4 Possible Ill Health Effects of Asbestos

Exposure to asbestos has been shown to cause lung cancer, asbestosis, mesothelioma, and cancer of the stomach and colon. Alin Machining Company dba Power Plant Services takes all preventative measures to reduce this risk to its employee’s.

2.5 Warning Signs And Labels

Signs and labels shall identify the material which is present, its location, and appropriate work practices which, if followed, will ensure that Asbestos Containing Material (ACM) and/or Presumed Asbestos Containing Material (PACM) will not be disturbed. Alin Machining Company dba Power Plant Services shall ensure that employees working in and adjacent to regulated areas comprehend the warning signs.

2.6 When Working On Multi-Contractor Worksites

All employees shall be protected from any risk of exposure. If we are ever on a job-site where there are other contractors or sub-contractors working, Alin Machining Company dba Power Plant Services will do its due diligence in order to keep all of our employees safe from asbestos exposure. If at any time you as an employee notice any type of asbestos or possible asbestos danger or exposure, immediately notify the site foreman.

If employees working immediately adjacent to a Class I asbestos jobs are exposed to asbestos due to the inadequate containment of such job, their employer shall either remove the employees from the area until the enclosure breach is repaired; or perform an initial exposure assessment pursuant to 1926.1101(f).

Chapter 3 - Assured Equipment Grounding Conductor Program – Ground Fault Circuit Interrupter - GFCI

3.1 Requirements for All Equipment

All of Alin Machining Company dba Power Plant Services ’s equipment, tools and procedures will only use and operate Ground Fault Circuit Interrupters.

3.2 Assured Equipment Grounding Conductor Program

Alin Machining Company dba Power Plant Services has establish and implement an assured equipment grounding conductor program on construction sites covering all cord sets, receptacles which are not a part of the building or structure, and equipment connected by cord and plug which are available for use or used by employees. This program shall consist of the following minimum requirements:

1. A written description of this program, including the specific procedures adopted by Alin Machining Company dba Power Plant Services , is available at the jobsite for inspection and copying by the Safety Director and any affected employee.

2. Alin Machining Company dba Power Plant Services has designate one or more **‘competent persons’**, as defined by OSHA Standard 1926.32(f), to implement this program. They include:

    1. The Competent Person

    2. _____

3.3 Inspection

Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day's use for external defects, such as deformed or missing pins or insulation damage, and for indications of possible internal damage. Equipment found damaged or defective shall not be used until repaired. All damaged equipment will be removed from service and attached with a ‘DO NOT USE’ tag.

3.4 Testing

The following tests shall be performed on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord- and plug-connected equipment required to be grounded:

1. All equipment grounding conductors shall be tested for continuity and shall be electrically continuous.

2. Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.

All required tests shall be performed:

- Before first use;
- Before equipment is returned to service following any repairs;
- Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over); and
- At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months.

Tests performed as required in section 3.4 shall be recorded. This test record shall identify each receptacle, cord set, and cord- and plug-connected equipment that passed the test and shall indicate the last date it was tested or the interval for which it was tested. This record shall be kept by means of logs, color coding, or other effective means and is maintained until replaced by a more current record. The record is available on the jobsite for inspection by the Safety Director and any affected employee.

3.5 Restrictions

Alin Machining Company dba Power Plant Services will not make available to or permit the use of any equipment by employees which has not met the requirements of this program.

Chapter 4 - Benzene

Benzene (CAS Registry No. 71-43-2) means liquefied or gaseous benzene. It includes benzene contained in liquid mixtures and the benzene vapors released by these liquids. It does not include trace amounts of unreacted benzene contained in solid materials.

4.1 Methods of Compliance

When any exposure exceeds the PEL (Permissible Exposure Limit), Alin Machining Company dba Power Plant Services shall establish and implement a written program to reduce employee exposure to or below the PEL primarily by means of engineering and work practice controls.

This program includes a schedule for the development and implementation of Alin Machining Company dba Power Plant Services 's engineering and work practice controls. These plans shall be reviewed and revised as appropriate based on the most recent exposure monitoring data, to reflect the current status of the program.

Schedule for Engineering and Work Practices Control

Control	Hazard	Reason(s)
1.		
2.		
3.		
4.		

Written compliance programs will be furnished upon request for examination and copying to the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, the Director of the National Institute for Occupational Safety and Health, any affected employees and Alin Machining Company dba Power Plant Services 's Responsible Safety Officer – Safety Director.

4.2 Respiratory Protection

For all employees whose use of respirators is required by this program, Alin Machining Company dba Power Plant Services will provide them with respirators that compliant with the requirements. Respirators must be used during:

- Periods necessary to install or implement feasible engineering and work-practice controls.
- Work operations for which Alin Machining Company dba Power Plant Services establishes that compliance with either the TWA or STEL through the use of engineering and work-practice controls is not feasible;
- for example, some maintenance and repair activities, or other operations for which engineering and work-practice controls are infeasible because

exposures are intermittent and limited in duration.

- Work operations for which feasible engineering and work- practice controls are not yet sufficient to reduce employee exposure to or below the PELs.

4.3 Respirator Selection

Alin Machining Company dba Power Plant Services must select the appropriate respirator from Table 1 of this section. Any employee who cannot use a negative-pressure respirator must be allowed to use a respirator with less breathing resistance, such as a powered air-purifying respirator or supplied-air respirator.

TABLE 1.—RESPIRATORY PROTECTION FOR BENZENE

Airborne concentration of benzene or condition of use	Respirator type
(a) Less than or equal to 10 ppm	(1) Half-mask air-purifying respirator with organic vapor cartridge.
(b) Less than or equal to 50 ppm	(1) Full facepiece respirator with organic vapor cartridges. (1) Full facepiece gas mask with chin style canister.[1]
(c) Less than or equal to 100 ppm	(1) Full facepiece powered air-purifying respirator with organic vapor canister.[1]
(d) Less than or equal to 1,000 ppm	(1) Supplied air respirator with full facepiece in positive-pressure mode.
(e) Greater than 1,000 ppm or unknown concentration.	(1) Self-contained breathing apparatus with full facepiece in positive pressure mode. (2) Full facepiece positive-pressure supplied-air respirator with auxiliary self-contained air supply.
(f) Escape	(1) Any organic vapor gas mask; or (2) Any self-contained breathing apparatus with full facepiece.

TABLE 1.—RESPIRATORY PROTECTION FOR BENZENE—Continued

Airborne concentration of benzene or condition of use	Respirator type
(g) Firefighting	(1) Full facepiece self-contained breathing apparatus in positive pressure mode.

[1] Canisters must have a minimum service life of four (4) hours when tested at 150 ppm benzene, at a flow rate of 64 LPM, 25 deg. C, and 85% relative humidity for non-powered air purifying respirators. The flow rate shall be 115 LPM and 170 LPM respectively for tight fitting and loose fitting powered air-purifying respirators.

Alin Machining Company dba Power Plant Services will implement a respiratory protection program in accordance with 29 CFR 1910.134

4.4 Protective Clothing and Equipment

Personal protective clothing and equipment shall be worn where appropriate to prevent eye contact and limit dermal exposure to liquid benzene. Protective clothing and equipment shall be provided by Alin Machining Company dba Power Plant Services at no cost to the employee and Alin Machining Company dba Power Plant Services shall assure its use where appropriate. Eye and face protection shall meet the requirements of 29 CFR 1910.133.

4.5 Medical Surveillance

Alin Machining Company dba Power Plant Services shall make available a medical

surveillance program for:

- employees who are or may be exposed to benzene at or above the action level 30 or more days per year;
- for employees who are or may be exposed to benzene at or above the PELs 10 or more days per year;
- for employees who have been exposed to more than 10 ppm of benzene for 30 or more days in a year prior to the effective date of this program when employed by Alin Machining Company dba Power Plant Services .

Alin Machining Company dba Power Plant Services shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician and that all laboratory tests are conducted by an accredited laboratory.

Alin Machining Company dba Power Plant Services shall assure that persons other than licensed physicians who administer the pulmonary function testing required by this section shall complete a training course in spirometry sponsored by an appropriate governmental, academic or professional institution.

Alin Machining Company dba Power Plant Services shall assure that all examinations and procedures are provided without cost to the employee and at a reasonable time and place.

4.6 Schedule For The Development, Implementation & How Plan Is Kept Current

The written program shall include the schedule for developing and implementing or engineering and work practice controls. Plan should be reviewed and revised to reflect the most recent exposure monitoring data. Our plan will be kept up to date and reviewed at least every 6 months or after each exposure to Benzene.

4.7 Access To The Written Plans

The Assistant Secretary, the Director, affected employees and designated employee representatives shall have access to the written plans.

4.8 Guidelines To Be Used For Respiratory Selection

Respirators shall be selected according to airborne concentrations of benzene or condition of use. These shall be approved by NIOSH. A respiratory protection program shall be established in accordance with 29 CFR 1910.134.

4.9 Medical Surveillance

For employees who are or may be exposed to benzene at or above the action level 30 or more days per year-above the PEL 20 or more days-for employees who have been exposed to more than 10 PPM of benzene for 30 or more days in a yr. prior to effective date.

Chapter 5 - Benzene Awareness

5.1 Possible Exposure Locations

Alin Machining Company dba Power Plant Services will advise employees to all facility areas and operations where exposure to benzene could occur. Common operations and locations in which exposures to employees are likely to occur include:

- Petroleum Refining Sites;
- Tank Gauging; and
- Field Maintenance.

All Employees will be made aware of any site specific contingency plans prior to being allowed onto the facilities. Additional operations and locations in which **high** exposures to benzene are more than likely to be encountered are:

- the primary production and utilization of benzene; and
- transfer of benzene.

5.2 Physical Characteristics

5.2.a Color / Odor and Solubility

Benzene is a clear, colorless liquid with a distinctive sweet odor and is solubility in water and other liquids.

5.2.b Toxicity / Flammability and By Products

Benzene is primarily an inhalation hazard. Aspiration of small amounts of liquid benzene immediately causes pulmonary edema and hemorrhage of pulmonary tissue. High concentrations are irritating to the eyes and the mucous membranes of the nose, and respiratory tract.

There can be absorption through the skin and direct skin contact with benzene may cause erythema. Benzene may be more readily absorbed if it is present in a mixture or as a contaminant in solvents which are readily absorbed.

Benzene is a flammable liquid. Its vapors can form explosive mixtures. Hazardous decomposition by-products include toxic gases and vapors (such as carbon monoxide).

5.2.c Health Hazards

Benzene will adversely affect your health if it is inhaled, if it comes in contact with a person’s skin or eyes. Benzene is also quite harmful if it is ingested or swallowed.

5.2.d Short-term (acute) Overexposure

If employees are overexposed to high concentrations of benzene, well above the levels where its odor is first recognizable, you may feel breathless, irritable, euphoric, or giddy; you may experience irritation in eyes, nose, and respiratory tract. You may develop a headache; feel dizzy, nauseated, or intoxicated. Severe exposures may lead to

convulsions and loss of consciousness.

5.2.e Long-term (chronic) Exposure

Repeated or prolonged exposure to benzene, even at relatively low concentrations, may result in various blood disorders, ranging from anemia to leukemia, an irreversible, fatal disease. Many blood disorders associated with benzene exposure may occur without symptoms.

5.3 Protective Clothing and Equipment

5.3.a Respirators

Respirators are required for those operations in which engineering controls or work practice controls are not feasible to reduce exposure to the permissible level. However, where Alin Machining Company dba Power Plant Services can document that benzene is present in the workplace less than 30 days a year, respirators may be used in lieu of engineering controls.

If respirators are worn, they must have joint Mine Safety and Health Administration and the National Institute for Occupational Safety and Health (NIOSH) seal of approval, and cartridge or canisters must be replaced before the end of their service life, or the end of the shift, whichever occurs first.

If any employee experience difficulty breathing while wearing a respirator, they may request a positive pressure respirator from Alin Machining Company dba Power Plant Services . Employees will be thoroughly trained to use the assigned respirator, and the training will be provided for and authorized by Alin Machining Company dba Power Plant Services .

5.3.b Protective Clothing

Employees must wear appropriate protective clothing (such as boots, gloves, sleeves, aprons, etc.) over any parts of your body that could be exposed to liquid benzene.

5.3.c Eye and Face Protection

Employees must wear splash-proof safety goggles if there is a possible exposure to their eyes. In addition, they will wear a face shield if their face could be splashed with benzene liquid.

5.4 Precautions for Safe Use, Handling and Storage

The following are general handling characteristics that must be adhered to:

- Benzene liquid is highly flammable.
- It should be stored in tightly closed containers in a cool, well ventilated area.
- Benzene vapor may form explosive mixtures in air.

- All sources of ignition must be controlled.
- Use non-sparking tools when opening or closing benzene containers.
- Fire extinguishers, where provided, must be readily available in areas where benzene is used and/or stored.
- Know where they are located and how to operate them.
- Smoking is prohibited in areas where benzene is used or stored.
- All ignition sources must be controlled when benzene is used, handled, or stored.
- Where liquid or vapor may be released, such areas shall be considered as hazardous locations.
- Benzene vapors are heavier than air; thus the vapors may travel along the ground and be ignited by open flames or sparks at locations remote from the site at which benzene is handled.

Special Fire-Fighting procedures: Do not use solid stream of water, since stream will scatter and spread fire. Fine water spray can be used to keep fire-exposed containers cool.

5.5 Emergency and First Aid Procedures

5.5.a Eye and Face Exposure

If benzene is splashed in your eyes, wash it out immediately with large amounts of water. If irritation persists or vision appears to be affected, see a doctor as soon as possible.

5.5.b Skin Exposure

If benzene is spilled on your clothing or skin, remove the contaminated clothing and wash the exposed skin with large amounts of water and soap immediately. Wash contaminated clothing before you wear it again.

5.5.c Breathing

If you or any other person breathes in large amounts of benzene, get the exposed person to fresh air at once. Apply artificial respiration if breathing has stopped. Call for medical assistance or a doctor as soon as possible.

Never enter any vessel or confined space where the benzene concentration might be high without proper safety equipment and at least one other employee present who will stay outside. A life line is required to be used.

5.5.d Swallowing

If benzene has been swallowed and the patient is conscious, do not induce vomiting. Call for medical assistance or a doctor immediately.

Chapter 6 - Bloodborne Pathogens

Communication of Hazards to Employees

6.1 Exposure

6.1.a Scope

Alin Machining Company dba Power Plant Services has developed this written Exposure Control Plan designed to eliminate or minimize employees occupational exposure to blood or other potentially infectious materials.

The person in charge of Alin Machining Company dba Power Plant Services 's Occupational Exposure Program is The Competent Person. The effectiveness of the program is their primary responsibility. They are also responsibility for maintaining the written medical records and training documentation records.

6.1.b Occupational Exposure

Defined by OSHA 1910.1030.b where a state in which a reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

6.1.c Other Potentially Infectious Materials

This program also addresses other potentially infectious materials that include:

1. The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;

2. Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and

3. HIV-containing cell or tissue cultures, organ cultures, and HIV- or HBV-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

6.1.d Exposure Control Plan

The follow written Exposure Control Plan procedures are designed to eliminate or minimize employee exposure. Employee participation in the Exposure Control Plan is mandatory, and contains at least the following elements:

A. The exposure determination required by section 6.1.f ;

B. The schedule and method of implementation for:

- Methods of Compliance,
- HIV and HBV Research Laboratories and Production Facilities,
- Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up;
- Communication of Hazards to Employees;
- Recordkeeping; and
- The procedures for the evaluation of circumstances surrounding exposure incidents required from section 6.1.g

Alin Machining Company dba Power Plant Services shall provide that a copy of the Exposure Control Plan to employees in accordance with section 6.10

6.1.e Review / Update

The Exposure Control Plan shall be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and company procedures which affect occupational exposure and to reflect new or revised employee positions with occupational exposure. The review and update of such plans shall also:

- Reflect changes in technology that eliminate or reduce exposure to Bloodborne pathogens; and

- Document annually consideration and implementation of appropriate commercially available and effective safer medical devices designed to eliminate or minimize occupational exposure.

Alin Machining Company dba Power Plant Services may survey any and all employees responsible for direct patient care who are potentially exposed to injuries from contaminated sharps in the identification, evaluation, and selection of effective engineering and work practice controls and shall document the results in the Exposure Control Plan.

The Exposure Control Plan is available to the representatives of the Assistant Secretary and to representatives of the Director under the Occupational Safety and Health Act upon request for examination and copying.

6.1.f Exposure Determination

Alin Machining Company dba Power Plant Services having an employee(s) with occupational exposure as defined by section 6.1.b shall prepare an exposure determination. This exposure determination shall contain the following:

- A list of all job classifications in which all employees in those job classifications have occupational exposure;

- Employees who are trained in First Aid or are expected to provide emergency help.

- A list of job classifications in which some employees have occupational

exposure, and

- A list of all company tasks and / or closely related tasks in which occupational exposure may occur to the employee in accordance with this section. This exposure determination is made without regard to the use of personal protective equipment.

6.1.g Exposure Incident

Following a report of an exposure incident, Alin Machining Company dba Power Plant Services will immediately make available to the exposed employee a confidential medical evaluation and follow-up, including the following elements:

- Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred;

- Identification and documentation of the source individual, unless the identification is infeasible or prohibited by state or local law;

- The source individual's blood shall be tested as soon as feasible and after consent is obtained in order to determine HBV and HIV infectivity. If consent is not obtained, Alin Machining Company dba Power Plant Services will document that legally required consent cannot be obtained;

- When the source individual's consent is not required by law, the source individual's blood, if available, is to be tested and the results documented.

6.2 Information and Training

Alin Machining Company dba Power Plant Services ‘s requires that all employees who could possible face occupational exposure participate in the training program which is provided at no cost to the employee and during working hours. Training is provided as follows:

- At the time of initial assignment to tasks where occupational exposure may take place; and
- Annual training for all employees within 1 year of previous training.

6.3 Labels and Signs

6.3.a Labels

Warning labels are required to be affixed to containers of regulated waste, refrigerators, and freezers containing blood or other potentially infectious material; and other containers used to store, transport or ship blood or other potentially infectious materials.

Labels required by this section shall include the following legend:

These labels shall be fluorescent orange or orange-red or predominantly so, with lettering and symbols in a contrasting color.

Labels shall be affixed as close as feasible to the container by string, wire, adhesive, or other method that prevents their loss or unintentional removal.

Labels required for contaminated equipment shall be in accordance with this section and will state which portions of the equipment remain contaminated.

Red bags or red containers may be substituted for labels.

6.3.b Exemptions

Containers of blood, blood components, or blood products that are labeled as to their contents and have been released for transfusion or other clinical use are exempted from the labeling requirements of section 6.3.a .

Individual containers of blood or other potentially infectious materials that are placed in a labeled container during storage, transport, shipment or disposal are exempted from the labeling requirements.

Regulated waste that has been decontaminated need not be labeled or color-coded.

6.3.c Signs

Alin Machining Company dba Power Plant Services will post signs at the entrance to any work areas where potential exposure may possibly exist. These signs shall be fluorescent orange-red or predominantly so, with lettering and symbols in a contrasting color.

6.4 Methods of Compliance

6.4.a General

Universal precautions are observed to prevent contact with blood or other potentially infectious materials. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

Alin Machining Company dba Power Plant Services will provide a copy of the Exposure Control Plan to employees at such a time as:

- Whenever an employee or designated representative requests access to a record, Alin Machining Company dba Power Plant Services shall assure that access is provided in a reasonable time, place, and manner;
- If Alin Machining Company dba Power Plant Services cannot reasonably provide access to the record within fifteen (15) working days the company will, within those fifteen (15) working days, apprise the employee or designated representative requesting the record of the reason for the delay and the earliest date when the record can be made available.

6.5 Engineering and Work Practice Controls

Engineering and work practice controls have been put in place to eliminate or minimize employee exposure. Where occupational exposure remains after institution of these controls, personal protective equipment will be issued to the employees.

Alin Machining Company dba Power Plant Services ’s engineering controls will be examined and maintained or replaced As needed to ensure their effectiveness.

6.5.a Handwashing

Alin Machining Company dba Power Plant Services ’s shall provide handwashing facilities which are readily accessible to employees.

When provision of handwashing facilities is not feasible, Alin Machining Company dba Power Plant Services shall provide either an appropriate antiseptic hand cleanser in conjunction with clean cloth/paper towels or antiseptic towelettes. When antiseptic hand cleansers or towelettes are used, hands shall be washed with soap and running water as soon as feasible.

Alin Machining Company dba Power Plant Services ‘s requires its employees to wash their hands immediately or as soon as possible after removal of gloves or other personal protective equipment.

Alin Machining Company dba Power Plant Services ‘s shall ensure that employees wash hands and any other skin with soap and water, or flush mucous membranes with water immediately or as soon as feasible following contact of such body areas with blood or other potentially infectious materials.

Specimens of blood or other potentially infectious materials are to be placed in a container that prevents leakage during collection, handling, processing, storage, transport, or shipping.

6.6 Personal Protective Equipment

6.6.a Provision

When there is occupational exposure, Alin Machining Company dba Power Plant Services will provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to:

gloves, gowns, laboratory coats, face shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices.

Personal protective equipment will be considered ‘appropriate’ only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time that the protective equipment will be used.

6.6.b Use

Alin Machining Company dba Power Plant Services policy requires that all employees use the appropriate personal protective equipment provided to them whenever a possibility of exposure exist or when directed to do so in the safety policies of Alin Machining Company dba Power Plant Services .

6.6.b.1 Exception

An employee may temporarily and briefly declined to use personal protective equipment when, in the employee's professional judgment that in the specific instance its use would have posed an increased hazard to the safety of the worker or co-worker.

6.6.b.2 Investigation

When the employee makes this judgment, the circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurrences in the future.

6.6.c Accessibility

Alin Machining Company dba Power Plant Services shall ensure that appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powder less gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

6.6.d Cleaning, Disposal, Repair and Replace

Alin Machining Company dba Power Plant Services will clean, and dispose of personal

protective equipment, at no cost to the employee, as well as repair or replace personal protective equipment as needed to maintain its effectiveness, again at no cost to the employee.

6.7 Housekeeping – Laundry – Cleaning of Contaminated Areas

6.7.a General

Alin Machining Company dba Power Plant Services ‘s shall ensure that the worksite is maintained in a clean and sanitary condition and will determine and implement an appropriate written schedule for cleaning and method of decontamination based upon the location within the facility, type of surface to be cleaned, type of soil present, and tasks or procedures being performed in the area.

6.7.b Decontaminated Surfaces

All equipment and environmental and working surfaces shall be cleaned and decontaminated after contact with blood or other potentially infectious materials.

Contaminated work surfaces shall be decontaminated with an appropriate disinfectant after completion of procedures; immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials; and at the end of the work shift if the surface may have become contaminated since the last cleaning.

Protective coverings, such as plastic wrap, aluminum foil, or imperviously-backed absorbent paper used to cover equipment and environmental surfaces, shall be removed and replaced as soon as feasible when they become overtly contaminated or at the end of the work shift if they may have become contaminated during the shift.

6.7.c Waste Receptacles

All bins, pails, cans, and similar receptacles intended for reuse which have a reasonable likelihood for becoming contaminated with blood or other potentially infectious materials shall be inspected and decontaminated on a regularly scheduled basis and cleaned and decontaminated immediately or as soon as feasible upon visible contamination.

Broken glassware that may be contaminated shall not be picked up directly with the hands. It shall be cleaned up using mechanical means, such as a brush and dust pan, tongs, or forceps.

Reusable sharps that are contaminated with blood or other potentially infectious materials shall not be stored or processed in a manner that requires employees to reach by hand into the containers where these sharps have been placed.

6.8 Regulated Waste

6.8.a Contaminated Sharps Discarding and Containment

Contaminated sharps shall be discarded immediately or as soon as feasible in containers that are:

- Closable;
- Puncture resistant;
- Leak proof on sides and bottom; and
- Labeled or color-coded in accordance with section 6.3.b .

During use, containers for contaminated sharps shall be:

- Easily accessible to personnel and located as close as is feasible to the immediate area where sharps are used or can be reasonably anticipated to be found (e.g., laundries);
- Maintained upright throughout use; and
- Replaced routinely and not be allowed to overfill.

When moving containers of contaminated sharps from the area of use, the containers shall be:

A. Closed immediately prior to removal or replacement to prevent spillage or protrusion of contents during handling, storage, transport, or shipping;
B. Placed in a secondary container if leakage is possible.

The second container shall be:

A. Closable;
B. Constructed to contain all contents and prevent leakage during handling, storage, transport, or shipping; and
C. Labeled or color-coded according to section 6.3.a

Reusable containers shall not be opened, emptied, or cleaned manually or in any other manner which would expose employees to the risk of percutaneous injury.

6.8.b Other Regulated Waste Containment

Regulated waste shall be placed in containers that are:

- Closable;
- Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;
- Labeled or color-coded in accordance with section 6.3.a ; and
- Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

If outside contamination of the regulated waste container occurs, it shall be placed in a second container. The second container shall be:

- Closable;
- Constructed to contain all contents and prevent leakage of fluids during handling, storage, transport or shipping;
- Labeled or color-coded in accordance with section 6.3.a and
- Closed prior to removal to prevent spillage or protrusion of contents during handling, storage, transport, or shipping.

Disposal of all regulated waste shall be in accordance with applicable regulations of the United States, States and Territories, and political subdivisions of States and Territories.

6.8.c Laundry

Contaminated laundry shall be handled as little as possible with a minimum of agitation. Contaminated laundry shall be bagged or containerized at the location where it was used and shall not be sorted or rinsed in the location of use.

6.9 Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up

Alin Machining Company dba Power Plant Services ’s policy includes ensuring that hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident.

Also that all medical evaluations and procedures including the hepatitis B vaccine and vaccination series and post-exposure evaluation and follow-up, including prophylaxis, are made available at no cost to the employee.

6.9.a Information Provided to the Healthcare Professional

Alin Machining Company dba Power Plant Services shall ensure that the healthcare professional responsible for the employee's Hepatitis B vaccination is provided a copy of this regulation. They shall ensure that the healthcare professional evaluating an employee after an exposure incident is provided the following information:

- A copy of this regulation;
- A description of the exposed employee's duties as they relate to the exposure incident;
- Documentation of the route(s) of exposure and circumstances under which exposure occurred;
- Results of the source individual's blood testing, if available; and
- All medical records relevant to the appropriate treatment of the employee including vaccination status which are Alin Machining Company dba Power Plant Services ’s responsibility to maintain.

6.9.b Healthcare Professional's Written Opinion

Alin Machining Company dba Power Plant Services shall obtain and provide the employee with a copy of the evaluating healthcare professional's written opinion within 15 days of the completion of the evaluation.

The healthcare professional's written opinion for Hepatitis B vaccination shall be limited to whether Hepatitis B vaccination is indicated for an employee, and if the employee has received such vaccination.

The healthcare professional's written opinion for post-exposure evaluation and follow-up shall be limited to the following information:

- That the employee has been informed of the results of the evaluation; and
- That the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials, which require further evaluation or treatment.
- All other findings or diagnoses shall remain confidential and shall not be included in the written report.

6.10 Recordkeeping – Reports

6.10.a Medical Records

Alin Machining Company dba Power Plant Services will establish and maintain an accurate record for each employee with occupational exposure, in accordance with 29 CFR 1910.1020. This record shall include:

- The name and social security number of the employee;
- A copy of the employee's hepatitis B vaccination status including the dates of all the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination as required by section 6.9
- A copy of all results of examinations, medical testing, and follow-up procedures as required by section 6.9
- Alin Machining Company dba Power Plant Services ’s copy of the healthcare professional's written opinion as required by section 6.9.b ; and
- A copy of the information provided to the healthcare professional as required by section 6.9.a

6.10.b Confidentiality

Alin Machining Company dba Power Plant Services will require that all employee

medical records required by section 6.10 are:

- Kept confidential; and

- Not disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by this section or as may be required by law.

- Alin Machining Company dba Power Plant Services will maintain the records required in accordance with this section for at least the duration of employment plus 30 years in accordance with 29 CFR 1910.1020.

6.10.c Training Records

Training records shall include the following information:

- The dates of the training sessions;
- The contents or a summary of the training sessions;
- The names and qualifications of persons conducting the training; and
- The names and job titles of all persons attending the training sessions.

Training records shall be maintained for 3 years from the date on which the training occurred.

Alin Machining Company dba Power Plant Services shall ensure that all employee training records required to be maintained by this program shall be made available upon request to all employees, to authorized employee representatives, the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor and Director of the National Institute for Occupational Safety and Health under the Occupational Safety and Health Act for examination and copying.

Employee medical records required by this program shall be provided upon request for examination and copying to the subject employee, to representatives of subject employee having written consent, and to provide representatives of the Assistant Secretary a right of access to these records in order to fulfill responsibilities under the Occupational Safety and Health Act - reference section 29 CFR 1910.1020.

6.10.d Transfer of Records

Alin Machining Company dba Power Plant Services shall comply with the requirements involving transfer of records set forth in 29 CFR 1910.1020(h).

If Alin Machining Company dba Power Plant Services ceases to do business and there is no successor employer to receive and retain the records for the prescribed period, Alin Machining Company dba Power Plant Services shall notify the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor and Director of the National Institute for Occupational Safety and Health, at least three months prior to their disposal and transmit them to them, if required within that three-month period.

6.11 Occupational Exposure

Any employee who has First Aid Training and are expected to provide emergency care as well as employees who care for patients or injured people are at risk for Bloodborne exposure risk. Those risks include exposure to HIV, Hepatitis and infections.

Chapter 7 - Disciplinary Program

7.1 Overview

This policy is intended to provide rules and guidelines for administering disciplinary action to Alin Machining Company dba Power Plant Services ’s employees who violate safety rules and procedures or who, by their record or actions, indicate a disregard for safety.

Safety related disciplinary action will be administered through Safety Director, the Responsible Safety Officer.

The purpose of this policy is to enhance safety awareness in all employees, and to motivate them to perform their work safely, in accordance with established safety rules, procedures, and instructions.

7.2 Circumstances Leading to Disciplinary Action

Listed below are conditions that could be considered for disciplinary action under the provisions of this policy:

A. Violation of a supervisor's safety related instructions.

B. Violation of established safety rules and/or procedures.

C. Violation of instructions on posted safety related signs.

D. Obvious unsafe actions as may be indicated by the improper use of equipment, horseplay or practical joking, poor housekeeping practices, etc.

E. Lack of concern toward safety instructions and programs.

The above circumstances are not intended to be all-inclusive. Any other circumstances that indicate an employee's disregard for their own safety, the safety of others, or the neglect of proper care for equipment, may also result in disciplinary action under the provisions of this policy.

When company officials undergo physical inspections and indicate violations showing an overall lack of commitment to Alin Machining Company dba Power Plant Services safety goals, they will be considered as circumstances leading to disciplinary actions.

7.3 Procedures

The twelve (12) month period is a continuous period.

Whenever a supervisor or other member of management observes an employee

committing an unsafe act or creating or allowing a hazardous condition to exist, a Safety Violation Notice should be completed. A copy of the violation form will be retained in the employee's personnel folder, and each time a new violation form is received, the employee's file will be reviewed for previous violations. Where previous violations appear during a 12 month period, the sanctions listed below will be implemented.

The Responsible Safety Officer will investigate any violation of the safety procedures and any accident where the cause is not clear. Their recommendation as to cause, preventable or non-preventable, will be made to the management.

If the employee feels they have been treated unjustly, they will be allowed to appeal the decision. The appeal will be reviewed by the Responsible Safety Officer, and the employee's supervisor.

7.4 Employee Sanctions

The following sanctions apply for violations of safety procedures or involvement in a preventable accident:

First Incident	-	Verbal warning with documentation.
Second Incident	-	Written warning with possible suspension.
Third Incident	-	Disciplinary action up to and including Discharge.
Fourth Incident	-	Discharge.

7.5 Supervisors Sanctions

The above sanctions also apply to supervisors who may also be subject to disciplinary action:

- when their employee receives some form of disciplinary action as noted above, or
- those who demonstrate negligence in their implementation or enforcement of written policy.

Any member of Alin Machining Company dba Power Plant Services ’s management and supervision team may be subject to these disciplinary guidelines as an individual or as a member of management.

7.6 Summary

The above disciplinary actions are a minimal guideline. Depending on the

circumstances or the severity of the violation or incident, any level of discipline that is most appropriate for the time and action up to and including termination, employee or supervision, may be implemented.

Approved by

_____

The Competent Person

7.7 Guidelines for Supervisor's Disciplinary Action

As a member of the management team, you will be in the position to enforce the Safety Policies in this manual.

Many of us consider the acts of Discipline and Enforcement difficult and uncomfortable to administer. However, you must remember that when it comes to a broken bone, a severed limb, or the death of our co-workers, it is impossible to place a value on these things.

The first definition of 'Discipline' in the dictionary is 'Instruction'. Another definition is 'Training that corrects, molds, and perfects'.

The following statement was taken from the Dow Chemical Safety and Health Program. It will be the foundation of our Disciplinary Policy:

'ASKING ME TO OVERLOOK A SIMPLE SAFETY VIOLATION

WOULD BE ASKING ME TO COMPROMISE

MY ENTIRE ATTITUDE TOWARD THE VALUE OF ONE'S LIFE.'

7.8 Employee Safety Violation and Disciplinary Form

SAFETY VIOLATION NOTICE
EMPLOYEE WARNING

EMPLOYEE NAME_____

UNION_____DATE OF WARNING_____

1ST NOTICE_____
2ND NOTICE_____

DATE OF VIOLATION_____
TIME_____

LOCATION & #_____

SAFETY VIOLATION
(explain)_____

_____

_____

_____

VIOLATION CONSIDERED TO BE:

Extremely Serious_____ Serious_____ Minor_____ Other_____

COMMENTS_____

_____

_____

WITNESS_____

REPORTED-BY_____

DATE_____

SUPERVISOR'S COMMENTS_____

_____

_____

SUPERVISOR'S
SIGNATURE_____

DATE_____

EMPLOYEE'S
COMMENTS_____
_____
_____
_____

EMPLOYEE'S SIGNATURE_____
DATE_____

CORRECTION
What action has or will be taken to prevent recurrence? (List then place an 'X' by completed items &
date.)_____
_____
_____
_____

MANAGER_____
DATE_____

Responsible Safety Officer_____
DATE_____

COPIES TO: OFFICE (ORIGINAL) - Responsible Safety Officer - EMPLOYEE

7.9 Procedures After Issuing A Safety Violation Notice

After a Safety Violation Notice is issued the RSO or Safety Director will meet with employee(s) to discuss the infraction & inform individual(s) of the rule or procedure that was violated and the corrective action to be taken.

7.10 Physical Inspections

Alin Machining Company dba Power Plant Services ’s officials will conduct periodic physical inspections as needed to ensure that work areas are compliant with safety rules and policies. If officials determine that there have been violations of the safety rules and policies, Alin Machining Company dba Power Plant Services will identify corrective actions needed to be taken and consider disciplinary action.

Chapter 8 - Driving Safety

8.1 Introduction

Because of the high cost of insurance purchased from private companies, the State Office of Risk Management devised a self-insurance program for its motor vehicles in 1980. Driver safety is designed to reduce the number and severity of accidents and thereby minimize the financial impact on state government. The Office of Risk Management has developed a comprehensive Loss Prevention Program as required by R.S. 39:1543.1C for statewide implementation. The Driver Safety Program is part of the overall program. Its purpose is to address safety, control use of vehicles, reduce the State's exposure, reduce the loss expenses, achieve accountability, and meet the requirements of R.S. 39:1543.1F. The following materials are included as an aid to assist administrators, supervisors, loss prevention coordinators, and agency or unit safety officers in managing and implementing safe driving by state employees. Definitions and forms are included and described later in this section of the manual.

8.2 Program Goal

The State is committed to a continuing, aggressive program of driver safety at all levels of state government. Driver safety is intended to increase safety awareness among drivers of state vehicles, to minimize the State's exposure to liability and financial losses, and to develop agency accountability for safe driving.

8.3 Components of a Driver Safety Program

Agency Safety Policies and Procedures: Each agency is responsible for implementing a safe driving program. This program shall include rules concerning who should be permitted to operate motor vehicles under the agency's control. Policies must outline the roles and responsibilities of managers, supervisors, and employees in driver safety. These policies should be issued to all drivers and form the basis for the agency's Driver Safety Program. Only employees authorized by their agency head or designee should operate vehicles for agency business. Employees should only operate those vehicles for which they are licensed. The Loss Prevention Unit will provide guidance and direction to agencies in the development of effective driver safety policies It is the agency's responsibility to designate which employees are authorized to drive vehicles on state business. The authorization process shall include a review of the employee's motor vehicle driving record and their respective class of license. The agency should also determine when driving responsibility must be taken away from an employee because of reckless operation of a vehicle or traffic violations. Only individuals possessing a current and proper class driver's license may be authorized by an agency to drive a motor vehicle on state business. High risk drivers shall not be authorized to drive vehicles. High risk drivers are those individuals having three or more convictions,

guilty pleas, and/or nolo contendere pleas for moving violations or individuals having a single conviction, guilty plea, or nolo contendere plea for operating a vehicle while intoxicated, hit and run driving, vehicular negligent injury, reckless operation of a vehicle, or similar violation within the previous twelve (12) month period.
All drivers of state vehicles must attend a driving course within three months of entering the program and must attend a refresher course at least once every three years unless their class of license requires other training or testing. Drivers who have violations on their motor vehicle records should be required to retake an approved driving course within 3 months of receiving the violation.

Communication/Organization: The Loss Prevention Unit will work with agencies in setting up the program within the agency and in training instructors who may teach the driving course for agency personnel. The Unit will also assist agencies in identifying positions and individuals who can assist in the driver safety program. The formation of safety committees will be encouraged to communicate the need for safe driving. The committees may also assist in the review and implementation of the agency's driving program.

Training: The Loss Prevention Unit will assist each agency in implementing driver safety training programs that address the needs of the agency. Instructor trainer courses are held periodically around the state for all agencies or upon request by an agency or agencies free of charge. Agencies must designate employees who will be required to take the driver training course taught by the agency certified instructors. The Unit will assist agencies in identifying training aids and resources that can be used for driver safety.

Accident Analysis: The Loss Prevention Unit will assist agencies in conducting investigations into claims resulting from accidents involving vehicles used on state business. The Unit also assists the Office of Risk Management's Claims Unit, upon request, in investigating accidents resulting in a claim.

Safety Audits and Record Keeping: The Loss Prevention Unit will assist agencies in reviewing and analyzing the motor vehicle program to ensure it is properly designed to have the intended impact. Data concerning the type, frequency, and amount of claims will be provided to the agency. By providing this data, the Unit assists the agencies in identifying where losses are occurring and how the losses can be reduced or eliminated.

The cost of insurance coverage assessed to each agency's budget is determined by considering three factors:

1) agency's exposure to risk.

2) frequency and severity of claims.

3) implementation of a driver safety program.

8.4 Responsibility for Safety

Only authorized employees will drive a motor vehicle in the course and scope of work or operate a company- owned vehicle. Any and all drivers that are employed or contracted with Alin Machining Company dba Power Plant Services and with any use of the company vehicle will have a valid and current license to operate the vehicle. Drivers will be appropriately assessed, licensed, and trained to operate the vehicle.

The Loss Prevention Unit will assist agencies in organizing, directing, implementing, controlling and providing training for a driver safety program that minimizes the adverse impact of motor vehicle accidents.

Department and agency heads are responsible for implementation of the driver safety program and must stress the importance of the department's driver safety program to all employees. Department heads or their designee are responsible for reviewing driver records and identifying employees authorized to drive state vehicles. They are also responsible for conducting annual reviews of all drivers to determine whether they should continue to operate state-owned vehicles and to verify that each driver has a valid and properly classed driver's license. Employees who drive their personal vehicle, on state business, shall be required to show proof of insurance. It is recommended that Department heads appoint the transportation coordinator to oversee this program. This appointment will assure coordination between the Driver Safety Program and the Fleet Management Program.

Department transportation coordinators plan, organize, direct, and control the driver safety program for the agency as required by PPM-63:Title 34, Part XI. These coordinators ensure that policies and procedures are established, that training courses are conducted, that driving records are maintained, and that reports reflecting the impact of the program are provided to the department head and supervisors. Agencies must furnish a list of employees authorized to drive to each audit location.
The departments shall make time available for each employee to attend the driver training course. Supervisors are responsible for seeing that all vehicles provided to these employees are in safe operating condition through a vehicle checklist and supervisors must insure the driver has proper class license for vehicle they operate. They must ensure that all motor vehicle policies and procedures are followed and that reports are submitted on a timely basis.

Employees who are authorized to drive state vehicles are responsible for the safe operation of those vehicles and maintenance of all necessary records especially those as required by the CDL driver. They should report any unsafe condition or accident involving state vehicles to their supervisor and are responsible for having a valid driver's license for the class of vehicle they are operating. Employees must report accidents involving vehicles used on state business to their supervisors immediately. They must report a revocation of their driver’s license or driving citations received immediately or within the next scheduled workday. Failure to report an accident, citation, or revocation may be cause for disciplinary action.

8.4.a Safe Operating Requirements

Loads shall be secure and shall not exceed the manufacturer's specifications and legal limits for the vehicle.

Seatbelts shall be worn by all occupants at all times whenever a vehicle is in motion.

Safe driver behaviors such as the use of hands-free cell phones, or cell phone use prohibited while driving, manipulating radios or other equipment is not allowed. Text messaging is prohibited during company vehicle use. Any other activity which may cause distractions are also prohibited. Every driver is not to exceed the posted speed limit and shall maintain a safe distance between other vehicles.

8.4.b Vehicle Maintenance

Every company vehicle shall be fit for the purpose, and shall be maintained in safe working order.

8.4.c Prohibited Use Of Company Vehicles

Drivers shall not at any time operate any motor vehicle while under the influence of alcohol, illegal drugs, or prescription or over-the counter medications that might impair their driving skills.

8.5 Accident Reporting

An accident is defined as any incident in which the vehicle comes in contact with another vehicle, person, object, or animal, which results in death, personal injury, or property damage, regardless of who was injured, what was damaged or to what extent, where it occurred or who was responsible.

All accidents shall be reported to the next level of supervision by the vehicle driver having the accident on the day of the accident. If the driver is not able to complete the accident report, the driver's supervisor will complete the report for them. A State Driver's Accident Report Form must be completed within 48 hours after an automobile accident in a State-owned vehicle and/or a rented/leased vehicle used on State business and returned to the Claims Unit. A copy of the Uniform Motor Vehicle Traffic Accident Report (police report) should accompany the DA 2041 or should be sent to the Claims Unit as soon as it is received by the agency.

FURTHER NOTE: CDL drivers must report directly to the Federal Department of Transportation in Dallas, Texas, if the accident involves a fatality. Failure of a driver to report any accident may be cause for disciplinary action.

The supervisor of the individual having the accident shall review the accident report within two working days of the accident and verify the accuracy of the report. Incomplete or inaccurate reports are unacceptable and shall be returned for completion or corrected information. The supervisor may have to aid the individual in completing the report. If the employee is injured the Incident/Accident Reporting Form (DA 2000) shall be filled out and accompany the DA 2041.

In investigating complex accidents, the supervisor should request assistance from their agency safety personnel or the Office of Risk Management.

The supervisor of the individual having the accident will, after reviewing the accident report, make a determination of whether the accident was preventable. The supervisor must consider what corrective action(s) is necessary for accidents thought to be preventable. The corrective action(s) may include: temporary suspension of driving privileges, special training, physical examination, etc. This should be noted immediately on the report.

Agency heads, or the designee, will review the Accident Report Form, the Uniform Motor Vehicle Traffic Accident Report (police report), if one was completed, and the Authorization and Driving History Form (DA 2054). The need for corrective disciplinary action may be considered on each accident where there was improper use of a vehicle.

8.6 Procedures for Enrolling Drivers

Upon approval by their supervisor the employee fills out the Authorization and Driving History form. The information on this form is used to acquire the Operator Driver Record (ODR) from the Department of Public Safety. The Authorization and Driving History form and the ODR is then submitted to the Agency head or designee who will review the driving record and sign the Authorization and Driving History form (DA 2054). If the employee is authorized to drive then they can be enrolled in a driving course. An ODR must be obtained from Department of Public Safety annually. The Authorization and Driving History form (DA 2054) must be dated and initialed when review is complete by the agency head or designee.

For Additional Information

For additional information call the Loss Prevention Unit at 225-342-8529.

DEFINITIONS

Authorization and Driving History Form: This form is maintained by the agency on each employee who drives on state business. The form shows when an employee was authorized to drive, the type of vehicle the employee may use, and information on the employee’s driving record. This form is also known by its Standard Form number, which

is DA 2054.

Accident form: This form is completed on an accident involving a state vehicle. It is critical that employees and supervisors understand their roles in reporting accidents and accurately describe what occurred in a vehicular accident. (DA 2054)

Department Head: The highest authority within the branches of State Government.

Agency Head: The highest authority within a subsidiary of a department.

Designee: Individual(s) specifically designated by the department head to authorize employees to operate a State vehicle.

Operator Driver Record (ODR): Record maintained by the Office of Motor Vehicles on each driver in the State containing history of driver violations and accidents.

NOTE: There is a list of conviction codes following this section. These are the codes that could appear on an ODR, and are provided to assist in identifying high risk drivers.

State Vehicle: Any licensed vehicle owned, leased and/or rented by the State. It also includes any privately owned vehicle used in the course and scope of employment.

High Risk Driver: Individuals having three or more convictions, guilty pleas and/or nolo contendere pleas for moving violations or individuals having a single conviction, guilty plea or nolo contendere plea for operating a vehicle while intoxicated, hit and run driving, vehicular negligent injury, reckless operation of a vehicle or similar violation, within a one year period.

Current Driver's License: A current license issued by the State authority authorizing the designated person to drive a vehicle.

Accident: Any incident in which the vehicle comes in contact with another vehicle, person, object, or animal, which results in death, personal injury, or property damage, regardless of who was injured, what was damaged or to what extent, where it occurred or who was responsible.

Transportation Coordinator: Individual appointed by the department as required by LAC Title 34, Part XI.

CDL: - Commercial Driver's License as defined by the Federal Department of Transportation.

Authorization and Driving History Form

Name: _____ Drivers License No:_____
Address: _____ License Office No.: _____
City: _____ Expiration Date: _____
Class License: _____Date of Birth: _____
SSN: _____ Issue Date: _____

****

Employed By: _____
Section: Unit:
Job Title: _____
Immediate Supervisor's Name:
Phone number: (__ __) - __ __ __ - __ __ __ __
Is it this employee's primary purpose to drive vehicles?
Is a current Motor Vehicle Record attached?_____
Has it been verified as accurate?
Will this driver be authorized to operate his or her privately owned vehicle in the course and scope of employment? _____
Date of last Driver Training Course? Month_____ Day _____ Year _____

****

Class of License:	**Endorsements:**	**Restrictions:**
A: Combinations Vehicle : ( )	**T:** Double Trailer : ( )	**L:** Airbrakes : ( )
B: Heavy Straight Vehicle: ( )	**P:** Passenger Vehicle : ( )	**Others**: ( )
C: Light Vehicle : ( )	**N:** Tank Vehicle : ( )	
D: Commercial Vehicle : ( )	**H:** Hazardous Material : ( )	
E: Personal Vehicle : ( )	**X:** Combination **N+H** : ( )	

****

USE OF PRIVATE VEHICLE FOR STATE BUSINESS

This is to certify that as a condition of driving my personal vehicle on state business, I have and will maintain at least the minimum liability coverage as required by *LA. R. S. 32:900 (B) (S*). I also understand that the use of my vehicle on state business requires prior written authorization from my supervisor or agency head.

_____ _____

Employee Signature ***Date***

****

AGENCY HEAD OR DESIGNEE STATEMENT

I have reviewed this individual's genuine need to drive a State Vehicle. In conducting this review, I have considered his/her driving experience, type of vehicle to be operated, and one year driving record. The attached operator's record has been verified as accurate and dated as necessary. I authorize this individual to operate the vehicles approved by the type of license above. This authorization must be reviewed one year from this date.

_____ _____

Agency Head ***Date of Authorization***
(or designated individual)

05/10/00
DA 2054

CONVICTION CODES FOR ODR

CODE	ABBREVIATION	DESCRIPTION
01	DWI 1st	DWI 1st Offense
02	REV VIOL	Violation of Revocation
03	ACC PROP	Accident Property Damage
04	ACC NO DMG	Accident No Damage
05	FL RND AID	Failure to Render Aid
06	NEG HOMCD	Negligent Homicide
07	HIT/RUN	Hit and Run
08	RECK OPER	Reckless Driving
09	SPEEDING	Speeding
10	FELONY	Felony
11	IMPRP PASS	Improper Passing
1 2	IMPRP TURN	Improper Turning
13	IMPRP LANE	Improper Lane Usage
14	FAIL TO YD	Failure to Yield
1 5	SIGNS-SIGS	Signs or Signals
1 6	ACC NO FLT	Accident No Fault
1 7	OTH MOV	Other Moving Violation
18	OPER SIGN	Operator Signals
1 9	AFFIDAVIT	Affidavit
20	DEF EQP NC	Defective Equipment/No Control
21	REST VIOL	Restriction Violation
22	DEPT ACT	Departmental Act
23	CRLS DRIV	Careless Driving
24	NEG INJURY	Negligent Injury
25	COMP SEC	Compulsory Security
26	DWI 2nd	DWI 2nd Offense
27	REF ALC AN	Refused Alcohol Analysis
28	FREQ VIO	Frequent Violations
29		
30	DUI MED	DUI/Medication
31	MED STMT	Medical Statement
32	SPEC EXAM	Special Examination
33	POS ILLSUB	Possession Illegal Substance
34	HAB OFFNDR	Habitual Offender
35	UNLW USE	Unlawful Use D/L
36	IMPAIRED	Impaired
37	OPER DISAB	Operator Disabled
38	IMP TOWING	Improper Towing
39	DWI 3rd	DWI 3rd Offense
40	MANSLAUGHTER	Manslaughter
41	UNLW DL	Unlawful Use D/L
42	UNLW DL	Unlawful Use D/L
43	ILL USE	Illegal Use of Motor Vehicle
44	FAIL STAND	Failure of Safe Driving Standards
45	MED REASNS	Medical Reasons
46	OUT ST AFF	Out of State Affidavit
47	WRIT PROM	Written Promise

48	IN LIEU OF	In Lieu Of
49	DWI 4th +	DWI 4th or More
50	SUB-TEST	Submit Test
51	VIO HO JUDG	Violation Habitual Offender Judge
52	VEH NEG INJ	Vehicular Negligent Injury
53	VEH HOMCDE	Vehicular Homicide
54	SC BUS VIO	School Bus Violation
55	PEND BLOOD	Pending Blood
56	DWI 894	DWI 894
57	FTA	FTA-Uncoded Viol Chg
58	DENY DPY 1	Denial Dr. Priv. Youth –1st
59	DENY DPY 2	Denial Dr. Priv. Youth –2nd
60	CANCEL DOE	Cancel DOE
61	CANC-PAR	Cancel – Requested by Parent
62	CANEL-VS	Cancel – Voluntary Surrender
63	FRAU AP ID	Fraudulent Application/ID
64	ALTERED ID	Possession of Altered ID
65	POS FIC ID	Possession of Fictitious ID
66	FELONY CMV	Felony Involving Use of CMV
67	FEL CS CMV	Felony Involving CS in CMV
68	SP CMV 15 +	Excessive Speeding 15MPH + CMV
69	CRL DR CMV	Driving Disregard Pers/Prop
70	RCK DR CMV	Reckless Driving CMV
71	FLW TO CLS	Following Too Closely
72	FTL AC CMV	Fatal Accident Violation CMV
73	DEF EQUIP	Defective Equipment
74	DEF HDLGHT	Operating Defective Headlights
75	DEF BRAKES	Operating Defective Brakes
76	DEF MUF/EX	Operating Defective Muffler/Exhaust
77	DEF TIRES	Operating Defective Tires
78	UN RUN VE	Leaving Veh Unattended Running
79	OVRLD PASS	Overload Passenger/Cargo
80	UNLWFL NS	Unlawful Noise
81	FL TO DIM	Failure to Dim Lights
82	WO RQD EQP	Operating W/O Equipment Reqd
83	FEL W/VEH	Using Veh Connection W/ Felony
84	AID FEL	Using Veh Aid/Abet a Felony
85	FL LV DIST	Failure Veh to Leave Suff Dis
86	FLW EM VEH	Following Emer Veh Unlawfully
87	FL PROP LN	Failure to Keep Proper Lane
88	DRV OFF RD	Driving Shoulder/Ditch/Sidewalk
89	IMP EN/EX	Improper Entry to/Exit from Traf
90	DP HRM SUB	Deposit Inj/Harmful Substance
91	LITTERING	Littering from Motor Vehicle
92	IMP START	Improper Starting from Prkd Pos
93	IMP BACK	Improper Backing
94	OPN DR TRF	Opening Veh Door in Traffic

95	CR FR HOSE	Crossing Firehose with Vehicle
96	NO PASS ZN	Passing in No Passing Zone
97	PASS WR SD	Passing on Wrong Side
98	FL SG PASS	Failure to Signal Pass
99	FL YD PASS	Fail to Yield Passing Vehicle

100	RK HAZ MAT	Reckless Transport of Haz Mat
101	COASTING	Coasting with Gears Disengaged
102	FL RPT ACC	Failure to Report Accident
103	FL SURR IT	Failure to Surrender Items
104	FL POSS DL	Failure to Keep DL in Poss
105	UNREG VEH	Operating Unregistered Vehicle
106	FL YD EMV	Fail to Yield Emergency Vehicle
107	FL YD UNSG	Fail to Yield Unsigned Intersec
108	UNLAW USE	Unlawful Use of Drivers License
109	FL YD PEDS	Fail to Yield Pedestrians
110	FL OFF INS	Fail to Flw Officer Instruction
111	PASS BRCDE	Passing Through Barricade
11 2	FL SAFT ZN	Fail to Observe Safety Zone
113	TMP SIG/SN	Tampering with Signs/Signals
114	DRAG RACNG	Drag Racing
11 5	DR FAST CD	Driving Too Fast for Conditions
11 6	SPD LS MIN	Speed Less Than Posted Minimum
117	RGT FR LFT	Right Turn From Left Lane
118	LFT FR RGT	Left Turn From Right Lane
11 9	DR W/O LIC	Driving W/O Proper License
120	AL UNLI DR	Allow Unlic Driver to Drive
121	WR ONE WAY	Wrong Way on One-Way Street
1 22	DR WRG SDE	Driving on Wrong Side of Road
1 23	WRG DR RTY	Driving Wrg Direction on Rotary
124	FLW CL CMV	Following Too Close CMV
1 25	SUS VIOL	Driving While Suspended
1 26	REC VIOL	Recurring Violations
1 27	REFUSAL 2 +	Refusal Alcohol Analysis 2nd +
1 28	ERR LN CHG	Improper Erratic Lane Change
129	DR CMV 04 +	Driving CMV .04+
130	DUI CMV	Driving Under Influence CMV
131	REF CMV	Refusal CMV
132	DUI CS CMV	DUI Controlled Substance CMV
133	LVG SC CMV	Leaving Scene of Accident CMV
134	DWI	DWI
135	DSABIL MIS	Disability Cond. Misc. CDL
136	EQUIP VIOL	Equipment Violation
137	EQUIP REGU	Equipment Regulation
138	FAT MISC	Fatality Miscellaneous
139	FELONY	Felony
140	FLW IMP	Following Improperly
141	HIT RUN	Hit/Run
142	IMP LANE	Improper Lane

143	LITTER	Littering
144	MISREPRE	Mispresentation
145	MISCELL	Miscellaneous
146	PASS	Passing
147	RCK	Reck. Care. Neg. Driving
148	RQD RPT	Required Reports
149	REG. TITLE	Registration and Title
1 50	SUBTEST 2 +	Submit 2nd and Subsequent Test
151	REP VIOL	Repeated Violations

152	RT WAY	Right of Way
153	SG CN DEV	Signs/Control Device
154	SGN INT	Signaling Intention
155	SPEED	Speed
156	TURN	Turns
157	VIOL REST	Violation of Restriction
158	WR WAY DIR	Wrong Way, Side, or Direction
159	ADM. SUSP	Administration Suspension
160	DENY DP 1	Denial Driving Privileges –1st
161	DENY DP 2	Denial Driving Privileges- 2nd
162	AFFTESSTR	Tess Affidavit Tow/Rec
163	DWI 1st BF	DWI 1st Offense-Bond Forfeiture
164	DWI 2nd BF	DWI 2nd Offense-Bond Forfeiture
165	DWI 3rd BF	DWI 3rd Offense-Bond Forfeiture
166	DWI 4th BF	DWI 4th Offense-Bond Forfeiture
167	AFFTESSMC	Tess Affidavit – Motor Carrier
168	REF TO SUR	Refusal to Surrender ID
169	LND ID	Loaned ID Card
170	3rd / 12 MN	3 Reckless Driving/12 Months
171	REF OSS	Refused Alcohol Analysis/OOS DL
172	REF OOS 2+	Refused Alcohol Anal. 2+/OOS DL
173	SUB OOS	Submit Test/OOS DL
174	SUB OOS 2+	Submit Test 2+/OOS DL
1 75	JUDG UNSAT	Judgement Unsatisfied
1 76	SEC REQ	Failure to Meet FR Requirements
1 77	FR REQ CV	Failure to File FR/Conviction
1 78	FR REQ	Failure to File FR
1 79	LEAVE SCN	Leaving Before Investigation
180	DISQ .04+	Disq. Submit .04 – 1 Yr.
181	DISQ DWI	Disq. DWI – 1Yr.
182	DISQ REF	Disq. Refusal – 1Yr.
183	DISQ C S	Disq. Cntrld Substance – 1 Yr.
184	DISQ LVGSC	Disq. Leaving Scene Accdt – 1 Yr.
185	DISQ FLNY	Disq. Felony – 1Yr.
186	DISQ 04+HZ	Disq. Submit .04+/HZ – 3 Yrs.
187	DISQ DWIHZ	Disq. DWI/HZ – 3 Yrs.
188	DISQ REFHZ	Disq. Refusal/HZ – 3 Yrs.
189	DISQ C S HZ	Disq. DUI Cntrld Sbtnc/HZ – 3 Yrs.
1 90	CDL MISC	CDL Miscellaneous

191	DISQ L S HZ	Disq. Leaving Scn Accdt/HZ – 3 Yrs.
1 92	ACC. CDL	CDL Accident Information
1 93	WITH DRL CV	Withdrawal Notice Convictions
194	24 HR OOS	24 Hour Out of Service Order
1 95	DISQ 60	Disqualification 60 Days
1 96	DISQ 1 20	Disqualification 1 20 Days
1 97	DISQ 1 YR	Disqualification 1 Year
1 98	DISQ 3 YRS	Disqualification 3 Years
199	DISQ LIF	Disqualification Lifetime
200	FLEE SCENE	Fleeing the Scene
201	EVD NO LGT	Evading/Lights Off
202	RAN OFF RD	Ran Off Road

203	LIT BRN SB	Littering Burning Substance
204	SEX VIOL	Sex Violation
205	UNSAFE OP	Unsafe Operation
206	IMP DISPLY	Improper Display of Plate
207	OP EXP REG	Operating Expired Registration
208	UNLAW REG	Unlawful Registration
209	IMP DOC	Invalid Display of Registration
210	FRQ VIO PT	Frequent Violation Points
211	YLD SCH BS	Failure to Yield/School Bus
212	FAIL WARNG	Failure to Observe Warning
213	WRG SIGN	Wrong Signal
214	CANC SIGN	Failure to Cancel Signal
215	ERR SPEED	Erratic Speed
216	OPR NO CON	Operating Without Consent
217	ILL EQUIP	Illegal Equipment
218	FATAL VIOL	Fatal Violation
219	SUICIDE MV	Suicide Violation / Motor Vehicle
220	UNLAW USE	Unlawful Use of Drivers License
221	UNLAW USE	Unlawful Use of Drivers License
222	POSSESSION	Possession
223	POS AC 21	Possession of Alcohol < 21
224	POS TOB 21	Possession of Tobacco < 21
225	DOE MINOR	DOE Minor School Dropout
226	REV VIOL	Driving While Revoked
227	UNLW USE 1	Unlawful Use of DL/1st Offense
228	UNLW USE 2	Unlawful Use of DL/2nd or Subsq
229	FL RND AID	Fail to Stop/Render Aid w/ Injur
230	SUBMIT .04	Submit .04 - .09
231	FINC RESP	Financial Responsibility
232	FAIL MAINT	Failure to Maintain Control
233	NO LIGHTS	Driving With No Headlights

Chapter 9 - Electrical Safety: Qualified / Non Qualified

9.1 Scope

The training requirements of Alin Machining Company dba Power Plant Services ’s electrical safety program contained in this chapter apply to employees who face a risk of electric shock that is not reduced to a safe level and who are **not qualified persons** shall also be trained in and be familiar with any electrically related safety practices not specifically addressed but which are necessary for their safety.

The training requirements of Alin Machining Company dba Power Plant Services ’s electrical safety program contained in this chapter **does not apply** to **employees** who are **qualified** to face a risk of electric shock that is not reduced to a safe level. Their training requirements are not covered in this manual and any work requiring that level of training and knowledge shall not be done by Alin Machining Company dba Power Plant Services ’s employees.

9.1.a Content of Training

Employees shall be trained in and familiar with the safety-related work practices required by that pertaining to their respective job assignments.

9.2 General

Safety-related work practices shall be employed to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts, when work is performed near or on equipment or circuits which are or may be energized. The specific safety-related work practices shall be consistent with the nature and extent of the associated electrical hazards.

9.3 Working On or Near Exposed Deenergized Parts

This paragraph applies to work on exposed deenergized parts or near enough to them to expose the employee to any electrical hazard they present. Conductors and parts of electric equipment that have been deenergized but have not been locked out or tagged in accordance with paragraph b of this section shall be treated as energized parts, and Sub Part C of this chapter applies to work on or near them.

9.4 Lockout and Tagging

While any employee is exposed to contact with parts of fixed electric equipment or circuits which have been deenergized, the circuits energizing the parts shall be locked out or tagged or both in accordance with the requirements of this paragraph. The requirements shall be followed in the order in which they are presented (i.e., Sub Part C first, then Sub Part E)

9.4.a Procedures

The employer shall maintain a written copy of the procedures outlined in this section and shall make it available for inspection by employees and by the Assistant Secretary of Labor and his or her authorized representatives.

Note Reference: The written procedures may be in the form of a copy of this section.

9.4.b Deenergizing Equipment

Safe procedures for deenergizing circuits and equipment shall be determined before circuits or equipment are deenergized.

The circuits and equipment to be worked on shall be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for deenergizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures.

Stored electric energy which might endanger personnel shall be released. Capacitors shall be discharged and high capacitance elements shall be short-circuited and grounded, if the stored electric energy might endanger personnel.

Note Reference: If the capacitors or associated equipment are handled in meeting this requirement, they shall be treated as energized.

Stored non-electrical energy in devices that could reenergize electric circuit parts shall be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

9.4.c Application of Locks and Tags

A lock and a tag shall be placed on each disconnecting means used to deenergize circuits and equipment on which work is to be performed, except as provided in Sub Part C and E of this section. The lock shall be attached so as to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools.

Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

Sub Part C

If a lock cannot be applied, or if Alin Machining Company dba Power Plant Services can demonstrate that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock, a tag may be used without a lock.

A tag used without a lock, as permitted by Sub Part C of this section, shall be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by use of a lock. Examples of additional safety measures include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

Sub Part E
A lock may be placed without a tag only under the following conditions:

- Only one circuit or piece of equipment is deenergized, and
- The lockout period does not extend beyond the work shift, and
- Employees exposed to the hazards associated with reenergizing the circuit or equipment must be familiar with this procedure.

9.5 Working On or Near Exposed Energized Parts

This applies to work performed on exposed live parts (involving either direct contact or by means of tools or materials) or near enough to them for employees to be exposed to any hazard they present.

9.6 Work on Energized Equipment

Only qualified persons may work on electric circuit parts or equipment that have not been deenergized under the procedures of in section 9.4.b of this chapter. Such persons shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

9.7 Overhead Lines

If work is to be performed near overhead lines, the lines shall be deenergized and grounded, or other protective measures shall be provided before work is started. If the lines are to be deenergized, arrangements shall be made with the person or organization that operates or controls the electric circuits involved to deenergize and ground them. If protective measures, such as guarding, isolating, or insulating, are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.

Note Reference: The work practices used by qualified persons installing insulating devices on overhead power transmission or distribution lines are covered by 1910.269 of this Part, not by 1910.332 through 1910.335 of this Part. Unqualified persons are prohibited from performing this type of work.

9.8 Unqualified Persons

When an unqualified person is working in an elevated position near overhead lines, the location shall be such that the person and the longest conductive object he or she may contact cannot come closer to any unguarded, energized overhead line than the following distances:

- Minimum approach distance to energized high power voltages lines for unqualified employees is 10 feet.
- Minimum approach distance for qualified employees shall be followed per 29 CFR 1910.333(c)(3)(i) Qualified – Table S5 Selection and Use of Work Practices - Approach Distances for Qualified Employees – Alternating Current). Approach distances are 10’ for 50kV plus 4” for every additional 10kV.

TABLE S–5—APPROACH DISTANCES FOR QUALIFIED EMPLOYEES—ALTERNATING CURRENT

Voltage Rage (phase to phase) Minimum Approach Distance

Over 300V, not over 750V.....1 ft. 0 in. (30.5 cm).
Over 750V, not over 2kV.....1 ft. 6 in. (46 cm).
Over 2kV, not over 15kV.....2 ft. 0 in. (61 cm).
Over 15kV, not over 37kV.....3 ft. 0 in. (91 cm).
Over 37kV, not over 87.5kV.....3 ft. 6 in. (107 cm).
Over 87.5kV, not over 121kV.....4 ft. 0 in. (122 cm).
Over 121kV, not over 140kV.....4 ft. 6 in. (137 cm).

9.9 Vehicular and Mechanical Equipment

Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 ft. (305 cm) is maintained. If the voltage is higher than 50kV, the clearance shall be increased 4 in. (10 cm) for every 10kV over that voltage. However, under any of the following conditions, the clearance may be reduced:

- If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 ft. (122 cm). If the voltage is higher than 50kV, the clearance shall be increased 4 in. (10 cm) for every 10 kV over that voltage.

- If insulating barriers are installed to prevent contact with the lines, and if the barriers are rated for the voltage of the line being guarded and are not a part of or an attachment to the vehicle or its raised structure, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier.

- If the equipment is an aerial lift insulated for the voltage involved, and if the work is performed by a qualified person, the clearance (between the

uninsulated portion of the aerial lift and the power line) may be reduced to the distance given in Table S-5.

9.10 Illumination

Employees may not enter spaces containing exposed energized parts, unless illumination is provided that enables the employees to perform the work safely.

Where lack of illumination or an obstruction precludes observation of the work to be performed, employees may not perform tasks near exposed energized parts. Employees may not reach blindly into areas which may contain energized parts.

9.11 Confined or Enclosed Work Spaces

When an employee works in a confined or enclosed space (such as a manhole or vault) that contains exposed energized parts, the employer shall provide, and the employee shall use, protective shields, protective barriers, or insulating materials as necessary to avoid inadvertent contact with these parts. Doors, hinged panels, and the like shall be secured to prevent their swinging into an employee and causing the employee to contact exposed energized parts.

9.12 Conductive Materials and Equipment

Conductive materials and equipment that are in contact with any part of an employee's body shall be handled in a manner that will prevent them from contacting exposed energized conductors or circuit parts. If an employee must handle long dimensional conductive objects (such as ducts and pipes) in areas with exposed live parts, Alin Machining Company dba Power Plant Services will institute work practices (such as the use of insulation, guarding, and material handling techniques) which will minimize the hazard.

9.13 Portable Ladders

Portable ladders shall have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized parts.

9.14 Conductive Apparel

Conductive articles of jewelry and clothing (such a watch bands, bracelets, rings, key chains, necklaces, metalized aprons, cloth with conductive thread, or metal headgear) may not be worn if they might contact exposed energized parts. However, such articles may be worn if they are rendered nonconductive by covering, wrapping, or other

insulating means.

9.15 Arc Flash and Electrical Safety

An arc flash is the explosive release of energy that occurs when there is a phase-to-phase or phase to ground arc fault. The arc fault may be the result of unsafe work procedures such as a dropped tool or accidental contact by a human. Additionally, an arc fault may be caused by corrosion, insulation failure, conductive dust, and contact by animals.

During an arc flash, the rapid heating of air molecules and the vaporization of conductive metals generate an intense pressure blast. This blast pressure can propel shrapnel, tools and workers through the air. The heat wave generated by an arc flash may be severe enough to melt metal and severely burn a worker that is standing in the vicinity of the flash.

Workers that are exposed to an arc flash sustain injuries typical to an explosion such as, burns, loss of sight, loss of hearing, broken bones, head injuries and shrapnel injuries.

APPLICABLE CODES AND STANDARDS

NFPA 70E covers the full range of electrical safety issues, including safety related work practices, maintenance, special equipment requirements, and installation. It focuses on protecting people and identifies requirements that are considered necessary to provide a workplace that is free of electrical hazards. OSHA bases its electrical safety mandates, found in Subpart S part 1910 and Subpart K part 1926, on the comprehensive information found in NFPA 70E. NFPA 70E is recognized as the tool that illustrates how an employer might comply with these OSHA standards. The relationship between the OSHA regulations and NFPA 70E can be described as OSHA is the “shall” and NFPA 70E the “how.”

OSHA mandates that all services to electrical equipment be done in a de-energized state. Working live can only be under special circumstances. If it is necessary to work live (>50 volts to ground), the regulations outlined in NFPA 70E, Article 130 should be used as a tool to comply with OSHA mandates Subpart S part 1910.333(a)(1).

NFPA 70E — The Safety related work practices as outlined in NFPA 70E and application tables will be followed and adhered to for the safety of all employees. This standard outlines safety programs, calculations for the degree of hazard, personal protective equipment, worker training and warning labels for

equipment.

IEEE 1584 - ARC FLASH HAZARD ANALYSIS / CALCULATIONS

This article deals with calculating the size of the potential fault. These calculations provide a basis for the level of personal protective equipment (PPE) that is required when examining or servicing equipment.

ARC FLASH AND ENCLOSURES

Article 110.16 of the National Electric Code (NEC) states that switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers that require examination or maintenance while energized, must be clearly field marked so that qualified persons examining or servicing the equipment know the potential hazards that exist. A couple of common field marking labels are found below in figures 5 and 6.

Since the NEC requires field marking of enclosures where arc flash hazards exist, UL does not require an arc flash hazard marking for enclosures by the integrator or manufacturer of the equipment. It is the responsibility of the end user to determine the arc hazard that exists in respect to the power supply to the equipment and the specific components used in that equipment.

Once the arc flash hazard analysis has been completed for a specific piece of equipment, a flash protection boundary is established. This boundary is not based on a protective rating of the enclosure but rather the level of energy that an arc flash could produce. Any person that comes within this protection boundary must use personal protective equipment according to the level of fault that has been calculated. In general, NFPA 70E states that for low voltage applications (below 600V), a 4-foot protection boundary must be observed.

ARC FLASH AND BUSBAR SYSTEMS

When designing a custom busbar power distribution system, it is important to ensure that the phases, neutral and ground busbars are properly spaced and are braced to support a specific electrical short. Standardizing on a pre-tested bus- bar system can eliminate costly engineering and design work by providing safe and acceptable configurations for the set of pre-tested components.

CONCLUSIONS FOR ARC FLASH HAZARDS

Arc flash hazard should be taken seriously. End users should perform detailed hazard analysis, and proper safety measures must be taken to prevent injuries.

IEEE 1584 and NFPA 70E should be the guideline for flash hazard analysis and safety initiatives.

Enclosures must be field labeled to warn of potential arc flash hazards.

Figure 5 – Generic Field Label

Empty enclosures do not require arc flash ratings or testing.

Pre-Tested Busbar systems should meet or exceed spacing and short-circuit bracing standards.

Figure 6 — Equipment Specific Field Label

Chapter 10 - Emergency Action Plan

10.1 Written And Oral Emergency Action Plans

Alin Machining Company dba Power Plant Services has a written emergency action that is kept in the workplace, and available to employees for review at any time. Alin Machining Company dba Power Plant Services generally has more than 10 employees however, if we ever have 10 or fewer employees we may communicate the plan orally to all employees.

10.2 Minimum Elements Of The Emergency Action Plan

An emergency action plan must include at a minimum:

- Procedures for reporting a fire or other emergency;
- Procedures for emergency evacuation, including type of evacuation and exit route assignments;
- Procedures to be followed by employees who remain to operate critical plant operations before they evacuate;
- Procedures to account for all employees after evacuation;
- Procedures to be followed by employees performing rescue or medical duties.
- The name or job title of every employee who may be contacted by employees who need more information about the plan or an explanation of their duties under the plan.

10.3 Employee Alarm System

Alin Machining Company dba Power Plant Services has in place and will maintain a system to alert employees of emergencies. The alarm system shall be distinctive and recognizable as a signal to evacuate the work area or perform actions designated under the emergency action plan. At Times if and when our company has 10 or fewer employees in a particular workplace, direct voice communication is an acceptable procedure for sounding the alarm provided all employees can hear the alarm. The employee alarm system must use a distinctive signal for each purpose.

10.4 Training

An employer must designate and train employees to assist in a safe and orderly evacuation of other employees. This is covered under is chapter within the section titled “Building Emergency & Evacuation Plan”.

10.5 Review Of Emergency Action Plan

An employer must review the emergency action plan with each employee covered by the plan:

- *When the plan is developed or the employee is assigned initially to a job;*
- *When the employee's responsibilities under the plan change; and*
- *When the plan is changed.*

10.6 Develop Safe Work Plan

Prior to any construction or new site work a site map of the project shall be developed or obtained if already developed. The 'Safe Work Plan' shall identify usage area, hazards, Emergency Action Plan and be reviewed with Operating Personnel that will be at the site.

10.7 Organization

Alin Machining Company dba Power Plant Services requires that during every emergency an organized effort be made to protect personnel from further injury and to minimize property damage. All of Alin Machining Company dba Power Plant Services 's resources can be made available to respond to an emergency. Each supervisor must know what to do during an emergency in his or her area and must be certain that his or her employees understand their roles.

10.8 Master Emergency Response Plan

Alin Machining Company dba Power Plant Services 's Master Emergency Response Plan delineates lines of authority and responsibility for emergency response. In this context, a major emergency may be one of the following: a potential major loss to a building or facility; an emergency that involves more than one building or facility; a situation in which a choice must be made in the assignment of relative levels of authority among emergency-response groups; a potential hazard to the surrounding community; threat; civil disturbances or alerts; natural disasters such as earthquakes, floods, and landslides; and site wide electrical power or other utility failure. During response to such major events, if deemed necessary by management or Alin Machining Company dba Power Plant Services Fire or Police may be summoned, and a predesignated succession of management personnel would determine who would take charge. The primary responsibility person designated to be in charge is to ensure that priorities are established, that the response is appropriate and adequately implemented, and that the proper notifications are made. In most cases the direct involvement of local supervision and remedial action will be necessary. Adequate emergency response will be made at the group, department, and building levels, with support from Fire, Medical, Protective Services, and other support organizations. As a practical matter it must be recognized that management personnel are normally on site only 40 of the 168 hours per week. Thus, there may be considerable delay before management personnel can assume on-site direction of major emergencies. This highlights the importance of local initiative, at least at the onset of an emergency. The underlying philosophy of the

emergency response plan is the recognition that each employee has a vital role and a basic responsibility in the area of safety and emergency action. The only reasonable expectation is that at the onset of an emergency the initial response will be at the individual level. Immediate and knowledgeable action is vital. The emergency plans for individual buildings and facilities set forth the responses to be taken by employees following the discovery of an emergency. Following the immediate measures taken by the individual, the responsibility for action will normally proceed upward through normal organizational lines of authority to the Building Manager and to emergency-response groups. Involvement of individuals at a higher level of responsibility will depend on the particular situation. To reiterate, levels of responsibility proceed downward from top management while action and response levels proceed upward from the first person involved. Don't be afraid to call outside assistance like police and firefighters. Dial 911. When the police, firefighters or paramedics arrive, surrender command to a qualified emergency specialist. Notify management as soon as practical, which means after all immediate responses have been exercised. The operator at 911 will tell you who is the person in charge of the specialized personnel assigned to respond to the emergency. An orderly transfer of responsibility is then made from the local building or facility organization to this responding unit. The examples listed below identify the most likely outside incident commander for the following types of emergencies: Injury: Ranking Fire Officer or Physician Fire: Ranking Fire Officer Bomb Threat: Ranking Police Officer Civil Disturbance: Ranking Police Officer Radioactive or Chemical Spills: Ranking Fire Officer Responsible Safety Officer Special Toxic Clean Up crew or alternate Power Outage: Pacific Gas and Electric or local Plant Power Engineer Mechanical Utility Failures: Construction and Maintenance Department Superintendent Structural Plant Failures: Engineering Department Head or alternate Landslide: Engineering Department Head or alternate In most emergencies the person who should be in charge is obvious. However, an emergency might arise that requires the major involvement of more than one emergency-response group. In such a case the ultimate authority among those on the scene may not be obvious. In this event, management should be consulted for direction.

10.9 Building Emergency & Evacuation Plan

THIS PLAN IS SETUP TO SAFELY AND ORDERLY EVACUATE ALL PERSONNEL IN THE EFFECTED AREA.

The first person noticing the EMERGENCY shall make all other Employee/Visitors aware of the EMERGENCY by using the “ALL PAGE” button on the Intercom system.

THE MESSAGE SHALL BE MADE IN A CLEAR AND CALM MANNER, THE TYPE AND LOCATIONS OF THE EMERGENCY SHALL BE REPORTED.

UPON HEARING THE ANNOUNCEMENT ALL PERSONNEL IN EFFECTED AREA SHALL IN AN ORDERLY AND SAFE MANER EVACUATES THE EFFECTED AREA USING THE NEAREST SAFE EXIT.

THE LEAD ASSOCIATE FOR THIS AREA SHALL MAKE A VISUAL INSPECTION OF THE AREA TO INSURE ALL PERSONNEL HAVE SAFELY LEFT THE AREA.

ALL PERSONNEL SHALL REPORT TO THEIR DESIGNATED REPORTING AREA AND REMAIN IN THIS AREA FOR A HEAD COUNT UNTIL THEY ARE RELEASED BY THE LEAD ASSOCIATE. **NO PERSONNEL MAY REENTER THE AREA UNTIL THE EMERGENCY HAS BEEN CLEARED BY THE PERSONNEL REASONABLE FOR THE REQUIRED ACTION TO RESOLVE THE EMERGENCY.**
THE LEAD ASSOCIATE IS THE ONLY PERSON TO CALL FOR OUTSIDE ASSISTANCE.

THE LEAD ASSOCIATE SHALL ASSIGN SOME ONE TO CONTACT THE PROPER PERSONNEL TO BE CONTACTED TO IMPLEMENTATION OF THE PLAN OF ACTION.

BELOW IS THE LISTED REPORTING AREA FOR PERSONNEL:

FRONT OFFICE PERSONNEL (PARKING LOT NEXT TO SERVICE SHOP)
MODULAR 1 AND 2 PERSONNEL (PARKING LOT NEXT TO POLE BARN)
SHOP PERSONNEL (PARKING LOT NEXT TO POLE BARN)
SERVICE SHOP PERSONNEL (PARKING LOT IN FRONT OF MAIN OFFICE)

A specific emergency plan for each building or facility must be prepared under the direction of the Building Manager. A Building Manager and Deputy Manager must be appointed and oriented for each building or complex. Generally, the Building Manager is the person in charge of a building or facility. The Building Manager has specific responsibility for the preparation, updating, and implementation of the emergency plan for this area. This responsibility includes recommending personnel to attend indoctrination and training programs. Specifically, each plan must contain the following information and procedures as appropriate for each building: The names of the Building Manager, Deputy Manager, and Assistant Manager(s). A list of people with specific duties during an emergency and a description of their duties. For example, specific people should be assigned to supervise evacuation and to carry out a rapid search of the area (assuming this can be done safely). Floor plans showing evacuation routes, the location of shutoff switches and valves for the utility systems (water, gas, electricity), and the locations of emergency equipment and supplies (including medical). Indications on the floor plans of areas where specific hazards (i.e., toxic, flammable, and/or radioactive materials) exist. Location and description of special hazards or hazardous devices should be included in the text together with shutdown procedures if applicable. Designation of a primary assembly point for evacuees, well away from the building. An alternate site should also be designated in case the first choice cannot be used. Reentry procedures. No one should reenter an evacuated building or area without specific instructions from the Building Manager or other person in charge. Department Head and Supervisor responsibilities regarding emergency preparedness and action procedures. Emergency plans for facilities or equipment requiring an Operational Safety Procedure

(OSP). The evacuation plans will also be posted on each facility map with the directions listed for the safest evacuation.

10.10 Operation Of Critical Procedures Or Operations

Depending on the type of emergency and the severity of risks involved, certain employees have been designated to remain behind during an evacuation in an emergency situation. These employees are titled as “Emergency Critical Operations Specialist” or “ECOS”. Each ECOS has been trained in the rapid procurement of safe operations of critical plant operations. These employees have a specific job to perform if the situation allows. They are to see that the overall safety of the plant or facility so that the emergency situation at hand does not increase the severity of the overall emergency. At no time are the ECOS to put their lives or overall safety at risk.

10.11 Operational Safety Procedures

OSP's for individual facilities or pieces of equipment must include emergency plans for the facilities or equipment.

10.12 Supervisors Responsibilities

During an emergency, the supervisor must: Ensure that those under his or her supervision are familiar with the plan for the building, particularly the recommended exit routes and how to report an emergency. Render assistance to the person in charge during an emergency, as required. Maintain familiarity with the shutdown procedures for all equipment used by those under his or her supervision. Know the location and use of all safety equipment on his or her floor. Keep employees from reentering an evacuated area until reentry is safe.

10.13 No Loitering Policy

Employees not involved in the emergency must stay away from the scene and follow the instructions issued over the public address system or directly from the person in charge. The sounding of a fire bell means immediate evacuation by the nearest exit. Employees must not reenter an area that they have evacuated until notified that it is safe to return.

10.14 Employee Responsibilities

Employees, other than emergency-response groups, involved in any emergency greater than a minor incident are expected to act as follows: If there is threat of further injury or further exposure to hazardous material, remove all injured persons, if possible, and

leave the immediate vicinity. If there is no threat of further injury or exposure, leave seriously injured personnel where they are. Report the emergency immediately by phone. State what happened, the specific location, whether anyone was injured, and your name and phone number. Proceed with first aid or attempt to control the incident only if you can do so safely and have been trained in first aid or the emergency response necessary to control the incident. Show the ranking emergency-response officer where the incident occurred, inform him or her of the hazards associated with the area, provide any other information that will help avoid injuries, and do as he or she requests.

10.15 Emergency Action and Response Plan

THIS PLAN IS SETUP TO SAFELY AND ORDERLY EVACUATE ALL PERSONNEL IN THE EFFECTED AREA.

As stated under section 9 of this chapter. The first person noticing the EMERGENCY shall make all other Employee/Visitors aware of the EMERGENCY by using the “ALL PAGE” button on the Intercom system.

THE MESSAGE SHALL BE MADE IN A CLEAR AND CALM MANNER, THE TYPE AND LOCATIONS OF THE EMERGENCY SHALL BE REPORTED.

UPON HEARING THE ANNOUNCEMENT ALL PERSONNEL IN EFFECTED AREA SHALL IN AN ORDERLY AND SAFE MANER EVACUATES THE EFFECTED AREA USING THE NEAREST SAFE EXIT.

THE LEAD ASSOCIATE FOR THIS AREA SHALL MAKE A VISUAL INSPECTION OF THE AREA TO INSURE ALL PERSONNEL HAVE SAFELY LEFT THE AREA.

ALL PERSONNEL SHALL REPORT TO THEIR DESIGNATED REPORTING AREA AND REMAIN IN THIS AREA FOR A HEAD COUNT UNTIL THEY ARE RELEASED BY THE LEAD ASSOCIATE. **NO PERSONNEL MAY REENTER THE AREA UNTIL THE EMERGENCY HAS BEEN CLEARED BY THE PERSONNEL REASONABLE FOR THE REQUIRED ACTION TO RESOLVE THE EMERGENCY.**
THE LEAD ASSOCIATE IS THE ONLY PERSON TO CALL FOR OUTSIDE ASSISTANCE.

THE LEAD ASSOCIATE SHALL ASSIGN SOME ONE TO CONTACT THE PROPER PERSONNEL TO BE CONTACTED TO IMPLEMENTATION OF THE PLAN OF ACTION.

BELOW IS THE LISTED REPORTING AREA FOR PERSONNEL:

FRONT OFFICE PERSONNEL (PARKING LOT NEXT TO SERVICE SHOP)

MODULAR 1 AND 2 PERSONNEL (PARKING LOT NEXT TO POLE BARN)
SHOP PERSONNEL (PARKING LOT NEXT TO POLE BARN)
SERVICE SHOP PERSONNEL (PARKING LOT IN FRONT OF MAIN OFFICE)

This program covers actions to be taken under specific emergency conditions such as fire, tornado, medical emergencies or other emergency, including release (spill) of, or substantial threats of release of, hazardous substances within the Alin Machining Company dba Power Plant Services facility.

10.15.a Scope and purpose

To adequately protect the safety of all employees at Alin Machining Company dba Power Plant Services , specific actions are called for under certain conditions. These conditions, or emergencies include, but are not limited to:

1. Fire;
2. Gas leak;
3. Tornado or other severe weather condition;
4. Spill or release of hazardous substances;
5. Medical emergency.
   - Medical and first aid
   - Medical emergencies that appear to be sudden cardiac arrest

The following sections describe procedures or actions to be taken for each of these emergency conditions. The program elements may describe different tasks for various personnel.

10.15.b Head count

- Visitors
  - The signatures in the “Alin Machining Company dba Power Plant Services Visitor Book” will determine head count. The receptionist will take the book to the north parking lot for the head count.
- Hourly Employees
  - Head count will be determined by the time collection system for hourly employees. A notebook computer with Internet access will be available in the north parking lot meeting area to run the report of employees clocked in.
- Salaried employees
  - Receptionist will maintain a list of salaried employees in the facility by monitoring the “Out of Office” notifications. The receptionist will take the list to the north parking lot for the head count.

Off shift Supervisors are responsible to know who is in their department for head count in case of evacuation.

10.15.c Fire

First person on the scene.

Assess scene safety

- Determine the extent of the problem.
- If there are injuries send someone to get a First Responder and the AED
- If fire can be controlled and extinguished, use extinguisher to put out fire if not, call 911.
- If fire cannot be put out after one extinguisher has been used send someone to call 911 and to provide the dispatcher with location and emergency details. Meet the Fire Department at the North end of the high bay and give them the blue folder from the foreman's office. Direct the Fire Department to area if possible.
- If 911 is called the first person on the scene must make a judgment call weather or not to evacuate the area.
- When evacuation is required:
    - Send someone to set off the evacuation alert
    - In cases of facility evacuation, all individuals must proceed directly to the closest exit and meet at the north end parking lot for a head count.

10.15.d Gas leak

First person on the scene.

Assess scene safety

- Determine the extent of the problem.
    - Turn off any ignition sources.
    - Notify maintenance department.
- If there are injuries send someone to get a First Responder and the AED
- The first person on the scene must make a judgment call weather or not to evacuate the area.
- When evacuation is required:
    - Send someone to set off the evacuation alert
    - Call 911 and provide the dispatcher with location and emergency details. Meet the Fire Department at the North end of the high bay and give them the blue folder from the foreman's office. Direct the Fire Department to area if possible.
    - In cases of facility evacuation, all individuals must proceed directly to the closest exit and meet at the north end parking lot for a head count.

10.15.e Tornado or other severe weather condition

Receptionist

- If notified of severe weather conditions by the weather channel.
    - The weather Channel will call and give a severe weather alert to the Alin Machining Company dba Power Plant Services main line, to the Supervisors Office and to the Operations Manager. The Weather Channel

will also send an Email message to Alin Machining Company dba Power Plant Services 's CFO and the Safety Manager. The Weather Channel will send a text message to the Director, Shop & Field Services on his/her cell phone.

- In event of alert notify the first available senior staff member for instructions.
- If instructions are to take shelter notify the offices and shop to take shelter. Assign first available employees to go to the shop and the three office areas to alert them to take shelter.
    - In the event of a tornado or severe weather, proceed to internal areas of the building with no windows. These include, the "block" building on the east side of building, shop restrooms and the shop offices.

Off shifts

- Supervisors must make the judgment call as to taking shelter. If taking shelter notify all employees to take shelter in the internal areas of the building with no windows. These include, the "block" building on the east side of building, shop restrooms and the shop offices.

10.15.f Hazardous material spill or release

For further details refer to the chapter titled ''Emergency Plan for Hazardous Spills''

First person on the scene.

Assess scene safety

- Determine the extent of the problem.
- If there are injuries send someone to get a First Responder and the AED
- Contain/clean up the spill use personal protective equipment if required.
- Notify one of the facility contacts from the list in the blue folders in the foreman's office.
- Facility contact follow spill response procedures
- The first person on the scene will make a judgment call to determine if evacuation is necessary. Causes could be but are not limited to a large spill of flammable or poisonous chemicals.
    - If evacuation is called for:
        - Send someone to set off the evacuation alert
        - In cases of facility evacuation, all individuals must proceed directly to the closest exit and meet at the north end parking lot for a head count.

10.15.g Medical emergency

Responsibilities

- First person on the scene.
    - Assess scene safety
    - If required send someone to get a First Responder and the AED

- If required send someone to call 911 and to provide the dispatcher with location and emergency details. Meet the emergency medical services and lead them to the victim.

- Medical Director – The Medical Director has authority over the entire AED program and its participants. General responsibilities include the establishment and maintenance of the guidelines for care provided in this protocol. In addition, the medical director also ensures quality assurance, compliance to protocols, proper training and provides positive reinforcement to individuals and the system, as well as corrective measures.

  Medical Director: Dr. Michael W. Lischak from Columbia St. Mary's
  Phone: ( )
  Pager Number: ( )
  Fax:
  E-mail:

- AED Coordinator – The AED Coordinator is an employee of Alin Machining Company dba Power Plant Services who is the primary liaison between the company's AED program and the Medical Director This person has the responsibility for maintaining all equipment and supplies, organizing training programs and regular retraining programs, forwarding any incident data to the Medical Director and holding post-incident debriefing sessions for any employee involved. Currently our company does not have an AED program.

  AED Coordinator:
  Phone Number:
  E-mail:

- First Responders – The First Responders are specific individuals that are trained in First Aid, CPR and to use an AED in a sudden cardiac arrest emergency. These individuals operate under the direction of the Medical Director. The names of the First Responders are posted in various locations in the Alin Machining Company dba Power Plant Services facility including the First Aid Cabinets and on the AED cabinet.

10.15.h Medical and first aid

Injury occurs at Alin Machining Company dba Power Plant Services Facility
If serious injury or illness occurs:

1. Dial **911** for medical assistance and state:
   a. Your Name
   b. Company Name
   c. Describe Nature and Severity of the injury
   d. Describe building location

Do not hang up unless released by the emergency operator.

2. Assign an individual the responsibility for meeting the emergency responder team and escorting them to the specific location of the victim.

3. Interim first aid may be provided by one of Alin Machining Company dba Power Plant Services 's volunteer first responders.
4. Keep the victim still and comfortable until help arrives. Do not move the victim.
5. Unless the victim objects, the victim shall be taken to the closest emergency medical facility. If the victim is conscious and oriented, the individual has the right to determine his/her own health care needs and the response to those needs.
6. Assign an individual to go with the victim. The escort should also take along the required forms. These include: a signed United Heartland Work Status Report/Medical Service Form and the Alin Machining Company dba Power Plant Services Testing Authorization Form. These are provided in the red emergency folders.
7. Immediately following the accident, the supervisor should complete the Incident / Accident Investigation Report and the Employer's First Report of Injury or Disease. It is important to complete these forms as soon as possible while the events leading up to the accident are still fresh in everyone's mind.
    a. The Employer's First Report of Injury or Disease is to be forwarded to Employee Services.
    b. The Incident / Accident Form is to be forwarded to the Quality/Safety Manager.
8. The Quality/Safety Manager updates the OSHA 300 Summary Log based on the information provided on the Incident / Accident Form.

If minor injury or illness occurs:

1. The victim may:
    a. Be attended to by a volunteer first responder, if available
    b. Visit or be escorted to a medical facility (clinic or hospital)
    Clinic:
    Gateway Medical Clinic (414) 773-4926
    807 S. 70th Street
    West Allis, Wi 53214
    Hospital:
    Columbia St. Mary's Hospital Emergency Room (414) 291-1200
    2323 N. Lake Drive
    Milwaukee, Wi 53211

    c. Visit personal physician.

2. If the victim is in need of outside medical treatment, assign an individual to go with the victim. The escort should also take along the required forms. These include: a signed United Heartland Work Status Report/Medical Service Form and the Alin Machining Company dba Power Plant Services Testing Authorization Form. These are provided in the red emergency folders.
3. Immediately following the accident, the supervisor should complete the Incident / Accident Investigation Report and the Employer's First Report of Injury or Disease. It is important to complete these forms as soon as possible while the events leading up to the accident are still fresh in everyone's mind.

a. The Employer's First Report of Injury or Disease is to be forwarded to Employee Services.
b. The Incident / Accident Form is to be forwarded to the Quality/Safety Manager. The Quality/Safety Manager updates the OSHA 300 Summary Log if the injury is defined as "Recordable".

Injury occurs at Customer Facility

If serious injury or illness occurs follow the emergency protocol at site.

The following is provided in the event an emergency protocol does not exist or has not been communicated:

1. Dial **911** for medical assistance and state:
    a. Your Name
    b. Company Name
    c. Describe Nature and Severity of the injury
    d. Describe building location

Do not hang up unless released by the emergency operator.

2. Assign an individual the responsibility for meeting the emergency responder team and escorting them to the specific location of the victim.
3. Keep the victim still and comfortable until help arrives. Do not move the victim.
4. Unless the victim objects, they should be taken to the nearest 24 hour emergency medical facility as provided in the Field Service Assignment Sheet (FSAS). Note however, that if the victim is conscious and oriented, the individual has the right to determine his/her own health care needs and the response to those needs.
5. Assign an individual to go with the victim. The escort should also take along the required forms. These include: a signed United Heartland Work Status Report/Medical Service Form and the Alin Machining Company dba Power Plant Services Testing Authorization Form. These are provided in the red emergency folders.
6. Immediately following the accident, the supervisor should complete the Incident / Accident Investigation Report and the Employer's First Report of Injury or Disease. It is important to complete these forms as soon as possible while the events leading up to the accident are still fresh in everyone's mind.
    a. The Employer's First Report of Injury or Disease is to be forwarded to Employee Services
    b. The Incident / Accident Form is to be forwarded to the Quality/Safety Manager.

7. The Quality/Safety Manager updates the OSHA 300 Summary Log based on the information provided on the Incident / Accident Form.

If minor injury or illness occurs:

1. The victim may:
    a. Be attended to by a volunteer first responder, if available
    b. Visit or be escorted to a medical facility (clinic or hospital)
    c. Visit personal physician.
2. If the victim is in need of outside medical treatment, assign an individual to go with the victim. The escort should also take along the required forms. These include: a signed United Heartland Work Status Report/Medical Service Form and the Alin Machining Company dba Power Plant Services Testing Authorization Form. These are provided in the red emergency folder.
3. Immediately following the accident, the supervisor should complete the Incident / Accident Investigation Report and the Employer's First Report of Injury or Disease. It is important to complete these forms as soon as possible while the events leading up to the accident are still fresh in everyone's mind.
    a. The Employer's First Report of Injury or Disease is to be forwarded to Employee Services.
    b. The Incident / Accident Form is to be forwarded to the Quality/Safety Manager. The Quality/Safety Manager updates the OSHA 300 Summary Log if the injury is defined as "recordable" by OSHA.

Procedure for medical emergencies that appear to be sudden cardiac arrest.

First Responder

Assess the situation and the victim. Care for the victim with the proper First Aid, if unconscious.

Check for "Do Not Resuscitate" bracelet.

If there is no bracelet do the following:

Assess Airway, perform head-tilt, chin lift to open airway.

Assess breathing, look, listen, feel if breathing is absent, use barrier mask to deliver 2 rescue breaths.

Perform CPR under the current CPR requirements or until the AED arrives.

Compress and release chest 30 times (rate 100compressions/minute)

Ventilate give 2 rescue breaths.

Continue CPR 30 compressions/2 rescue breaths.

When defibrillator arrives:

Place AED near head of patient on same side as rescuer.

Turn on the AED.

Bare and prepare chest (cut or tear away clothing, if excessive chest hair, shave or clip; dry the chest if wet.

Follow AED's verbal and visual prompts.
Apply electrodes (follow drawing on pads).
Allow AED to analyze.
If indicated, deliver shock by pressing the orange button.
Continue care per AED treatment algorithm.

When emergency medical services arrive communicate any important information such as:

Victim's name.
Any known medical problems, allergies or medical history.
Time victim was found.
Initial and current condition of victim.
Number of shocks delivered.
Length of time defibrillator has been used.
Help emergency medical services personnel as requested.

Post-Use Procedure

The AED Coordinator will do the following after any use:

Notify Medical Director
Remove used PC data card and replace it with a spare. Label used PC data card with patient information and deliver to appropriate personnel according to medical protocol or local guidelines.
Conduct employee incident debriefing as needed.
Complete incident follow-up report as deemed necessary by the Medical Director.
Restock any used electrode pads, batteries, razors or gloves. Inspect unused supplies for any damage or old expiration dates.
Remove and replace battery in the AED and do a battery insertion test (BIT) prior to replacing AED into service.
Clean AED if needed.

10.16 Emergency Action Plan Contacts for Explanation

The name and/or job title of every employee who is in charge of or responsible for implementing the emergency action plan must be listed and made available to employees or posted in a common place. This list must be made available to employees so that these key people may be contacted by employees who need more information about the plan or an explanation of their duties under the plan.

10.17 Training In Safe And Orderly Evacuations of Employees

Our company has specific designated lead personnel that will be trained in the safe and orderly evacuations of all employees. This training shall occur every 6 months. We also

perform mock safety evacuations as outlined in section 9 under Building Emergency and Evacuation Plan. THIS PLAN IS SETUP TO SAFELY AND ORDERLY EVACUATE ALL PERSONNEL IN THE EFFECTED AREA.

10.18 Automated External Defibrillation (AED) Treatment Algorithm

10.19 Facility Map

Insert Facility Map in this Section – Facility Maps will be located at each plant or location with escape and exit routes posted.

Chapter 11 - Fall Protection

11.1 Overview

Alin Machining Company dba Power Plant Services shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards.

Alin Machining Company dba Power Plant Services shall verify the compliance of employee training describe above and will document the training with written certification records including:

- the name or other identity of the employee trained;
- the date(s) of the training; and
- the signature of Alin Machining Company dba Power Plant Services 's 'competent person' who conducted the training.

If Alin Machining Company dba Power Plant Services relies on training conducted by another employer or completed prior to the effective date of this section, the certification record shall indicate the date that Alin Machining Company dba Power Plant Services determined the prior training was adequate **rather than** the date of actual training.

The latest training certification shall be maintained on record at Alin Machining Company dba Power Plant Services .

11.2 Retraining

When Alin Machining Company dba Power Plant Services has reason to believe that any affected employee who has already been trained does not have the understanding and skill required in section 11.1 , Alin Machining Company dba Power Plant Services shall retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:

- Changes in the workplace render previous training obsolete; or
- Changes in the types of fall protection systems or equipment to be used render previous training obsolete; or
- Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.

11.3 Employee Exposure

Alin Machining Company dba Power Plant Services fall protection safety starts with an inspection every week and at every new job site to determine if the walking/working surfaces on which its employees are to work will have the strength and structural

integrity to support employees safely. Employees are authorized to work only on approved surfaces and only when those surfaces have the requisite strength and structural integrity.

11.3.a Unprotected Sides and Edges

Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet (1.8 m) or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

11.3.b Other Measures

Alin Machining Company dba Power Plant Services fall protection plan may include a written discussion of other measures that might be implemented to reduce or eliminate the fall hazard for workers who cannot be provided with protection (without regards to the use of PPE) from the conventional fall protection systems. In this event, Alin Machining Company dba Power Plant Services will document the reasons why the use of conventional fall protection systems (guardrail systems, personal fall arrest systems, or safety nets systems) is infeasible or why their use would create a greater hazard.

For example, Alin Machining Company dba Power Plant Services shall discuss the extent to which scaffolds, ladders, or vehicle mounted work platforms can be used to provide a safer working surface and thereby reduce the hazard of falling.

11.4 Qualifications

The fall protection plan shall be prepared by an OSHA defined, qualified ‘competent person’ (see section 11.6) with each plan developed specifically for the each job site and systematically maintained to be up to date.

Alin Machining Company dba Power Plant Services fall protection program mandates that the ‘competent person’ must be qualified in the following areas:

- The nature of fall hazards in the work area;
- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used;
- The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used;
- The role of each employee in the safety monitoring system when this system is used;
- The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs;
- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection; and
- The role of employees in fall protection plans;

- The standards contained in this subpart

11.5 Controlled Access Zones

The fall protection plan will also identify each location where conventional fall protection methods cannot be used. These locations shall then be classified as controlled access zones and Alin Machining Company dba Power Plant Services fall protection program contains the following criteria.

Controlled access zones and their use shall conform to the following provisions:

- When used to control access to areas where leading edge and other operations are taking place the controlled access zone shall be defined by a control line or by any other means that restricts access.
- When control lines are used, they shall be erected not less than 6 feet (1.8 m) nor more than 25 feet (7.7 m) from the unprotected or leading edge, except when erecting precast concrete members.
- When erecting precast concrete members, the control line shall be erected not less than 6 feet (1.8 m) nor more than 60 feet (18 m) or half the length of the member being erected, whichever is less, from the leading edge.
- The control line shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge.

When and where there has been no other alternative methods implemented, Alin Machining Company dba Power Plant Services will implement a safety monitoring system in conformance with section 11.6 .

11.6 Designated Safety Monitor

Alin Machining Company dba Power Plant Services has designated The Competent Person whose qualifications meet the OSHA definition of ‘competent person’ to be the ‘safety monitor’ for the company. They will monitor all fall exposures for the safety of other employees. Alin Machining Company dba Power Plant Services will take an active part to ensure that the ‘safety monitor’ complies with the following requirements:

- The safety monitor shall be competent to recognize fall hazards;
- The safety monitor shall warn the employee when it appears that the employee is unaware of a fall hazard or is acting in an unsafe manner;
- The safety monitor shall be on the same walking/working surface and within visual sighting distance of the employee being monitored;

- The safety monitor shall be close enough to communicate orally with the employee; and
- The safety monitor shall not have other responsibilities which could take the monitor's attention from the monitoring function.

11.7 Accident Procedures

In the event an employee falls, or some other related, serious incident occurs, (e.g., a near miss) Alin Machining Company dba Power Plant Services shall investigate the circumstances of the fall or other incident to determine if the fall protection plan needs to be changed (e.g. new practices, procedures, or training) and shall implement those changes to prevent similar types of falls or incidents.

11.8 ANSI & ASTM Requirements

OSHA and the ANSI A10.14-1991 American National Standard for Construction and Demolition Operations recommend that fall arrest and restraint equipment be used in accordance with the manufacturer's instructions.

Fall protection equipment will meet the requirements of applicable ANSI, ASTM, or OSHA requirements. When we purchase new equipment and raw materials for use in fall protection systems, the applicable ANSI & ASTM requirements will be met.

11.8.a Selection and Equipment Use

The kind of personal fall arrest system selected should match the particular work situation, and any possible free fall distance should be kept to a minimum. Consideration should be given to the particular work environment.

For example, the presence of acids, dirt, moisture, oil, grease, etc., and their effect on the system, should be evaluated. Hot or cold environments may also have an adverse effect on the system. Wire rope should not be used where an electrical hazard is anticipated.

Alin Machining Company dba Power Plant Services will have means available to promptly rescue an employee should a fall occur, since the suspended employee may not be able to reach a work level independently.

Chapter 12 - Fire Protection / Extinguishers

12.1 Training and Education

Where Alin Machining Company dba Power Plant Services has provided portable fire extinguishers for employee use in the workplace, Alin Machining Company dba Power Plant Services shall also provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved with incipient stage fire fighting.

Alin Machining Company dba Power Plant Services shall provide every employee with the training and education required in above paragraph of this section upon initial employment and at least annually thereafter.

12.2 Fire Fighting Equipment

Alin Machining Company dba Power Plant Services shall maintain and inspect, at least annually, firefighting equipment to assure the safe operational condition of the equipment. Portable fire extinguishers and respirators shall be inspected at least monthly.

Alin Machining Company dba Power Plant Services shall record the annual maintenance date and retain this record for one year after the last entry or the life of the shell, whichever is less.

Fire extinguishers which have been listed or approved by a nationally recognized testing laboratory shall be used to meet the requirements of this section.

Note Reference: Portable fire extinguishers shall be inspected periodically and maintained in accordance with Maintenance and Use of Portable Fire Extinguishers, NFPA No. 10A-1970.

Chapter 13 - First Aid / CPR

13.1 Head of Emergency First Aid

In the absence of an infirmary, clinic, hospital, or physician, that is reasonably accessible in terms of time and distance to the worksite and which is available for the treatment of injured employees, Alin Machining Company dba Power Plant Services has authorized The Competent Person to be available at the worksite to render first aid.

The Competent Person shall make available on request, a valid certificate in first-aid training from the U.S. Bureau of Mines, the American Red Cross, or equivalent training that will be verified by documentary evidence.

13.2 General

13.2.a Jobsite Specific

Provisions shall be made prior to commencement of the project for prompt medical attention in case of serious injury, including a written report is available at Alin Machining Company dba Power Plant Services .

13.2.b First Aid Kits

All first aid supplies shall be easily accessible when required. Every Alin Machining Company dba Power Plant Services First Aid Kit shall consist of the follow items:

1910.151 Appendix A - OSHA First Aid Kit

OSHA Wall Mount First Aid Kit - Exceeds OSHA Guidelines 352 pieces: 40-3/8x1 3/4 55-3x3/4 3-Butterfly 12-Wound Closure Strips 1-Elastic Wrap 3-Knuckle 1-Ad. Tape Roll 1/2x2.5yds 1-Ad. Tape Roll 1 inch x 5yds 1-Triangular Bandage 36 inches x 36 inches x 51 inches; 10-Cottontip App. 4-Fingersplints 12-2x2 10-4x4 2-Trauma Pads 2-Gauze Rolls 6-Gloves 2-Chem. Cold Packs 1-Metal Tweezers 1-Metal Scissor 2-Burn Cream Packs 2-Lip Ointment Packs 5-Antibacterial Ointment Packs 39-Antibacterial Towelettes 39-Alcohol Prep Pads 12-Povidone Iodine Prep Pads 12-Sting Relief Pads 10-Antacid Tabs 16-Ibuprofen Tabs 16-Electrolyte Tabs 16-Non-Aspirin Tabs 1-Sterile Water Packet 1-Thermal Blanket 5-Insect Repellent Pack 2-Ice Bags 1-Arm Splint 1-First Aid Instruction Guide

The contents of the first aid kit shall be placed in a weatherproof container with individual sealed packages for each type of item, and shall be checked by Alin Machining Company dba Power Plant Services before being sent out on each job and at least weekly on each jobsite by The Competent Person to ensure that the expended items are replaced.

13.3 Emergency Procedures / Requirements

Proper equipment for prompt transportation of the injured person to a physician or hospital, or a communication system for contacting necessary ambulance service, shall be provided at each job site. The Competent Person will also perform on a weekly basis, a inspection review of Alin Machining Company dba Power Plant Services ’s written emergency procedures for each job site.

They are also responsible for, in areas where 911 is not available, the telephone numbers of the physicians, hospitals, or ambulances to be conspicuously posted.

13.4 Eyewash

Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use. The Competent Person will ensure that, when required, Alin Machining Company dba Power Plant Services will have a certified eye-wash device onsite at all times.

Chapter 14 - Gas Hazards

14.1 Gas Hazard Awareness Training

Alin Machining Company dba Power Plant Services will assure that their employees are trained in Gas Hazards before initial assignment and annually thereafter. This training for Gas Hazard Awareness will be documented in the training and documentation records and kept on file with the ‘‘RSO’’ and / or the Human Resource Department. These documents will be available for review upon request.

14.2 Minimum Training Requirements

Training requirements for the Gas Hazard Awareness Training shall include at a minimum the general characteristics of gases, oxygen deficient and enriched atmospheres, symptoms of overexposure, monitor use, use of respiratory protection equipment and rescue procedures as outlined below:

Gas Hazard Awareness training should include at a minimum:

a. Locations of alarm stations
b. Gas Monitoring Equipment- Portable and Fixed Detection
c. Gas Alarms
d. Gas Hazards- Characteristics of gases, to include oxygen deficiency, oxygen or nitrogen enrichment, carbon monoxide and hydrogen sulfide at a minimum. Hazard training must also include any plant or department specific gases of concern. Training must include signs and symptoms of overexposure
e. Personnel Rescue Procedures
f. Use and care of Self-Contained Breathing Apparatus (SCBA)- includes donning and emergency procedures (if applicable)
g. Evacuation Procedures
h. Staging Areas – Primary and Secondary

14.3 Personal Portable Gas Detectors

Each employee shall use a portable gas detector / monitor as required in all high gas hazard areas.

The gas monitor must be calibrated per manufacturer's recommendations and contain a current calibration sticker on the monitor providing the date of calibration.

Bump test are required to be completed at the beginning of each day the monitor is in use per the requesting owner client and manufacturer's guidelines to insure the monitor is functioning correctly.

14.4 Respiratory Protection Program

Alin Machining Company dba Power Plant Services has developed and is currently implementing a respiratory protection program that is in full compliance and in accordance with 29CFR 1910.134.

14.5 Site Specific Contingency/Emergency Plans

Alin Machining Company dba Power Plant Services shall insure all employees are aware of the Owners contingency plan provisions including evacuation routes and alarms. Employees should participate in emergency evacuation drills and practice rescue procedures.

Chapter 15 - General Waste Management

15.1 Introduction

This chapter will outline the way to handle wastes, trash and the scrap materials that will be generated on each job. The requirements and training procedures will be outlined as well as recycling procedures.

15.2 General Waste Management

When waste is generated at the work site, Alin Machining Company dba Power Plant Services will ensure that it stored and handled safely using a combination of:

(a) any means of identification, and
(b) instruction of workers on the safe handling of the waste, trash, scrap or hazardous waste.

No person shall dispose of any hazardous waste or materials that will cause harm to the environment, public health or safety, recycling all items possible.

It is the job of the Safety Director or Jobsite Foreman/Supervisor to be accountable and responsible for the proper disposition of waste that is generated at each jobsite.

15.2.a Employee and Worker Waste Management Training

Alin Machining Company dba Power Plant Services will train all employees on the proper handling, storage, and disposal of waste generated at each jobsite. This may include general instruction on disposal of non-hazardous wastes, trash, or scrap materials. If at any time, wastes generated are classified as hazardous, employees must be trained to ensure proper disposal.

15.3 Planning And Assigned Responsibilities

The Environmental – General Waste Management Program will take into consideration and control of the required waste disposal of scrap materials and trash at each jobsite. Prior to beginning or starting a new job, Alin Machining Company dba Power Plant Services will assess the worksite and job being performed in order to ensure that there will be enough proper containers in order for the waste that will be generated to be properly disposed or stored until it can be removed.
This is the job of the Safety Director and the Job Site Foreman or Supervisor. Most of the time we will have the same types of waste, the amounts may vary. Each job will be assessed for the types and amounts of waste. Each site and job evaluation will also include:

- Assess the potential negative effects upon the environment for all jobs in the pre-job planning process.
- Develop strategies to implement an action plan to ensure that impacts and risks are managed.

- On-site management in control of the job must report issues of non-compliance in a timely manner.
- Provide relevant information to all stakeholders, including: On-Site personnel, customers, suppliers, and the public and corporate management.
- Identify, inspect and monitor potential exposures and their impact on company.
- Action plans and controls, site specific may need to be developed to detect and minimize unanticipated incidents and ensure that all applicable laws and regulations are adhered to.
- In a timely and efficient manner corrective steps for day to day management and control of identified environmental risks will be taken based on established industry guidelines and procedures.
- This must include all required permits and licenses: handling, use, transportation and disposal of hazardous materials; and statutory reporting procedures.
- Identify the necessary and required Personal Protective Equipment (PPE) for the jobsite worker's who will be disposing of such materials.

15.4 Coordinating Waste Disposal with Site Owner

Alin Machining Company dba Power Plant Services will coordinate with the site or location owner in regards to the waste disposal plan to ensure proper disposal of wastes or scrap materials. Alin Machining Company dba Power Plant Services will make sure that the owner is aware of whether wastes and scrap materials will be taken off site by the contractor or will be disposed of on the owner's site. The meeting will involve the Safety Director and/or the Job Site Foreman or Supervisor. We at Alin Machining Company dba Power Plant Services are here to perform work in order to please the owner / client or site owner and we will work to our best ability to appease our customers / clients.

15.5 Personal Protective Equipment (PPE)

15.5.a Workers Responsibility

A worker is responsible for providing clothing needed for protection against the natural elements, general purpose work gloves, and appropriate footwear including safety footwear, and safety headgear. Proper gloves shall be worn at all times when working with waste disposal.

15.5.b PPE Provided

Alin Machining Company dba Power Plant Services is responsible for providing, at no cost to the worker, all other items of personal protective equipment required by this Regulation.

15.5.c Selection, Use And Maintenance Of PPE

Personal protective equipment must:

(a) be selected and used in accordance with recognized standards, and provide

effective protection,
(b) not in itself create a hazard to the wearer,
(c) be compatible, so that one item of personal protective equipment does not make another item ineffective, and
(d) be maintained in good working order and in a sanitary condition.

15.6 Demolition - Disposal of Waste Material

(a) Whenever waste material is dropped to any point lying outside the exterior walls of the building, enclosed chutes shall be used unless the area is effectively protected by barricades, fences or equivalent means. Signs shall be posted to warn employees of the hazards of falling debris.

(b) When chutes are used to load trucks, they shall be fully enclosed. Gates shall be installed in each chute at or near the discharge end. A Alin Machining Company dba Power Plant Services qualified person shall be assigned to control the operation of the gate, and the backing and loading of trucks.

(c) Enclosed chutes should be designed for free flow of material, but if clogging or stoppages occur, employees shall not remove material from the chutes with their hands. Picks or other suitable implements shall be used for this purpose.

(d) Any chute opening, into which employees dump debris by hand, shall be protected by a guardrail. Any open spaces between the chute and the edge of floor openings through which the chute passes shall be covered over.

(e) When operations are not in progress, the discharge end of the chute shall be securely closed off, or the area barricaded or fenced.

(f) When debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped shall be completely enclosed with barricades not less than 42 inches high, and not less than six feet back from the projected edge of the opening above. Signs warning of the hazard of falling materials shall be posted at each level. Debris removal shall not be permitted in this lower drop area until debris handling ceases above.

(g) All scrap lumber, waste material, and rubbish shall be removed from the immediate work area as the work progresses.

(h) All solvent waste, oily rags, and flammable liquids shall be kept in fire resistant covered containers until removed from the work site.

(i)
(1) Where the material is dumped from mechanical equipment or wheelbarrows, a securely attached toeboard or bumper, not less than six inches thick and six inches

high, shall be provided at each chute opening.
(2) Chutes shall be designed and constructed of such strength as to eliminate failure due to impact of materials or debris loaded therein.

(j) All material chutes, or sections thereof, at an angle of more than 45 degrees from the horizontal, shall be entirely enclosed, except for openings equipped with closures at or about floor level for the insertion of materials. The openings shall not exceed 48 inches in height measured along the wall of the chute. At all stories below the top floor, such openings shall be kept closed when not in use.

15.7 Proper Handling and Storage

Alin Machining Company dba Power Plant Services will ensure that project related wastes and scrap materials are stored and maintained in an organized fashion. This will encourage the proper disposal and minimize risks, spills, impact to the environment and hazards to employee. During outdoor activities, receptacles must be covered to prevent dispersion of waste materials and to control the potential for run-off. Alin Machining Company dba Power Plant Services will have, as outlined in the above mentioned section, proper waste receptacles for trash and materials that may be reused or recycled during a project.

15.8 Recycling

Alin Machining Company dba Power Plant Services , through the Safety Director or Jobsite Foreman/Supervisor, will encourage its employees on proper segregation of waste materials to ensure opportunities for reuse or recycling. We will whenever possible and practical recycle as much of the waste and materials.

Chapter 16 - Hand and Power Tools

16.1 Condition of Tools

All hand and power tools and similar equipment, whether furnished by Alin Machining Company dba Power Plant Services or by the employee, shall be kept and maintained in a safe condition.

When power operated tools are designed to accommodate guards, they shall be equipped with such guards when in use. The guard may not be manipulated in any way that will comprise its integrity or compromise the protection in which it was intended. Guarding shall meet the requirements set forth in ANSI B15.1

16.2 Personal Protective Equipment

Employees using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases shall be provided with the particular personal protective equipment necessary to protect them from the hazard.

All personal protective equipment shall meet the requirements of this program and will be maintained in good working order.

16.3 Non-Compliant Machinery / Tools & Equipment

The use of any machinery, tool, material, or equipment which is not in compliance with any applicable requirement of this program is prohibited. Such machine, tool, material, or equipment shall either be identified as unsafe by tagging or locking the controls to render them inoperable or shall be physically removed from its place of operation.

Chapter 17 - Hazard Identification and Risk Assessment

17.1 Emergency and Risk Assessment Policy

On each job site (Office, Fabrication Shop and Field), the manager and superintendent/supervisor will gather information such as the location of the nearest hospital, fire station and first aid station so as to help minimize travel time to treatment for all employees.

This information is to prevent confusion for all during an emergency situation. Superintendents /supervisors and managers will be aware of the various procedures to follow on each job site should an accident occur.

All employees are to be aware of the action required, but should also follow the instructions set by their Superintendent/Supervisor.

Alin Machining Company dba Power Plant Services has a Hazard Identification and Risk Assessment Policy and the following processes as outlined in this chapter are in place to identify potential hazards by the use of JSA's, JHA's, facility wide or area specific analysis/inspections.

	Date: April 29, 2013

Safety Director

17.2 Hazard Assessment

Our company will assess a work site and identify existing and potential hazards before work begins at the work site or prior to the construction of a new work site.

The Hazard Identification and Risk Assessment Program will provide processes to insure employees and/or sub-contractors are actively involved in the hazard identification process and hazards are reviewed with all employees concerned.

17.3 Process Of Hazard Assessment

The Hazard Identification and Risk Assessment Program and process should be used for routine and non-routine activities as well as new processes, changes in operation, products or services as applicable.

We will also prepare a report of the results of a hazard assessment and the methods used to control or eliminate the hazards identified. We will also ensure that the date on which the hazard assessment is prepared or revised is recorded on it.

17.3.a Hazards Are Classified And Ranked Based On Severity

Hazards are classified/prioritized and addressed based on the risk associated with the task / (Risk analysis matrix outlining severity and probability).

17.4 Repeating And Reviewing The Process Of Hazard Assessment

Alin Machining Company dba Power Plant Services will and must ensure that the hazard assessment is repeated

(a) at reasonably practicable intervals to prevent the development of unsafe and unhealthy working conditions,
(b) when a new work process is introduced,
(c) when a work process or operation changes, or
(d) before the construction of significant additions or alterations to a work site.

Review Process

Alin Machining Company dba Power Plant Services will identify a review process is in place to avoid creating new hazards derived from the corrective measures.

17.5 Worker Participation and Training

If reasonably practicable, an Alin Machining Company dba Power Plant Services must involve affected workers in the
hazard assessment and in the control or elimination of the hazards identified.
All employees involved will be trained in the hazard identification process including the use and care of proper PPE.

17.6 Employee Hazard Notification

Alin Machining Company dba Power Plant Services will and
must ensure that workers affected by the hazards identified
in a hazard assessment report are informed of the hazards and the methods used to control or eliminate the hazards.

We have a requirement for documentation of workers names and participation in the process either on the written hazard assessment reports or in tool box meeting forms.

17.7 Hazard Elimination And Control

The Hazard Identification and Risk Assessment Program will demonstrate how identified hazards are addressed and mitigated. This can be accomplished by dedicated assignment, appropriate documentation of completion, and implemented controls.

If there is an existing or potential hazard to workers is identified during a hazard assessment, an Alin Machining Company dba Power Plant Services will
take appropriate measures in order to address, correct and mitigate any such hazardous measures as follows:

(a) eliminate the hazards, or
(b) if elimination is not reasonably practicable, control the hazard.

If reasonably practicable, an Alin Machining Company dba Power Plant Services will eliminate or control a hazard through the use of
engineering controls. If a hazard cannot be eliminated or controlled under this subsection, Alin Machining Company dba Power Plant Services will
use administrative controls that control the hazard to a level
as low as reasonably achievable.

If the hazard cannot be eliminated or controlled under the two above subsections Alin Machining Company dba Power Plant Services will ensure that the appropriate personal
protective equipment is used by workers affected by the hazard.

If the hazard cannot be eliminated or controlled under any of the above subsections

Then we will use a combination of engineering controls, administrative controls or personal protective equipment if there is a greater level of worker safety because a combination is used.

17.8 Emergency Preparedness

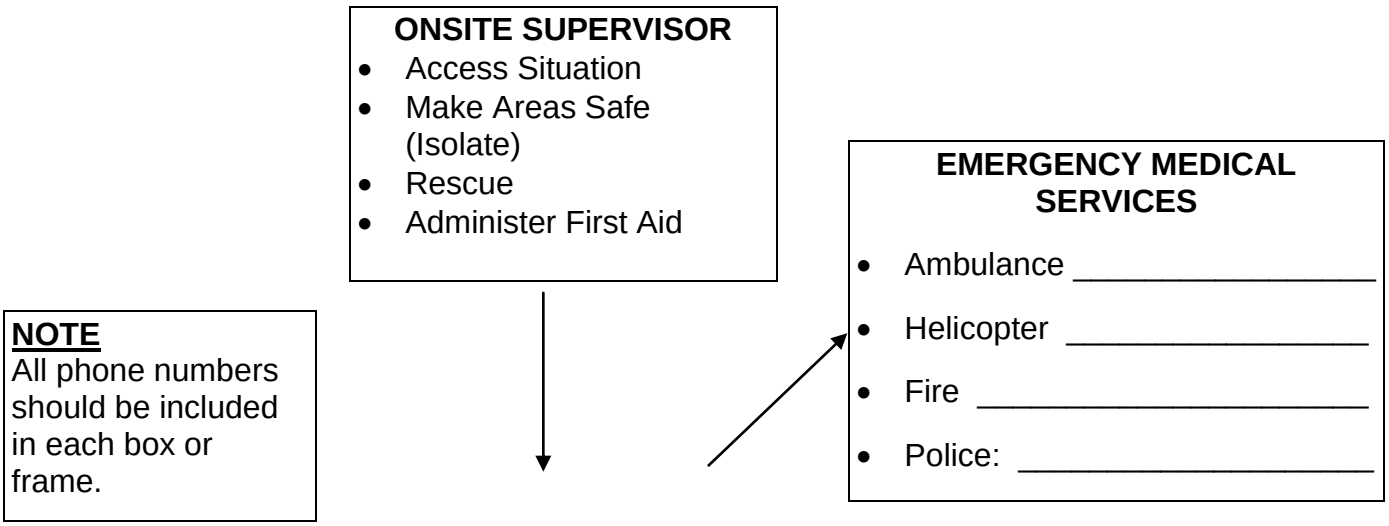
Emergency preparedness means that we are ready to respond to any emergency situation at our facility or any worksite. The purpose of an Emergency Response Plan is to protect our employees, contractors and the public from serious injury along with minimizing damage to equipment or property. In the event of a major disaster, this Emergency Response Plan describes the initial responsibilities and actions to be taken to protect all employees until the appropriate emergency responders take over.

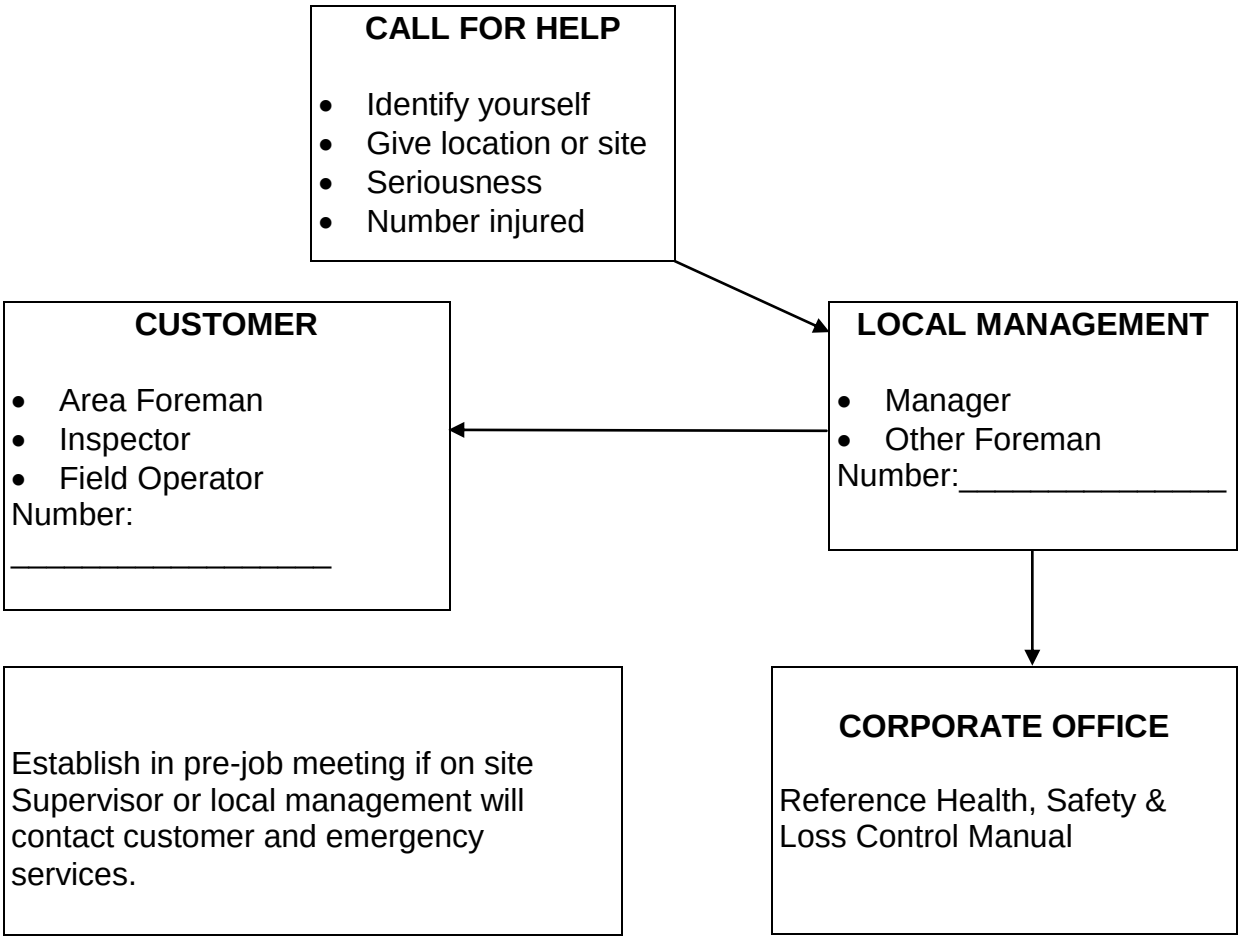
17.8.a Emergency Response Procedures:

In the event of an emergency our initial steps should involve assessing the hazard, evacuating personnel from the area, identifying any resources and delegating priority activities such as, rendering first aid, acquiring outside emergency assistance, using a fire extinguisher, etc.

- Contact key personnel (supervisor, first aid personnel).
- Give location and provide a short detailed account of the incident, identify any types of injures.
- Protect yourself and others from any immediate hazards.
- Have designated person administer any required first aid.
- Secure the accident scene.
- Contain any spills, if possible.
- Assist authorities as required.

17.8.b Emergency Response Communication Flow Diagram




CALL FOR HELP
Identify yourself
Give location or site
Seriousness
Number injured
CUSTOMER
Area Foreman
Inspector
Field Operator
Number:
_____
LOCAL MANAGEMENT
Manager
Other Foreman
Number:_____
Establish in pre-job meeting if on site Supervisor or local management will contact customer and emergency services.
CORPORATE OFFICE
Reference Health, Safety & Loss Control Manual

17.8.c Project Location & Emergency Phone Numbers

JOB SITE LOCATION: _____

Customer Name: _____

Project Name: _____

Project Location (LSD) _____ Job Number _____

Customer Contact: _____ Mobile Number: _____

Office Number: _____

Start Date: _____ Estimated Completion Date: _____

NEAREST EMERGENCY SERVICES:

Ambulance/Medicare: _____ or _____

Airport at: _____ or _____

Hospital at: _____ or _____

Fire Dept. at _____ or _____

R.C.M.P. at _____ or _____

E.U.B. at or

Const. Supt. Name _____ Cellular Number _____

Office Number _____

Supervisor's Name: _____ Cellular Number: _____

Office Number _____

Customer Field Operator: _____ Cellular Number: _____

Office Number _____

Muster Points _____

O.H.&S.. Inspection Branch (24 Hours) _____ or _____

W.C.B. at _____ or _____

Environmental Spill Hotline	_____	or	_____
Other:	_____	or	_____
Other	_____		

Chapter 18 - Hexavalent Chromium

18.1 General Requirements

18.1.a Scope

The standards establishes a permissible exposure limit (PEL) of 5 micrograms of Cr(VI) per cubic meter of air (5 [mu]g/m\3\) as an 8-hour time-weighted average for all Cr(VI) com and shall apply to occupational exposures to Cr(VI) in all forms and compounds with limited exceptions.

18.1.b Exposure Determination

Alin Machining Company dba Power Plant Services may choose between a scheduled monitoring option and a performance-based option for making exposure determinations.

18.1.c Absorption

Although chromium can exist in a number of different valence states, Cr(VI) is the form considered to be the greatest health risk. Cr(VI) enters the body by inhalation, ingestion, or absorption through the skin. For occupational exposure, the airways and skin are the primary routes of uptake.

18.1.d Methods of Compliance

Under the proposed rule, Alin Machining Company dba Power Plant Services is required to use engineering and work practice controls to achieve the proposed PEL unless they could demonstrate such controls are not feasible.

18.1.e Training of Employees

Alin Machining Company dba Power Plant Services provides training on chromium hazards, control methods and medical surveillance.

18.2 Occupational Exposure & PEL's

Exposure procedures and controls to hexavalent chromium has been developed in response to evidence that occupational exposure to Cr(VI) poses a significant risk of lung cancer, nasal septum ulcerations and perforations, and dermatoses. Exposure to Cr(VI) may also lead to asthma. To protect exposed workers from these effects, Alin Machining Company dba Power Plant Services has set a Permissible Exposure Limit of 5 [mu]g/m\3\ measured as an 8-hour time weighted average.

Alternative PELs were examined ranging from 20 [mu]g/m\3\ to 0.25 [mu]g/m\3\ measured as 8-hour time weighted averages. In addition to setting PELs, Alin Machining Company dba Power Plant Services policy includes the following at no cost:

- Monitor the exposure of employees (though allowing a performance-oriented approach to monitoring);

- Establish regulated areas when exposures may reasonably be expected to exceed the PEL (except in shipyards and construction);
- Implement engineering and work practice controls to reduce employee exposures to Cr(VI);
- Provide respiratory protection to supplement engineering and work practice controls where those controls are not feasible, where such controls are insufficient to meet the PEL, or in emergencies;
- Provide other protective clothing and equipment as necessary for dermal protection;
- Make industrial hygiene facilities (hand washing stations) available in some situations;
- Provide medical surveillance when employees are exposed above the action level for 30 days or more;
- Train workers about the hazards of Cr(VI) (including elements already required by OSHA's Hazard Communication Standard); and
- Keep records related to the standard.

18.3 Housekeeping

Cleaning methods such as shoveling, sweeping, and brushing were prohibited unless they were the only effective means available to clean surfaces contaminated with Cr(VI). This standard has modified the prohibition to make clear only dry shoveling, sweeping and brushing are prohibited so that effective wet shoveling, sweeping, and brushing would be allowed.

18.4 Medical Surveillance

Alin Machining Company dba Power Plant Services does provide medical surveillance to their employees experiencing signs or symptoms of the adverse health effects associated with Cr(VI) exposure or exposed in an emergency. In addition, employees exposed above the PEL for 30 or more days a year are to be provided medical surveillance.

18.5 Communication of Hazards

Alin Machining Company dba Power Plant Services has specified the sign for the demarcation of regulated areas and the specifications of employee training elements requires that signs, labels and training be in accordance with the Hazard Communication Standard (29 CFR 1910.1200). The only additional training elements required are those related specifically to label Cr(VI) contaminated clothing and wastes, and to train on the hazards of Cr(VI).

18.6 Recordkeeping

Alin Machining Company dba Power Plant Services will maintain an accurate record of all air monitoring conducted and will include the following information:

- Date measurement was taken.
- The operation involving exposure to hexavalent chromium that is being monitored.
- Sampling and methods used, as well as evidence of their accuracy.
- Number, duration, and the results of samples taken.
- Type of Personal Protective Equipment used.
- Detailed record of all employees represented by the monitoring, showing that they were actually monitored.

The exposure monitoring records must be kept for at least 30 years. Employee medical records must be kept at least 30 years beyond the duration of employment. Monitoring records will be accessible to employees in a reasonable time, place and manner.

18.7 Changing & Hygiene Facilities

Alin Machining Company dba Power Plant Services will provide change rooms for decontamination and ensure facilities prevent cross-contamination. Washing facilities shall be readily accessible for removing chromium from the skin. Workers must wash their hands and face or any other potentially exposed skin before eating, drinking or smoking.

18.8 Exposure Monitoring

Alin Machining Company dba Power Plant Services will provide for monitoring or measuring of employee exposure. Periodic monitoring shall be conducted at least every 6 months if initial monitoring shows employee exposure. Air monitoring will be performed at the beginning of each job task. If exposure monitoring results indicate exposure is above the PEL, Alin Machining Company dba Power Plant Services will include in written notification the corrective action being taken to reduce exposure to or below the PEL.

18.9 Providing PPE

PPE must be provided when there is a hazard from skin or eye contact at no cost. Gloves, aprons, coveralls, goggles, foot covers etc. Contaminated PPE will be removed at the end of the work shift. Alin Machining Company dba Power Plant Services will be sure to clean, launder, repair and replace protective clothing as needed.

Chapter 19 - Hydrogen Sulfide - H2S Awareness

19.1 Potential Exposure

Hydrogen Sulfide is a nearly ubiquitous, acute acting toxic substance. **It is one of the leading causes of death in the workplace.** Occupational exposures to hydrogen sulfide may be found in all places of employment. Some of the area/activities in which Alin Machining Company dba Power Plant Services employees might be potentially exposure to hydrogen sulfide are as follows:

- Drilling operations:
    - Recycled drilling mud;
    - Water portion from the sour crude wells;
    - Blow outs (infrequent)
- Tank gauging (the opening of the tank hatch to measure the liquid level in the tank can result in the release of build-up hydrogen sulfide):
    - Run-down tanks
    - Storage tanks at pipeline stations
    - Crude oil storage tanks in refineries
    - Storage tanks for intermediate and finished products
    - Field maintenance of wells.
- Entry into closed spaces including trenches, Pits, Process vessels, and tanks.
- Leaks in pumps or lines.
- Stripping of hydrogen sulfide and carbon dioxide from crude oil at the oil field and at the refinery.
- Injection of sour gas back into formation to stimulate oil production.
- Asphalt storage and associated operations.

19.2 Characteristics

19.2.a General Properties

Hydrogen Sulfide or sour gas (H2S) is a flammable, colorless gas that is toxic at extremely low concentrations. It is heavier than air, and may accumulate in low-lying areas. It smells like ‘rotten eggs’ at low concentrations and causes you to quickly lose your sense of smell and a significant property of the gas is its temporary paralytic effect on the olfactory nerve.

19.2.b Byproducts

Iron sulfide is a byproduct of many production operations and may spontaneously combust with air. Flaring operations associated with H2S production will generate Sulfur Dioxide (S02), another toxic gas.

19.3 Health Effects

Hydrogen sulfide is an extremely toxic and irritating gas. In sufficiently high concentrations it can cause instant death by blocking the oxidative processes of tissue cells and by reducing the oxygen-carrying capacity of the blood. Free hydrogen sulfide in the blood depresses the nervous system and larger amounts can paralyze the nervous system so that in acute poisoning death is due to respiratory failure and asphyxiation.

Hydrogen sulfide is irritating to the eyes and respiratory tract. The eye irritations--conjunctivitis, pain, lacrimation, and photophobia--may persist for several days.

Respiratory tract symptoms include coughing, pain in breathing, and pain in the nose and throat. Repeated exposures to hydrogen sulfide can result in chronic poisoning that can include:

- eye irritation
- respiratory tract irritation
- slow pulse rate
- lassitude, digestive disturbances, and
- cold sweats occur

The temporary paralytic effect on the olfactory nerve is probably its most significant property because high concentrations can cause collapse and death before the odor is detected.

19.4 Detection and Exposure

19.4.a Detectors

Commercially available devices can be used for quantitive estimation of low concentrations of hydrogen sulfide by ‘spot-sampling.’ These instruments indicate the amount of the gas present by a color change in chemically-coated granules in a narrow glass tube.

A strip filter paper sampler has been developed for the measurement of hydrogen sulfide. Air is drawn through a lead acetate impregnated tape where the hydrogen sulfide reacts to form lead sulfide. Concentrations are determined by comparing the optical density of the black spot with standards.

19.4.b Alarms

Continuous Fixed and/or Portable direct-reading monitor devices shall be installed to assure that complete coverage of the area(s) is achieved. An Industrial Hygiene survey may be required by Alin Machining Company dba Power Plant Services to accurately determine proper locations of monitors.

Monitors shall signal the presence of HS2 at concentrations levels of 10 PPM for the construction industry and 20 PPM for General Industry. This alarm is for alert only and shall not require evacuation.

When the concentration of 50 ppm or higher a different alarm will signal a spark-proof audible or visual alarm, one in which employees have been trained to recognize and distinguish. This device must have a response time of 20 seconds or less. **Workers in the contaminated area shall be evacuated immediately to safe areas.**

The monitors and alarm systems will be inspected As needed by the Safety Director.

19.4.c Exposure Limits

Are 10 ppm as an 8-hour TWA and 15 ppm as a STEL. These limits are consistent with those of the ACGIH. NIOSH has a REL for hydrogen sulfide of 10 ppm as a 10-minute ceiling.

19.5 Safety Precautions

Hydrogen sulfide has an unpleasant odor, characteristic of rotten eggs, and is detectable at low concentrations, however, due to rapid onset of olfactory fatigue and paralysis (inability to smell**)**

ODOR SHALL NOT BE USED AS A WARNING MEASURE

Alin Machining Company dba Power Plant Services has developed a set specific safety rules and actions which include:

- Legible Hydrogen Sulfide warning sign with yellow flag warning device present.
- Keep a safe distance from dangerous locations if not working to decrease danger.
- Pay attention to audible and visual alarm systems.
- Follow the guidance of the operator representative.
- Keep all safety equipment in adequate working order.
- Store the equipment in accessible locations:
    - An oxygen resuscitator.
    - A properly calibrated, metered hydrogen sulfide detection instrument.

19.6 Respirator Specifications

Respirators are provided by Alin Machining Company dba Power Plant Services when such equipment is required to protect the health of any employee. Alin Machining

Company dba Power Plant Services only provides respirators which are sanctioned and approved for the purpose intended. Listed below are the specifications that all respirators used by Alin Machining Company dba Power Plant Services employees **and / or subcontractors will meet:**

- Daily Operations:
    - Powered, air-purifying respirator with cartridge(s) providing protection against the H2S/(APF = 50).
    - Constant supplied-air respirator*/(APF = 50).
    - Any self-contained breathing apparatus with a full facepiece.(SCBA).
- Emergency or planned entry into unknown concentrations:
    - Self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode/(APF = 10,000).
    - Constant supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus/(APF = 10,000).
- Escape:
    - Air-purifying, full-facepiece respirator with a chin-style, front or back mounted canister providing protection against the H2S /(APF = 50)
    - Appropriate escape-type, self-contained breathing apparatus/(APF = 50).

19.7 Safety Procedures

All employees must be aware of Alin Machining Company dba Power Plant Services contingency plan. Implementation of Alin Machining Company dba Power Plant Services contingency plan will include but not limited to:

- Appropriate instruction in the use of hydrogen sulfide safety equipment to all personnel present at all hydrogen sulfide hazard areas.
- Gas detection where hydrogen sulfide may exist.
- Appropriate respiratory protection for normal and emergency use.
- The characteristics, sources, and hazards of Hydrogen Sulfide.
- Proper use of the Hydrogen Sulfide detection methods used on the site.
- Recognition of, and proper response to, Hydrogen Sulfide warnings at the workplace.
- Symptoms of Hydrogen Sulfide exposure.
- Proper rescue techniques and first-aid procedures to be used in a Hydrogen Sulfide exposure.

- Proper use and maintenance of personal protective equipment. Demonstrated proficiency in using PPE should be required.
- Worker awareness and understanding of workplace practices and maintenance procedures to protect personnel from exposure to hydrogen sulfide.
- Wind direction awareness and routes of egress.
- Confined space and enclosed facility entry procedures.
- Locations and use of safety equipment.
- Locations of safe briefing areas.
- Use and operation of all Hydrogen Sulfide monitoring systems.
- Emergency response procedures, corrective action, and shutdown procedures.
- Effects of Hydrogen Sulfide on the components of the Hydrogen Sulfide handling system.
- The importance of drilling fluid treating plans prior to encountering Hydrogen Sulfide.

Alin Machining Company dba Power Plant Services provides training so that all employees whose work is regulated by this section acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned. Training received by each affected employee occurs:

- Before the employee is first assigned duties under this section;
- Before there is a change in assigned duties;
- Whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained;

Chapter 20 - In Plant Rail Safety

20.1 Wearing Proper PPE

Approved hard hats, approved metatarsal boots and approved safety glasses with permanently attached side shields shall be worn in designated areas.

20.2 Conducting Training And Documentation

Appropriate training based on complexity of the job and potential hazards related to in plant rail shall be provided to all applicable employees. Assessments shall be used to determine whether the personnel have the knowledge and have demonstrated skills to safely perform their work assignments.

20.2.a Documentation

Alin Machining Company dba Power Plant Services will document all training related materials, forms, and data. All documentation and its contents will be accurate and should be understood by all recipients whom they apply. Documents and records will be stored and maintained so that they are readily retrievable and in a location to minimize deterioration and damage.

20.3 Re-Training If Unsafe Job Performance Is Observed

Retraining and testing shall be required for unsatisfactory/unsafe performance of job assignments.

20.4 Cross Existing Designated Rail Crossings

In all cases pedestrians/employees shall cross at existing designated pedestrian rail crossings where provided. Additionally, vehicle crossings are not intended as pedestrian crossings unless they are so identified and/or located, and no other pedestrian crossings exist in the area.

20.5 General Procedures For Crossing Railroad Tracks

General procedures for crossing Railroad Tracks if a designated rail crossing is not available, including: do not cross within 10 feet of the end of a parked rail car, do not cross between uncoupled cars, stop, look and listen prior to proceeding across the tracks, and never step on rails, as they may be slippery.

Never attempt to crawl under rail equipment or climb over moving rail equipment or attempt to cross in front of moving equipment.

20.6 Potential Pinch Point

Never position any part of the body in a potential pinch point. Rail equipment can move in either direction at anytime.

20.7 Performing Work Within Six (6) Feet Of Any Railroad Track

Prior to performing work within six (6) feet of any railroad track, permission must be obtained from railroad Supervisor/Designated person to take the track out of service.

Chapter 21 - Incident Investigation and Reporting

21.1 Investigations of Incidents

While all incidents should be investigated, including incidents involving property damage only, the extent of such investigation shall reflect the seriousness of the incident.

21.2 Local Reporting Sequence of Events

Reporting of the incident must occur in a specified manner and the reporting sequence must be posted. For example, in the event of incidents, the following are contacted in order; 911, department supervisor, section manager, company physician, security, human resources, safety department, and other organizations as required.

21.3 Reportable Incidents to OSHA and Assigning of Responsibilities

OSHA requires reporting of work related incidents resulting in the death of an employee or the hospitalization of three or more employees. Alin Machining Company dba Power Plant Services must verbally report such incidents to OSHA within 8 hours after the employer learns of it. Owner Clients require the incident to be reported as soon as possible or in a timely manner, i.e. immediately, within 24 hours.

Individual responsibilities for reporting and investigation must be pre-determined. Responsibilities must be assigned prior to incidents.

21.4 Personnel training in Responsibilities and Training in Techniques for Incident Investigation

Personnel must be trained in their roles and responsibilities for incident response and trained in incident investigation techniques utilizing a root cause process or method.

21.5 Equipment to Assist in Conducting an Investigation

Proper equipment will be readily available to assist in conducting an investigation. Equipment may include some or all of the following items; writing equipment such as pens/paper, measurement equipment such as tape measures and rulers, cameras, small tools, audio recorder, PPE, marking devices such as flags, equipment manuals, etc.

21.6 On Site First Response and Actions to Control Further Loss

Employees who could be first responders should be trained and qualified in first aid techniques to control the degree of loss during the immediate post-incident phase.

After immediate rescue, actions to prevent further loss should occur. For example, maintenance personnel should be summoned to assess integrity of buildings and equipment, engineering personnel to evaluate the need for bracing of structures, and special equipment/response requirements such as safe rendering of hazardous materials or explosives employed.

21.7 Initial Identification/Assessment of Evidence & Collection, Preservation, and Security of Evidence

Initial identification of evidence immediately following the incident might include a listing of people, equipment, and materials involved and a recording of environmental factors such as weather, illumination, temperature, noise, ventilation, etc.

Evidence such as people, positions of equipment, parts, and papers must be preserved, secured, and collected through notes, photographs, witness statements, flagging, and impoundment of documents and equipment.

21.8 Public and Media Relations and Coordination

Dealings with the news media, release of photographs and names of the injured, informing relatives of the injured, internal release of information, and development of press releases must be detailed.

21.9 Witness Interviews and Statements

Witness interviews and statements must be collected. Locating witnesses, ensuring unbiased testimony, obtaining appropriate interview locations, and use of trained interviewers should be detailed. The need for follow-up interviews should also be addressed.

21.10 Preparation of the Written Incident Report

Written incident reports should be prepared and include an incident report form and a detailed narrative statement concerning the events. The format of the narrative report may include an introduction, methodology, summary of the incident, investigation board member names, narrative of the event, findings and recommendations. Photographs, witness statements, drawings, etc should be included in the appendices.

21.11 Documentation and Communication of Lessons

Learned and review of similar operations to prevent reoccurrence

Lessons learned should be reviewed and communicated and changes to processes placed into effect to prevent reoccurrence of the same or similar events.

21.12 Identifying Corrective Actions

Incident investigations shall result in corrective actions, individuals will be assigned responsibilities relative to the corrective actions, and these actions shall be tracked to closure.

Chapter 22 - Injury/Illness Recordkeeping

22.1 Records

Alin Machining Company dba Power Plant Services maintains records of employee training, hazard identification and abatement, and accident investigation. Records shall be kept to document safety and health training for each employee by name or other identifier, training date, types of training and training providers.

Alin Machining Company dba Power Plant Services shall keep records of fatalities, injuries, and illnesses must record each fatality, injury and illness that:

- Is work-related; and
- Is a new case; and
- Meets one or more of the general recording criteria.

22.2 OSHA Records Required

Copies of required accident investigations and certification of employee safety training shall be maintained by the Responsible Safety Officer. A written report will be maintained on each accident, injury or on-the-job illness requiring medical treatment. A record of each such injury or illness is recorded on OSHA Injury and Illness Log (OSHA Form 300) and Summary of Occupational Injuries and Illnesses Form 300A according to its instructions. The OSHA 300A Summary form must be signed by a company official. Alin Machining Company dba Power Plant Services will have this 300A form reviewed and signed by our company's – RSO, Safety Director.
This is to certify that the RSO – Safety Director, has examined and reviewed the OSHA 300A Log form and that he or she reasonably believes, based on his or her knowledge of the process by which the information was recorded, that the annual summary is correct and complete.

Alin Machining Company dba Power Plant Services will post a copy of the annual OSHA 300A summary in each establishment in a conspicuous place or places where notices to employees are customarily posted. Alin Machining Company dba Power Plant Services will ensure that the posted annual summary is not altered, defaced or covered by other material.

Supplemental records of each injury are maintained on OSHA Form 301 (OSHA Injury and Illness Incident Record), and/or an equivalent of From 301, such as Companies Report of Injury or Illness as per local State requirements. This form must be completed 7 calendar days after the company receives information that a recordable work-related injury or illness has occurred. To be considered an equivalent form, any substitute must contain all the information asked on the OSHA Form 301.

Every year, a summary of all reported injuries or illnesses is posted no later than February 1 to April 30 of the year following the year covered by the form on OSHA Form 300. These records are maintained for five (5) years from the date of preparation or five

(5) years following the end of the calendar year that these records cover whichever is longer. The OSHA Form 300 and 300A has replaced OSHA Form 200 and OSHA Form 301 has replaced OSHA Form 101.

Chapter 23 - Ionizing Radiation

23.1 Definitions

Definitions applicable to this section.

23.1.a Radiation
includes alpha rays, beta rays, gamma rays, X-rays, neutrons, high-speed electrons, high-speed protons, and other atomic particles; but such term does not include sound or radio waves, or visible light, or infrared or ultraviolet light.

23.1.b Radioactive material
means any material which emits, by spontaneous nuclear disintegration, corpuscular or electromagnetic emanations.

23.1.c Restricted area
means any area access to which is controlled by the employer for purposes of protection of individuals from exposure to radiation or radioactive materials.

23.1.d Unrestricted area
means any area access to which is not controlled by the employer for purposes of protection of individuals from exposure to radiation or radioactive materials.

23.1.e Dose
means the quantity of ionizing radiation absorbed, per unit of mass, by the body or by any portion of the body. When the provisions in this section specify a dose during a period of time, the dose is the total quantity of radiation absorbed, per unit of mass, by the body or by any portion of the body during such period of time. Several different units of dose are in current use. Definitions of units used in this section are set forth in paragraphs (a)(6) and (7) of this section.

23.1.f Rad
means a measure of the dose of any ionizing radiation to body tissues in terms of the energy absorbed per unit of mass of the tissue. One rad is the dose corresponding to the absorption of 100 ergs per gram of tissue (1 millirad (mrad)=0.001 rad).

23.1.g Rem
means a measure of the dose of any ionizing radiation to body tissue in terms of its estimated biological effect relative to a dose of 1 roentgen (r) of X-rays (1 millirem (mrem)=0.001 rem). The relation of the rem to other dose units depends upon the biological effect under consideration and upon the conditions for irradiation. Each of the following is considered to be equivalent to a dose of 1 rem:

A dose of 1 roentgen due to X- or gamma radiation;

A dose of 1 rad due to X-, gamma, or beta radiation;

A dose of 0.1 rad due to neutrons or high energy protons;

A dose of 0.05 rad due to particles heavier than protons and with sufficient energy to reach the lens of the eye;

If it is more convenient to measure the neutron flux, or equivalent, than to determine the neutron dose in rads, as provided in paragraph (a)(7)(iii) of this section, 1 rem of neutron radiation may, for purposes of the provisions in this section be assumed to be equivalent to 14 million neutrons per square centimeter incident upon the body; or, if there is sufficient information to estimate with reasonable accuracy the approximate distribution in energy of the neutrons, the incident number of neutrons per square centimeter equivalent to 1 rem may be estimated from Table G-17:

23.1.h Table G-17 - Neutron Flux Dose Equivalents

Neutron energy (million electron volts (Mev))	Number of neutrons per square centimeter equivalent to a dose of 1 rem (neutrons/cm(2))	Average flux to deliver 100 millirem in 40 hours (neutrons/cm(2) per sec)
Thermal	970 X 10(6)	670
0.0001	720 X 10(6)	500
0.005	820 X 10(6)	570
0.02	400 X 10(6)	280
0.1	120 X 10(6)	80
0.5	43 X 10(6)	30
1.0	26 X 10(6)	18
2.5	29 X 10(6)	20
5.0	26 X 10(6)	18
7.5	24 X 10(6)	17
10	24 X 10(6)	17
10 to 30	14 X 10(6)	10

For determining exposures to X- or gamma rays up to 3 Mev., the dose limits specified in this section may be assumed to be equivalent to the "air dose". For the purpose of this section ***air dose*** means that the dose is measured by a properly calibrated appropriate instrument in air at or near the body surface in the region of the highest dosage rate.

23.2 Exposure Limits For A Restricted Area

Exposure of individuals to radiation in restricted areas.

Except as provided in paragraph (b)(2) of this section 1910.1096, no employer shall possess, use, or transfer sources of ionizing radiation in such a manner as to cause any individual in a restricted area to receive in any period of one calendar quarter from sources in the employer's possession or control a dose in excess of the limits specified in Table G-18:

TABLE G-18

	Rems per calendar quarter
Whole body: Head and trunk; active blood-forming organs; lens of eyes; or gonads	1 1/4
Hands and forearms; feet and ankles	18 3/4
Skin of whole body	7 1/2

23.3 Precautionary Procedures And Personal Monitoring

Alin Machining Company dba Power Plant Services will make such surveys as may be necessary for the company to comply with the provisions in this section. Survey: means an evaluation of the radiation hazards incident to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions. When appropriate, such evaluation includes a physical survey of the location of materials and equipment, and measurements of levels of radiation or concentrations of radioactive material present.

23.4 Personnel Monitors

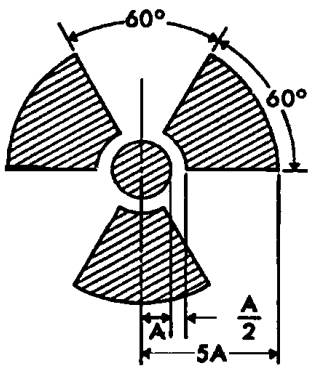
Alin Machining Company dba Power Plant Services shall supply appropriate personnel monitoring equipment, such as film badges, pocket chambers, pocket dosimeters, or film rings, and shall require the use of such equipment.

23.5 Caution Signs, Labels, And Signals

Symbols shall use the conventional radiation caution colors (magenta or purple on yellow background). The symbol is the conventional three-bladed design.

RADIATION SYMBOL

1. Cross-hatched area is to be magenta or purple.
2. Background is to be yellow.



23.5.a Sign Posting

Radiation area. Each radiation area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol described in the section and the words:

CAUTION

RADIATION AREA

23.6 Instruction Of Personnel

All individuals working in or frequenting any portion of a radiation area shall be informed of the occurrence of radioactive materials, shall be instructed in the safety problems associated with exposure, precautions and devices to minimize exposure including but not limited to time, distance, shielding, and keeping exposure limits as low as possible (ALARA). They must also be instructed in the applicable provisions of this section for the protection of employees from exposure to radiation or radioactive materials, and shall be advised of reports of radiation exposure which employees may request a copy of.

Alin Machining Company dba Power Plant Services shall post a current copy of its provisions and a copy of the operating procedures applicable to the work conspicuously in such locations as to insure that employees working in or frequenting radiation areas will observe these documents on the way to and from their place of employment, or shall keep such documents available for examination of employees upon request.

23.7 Recordkeeping

Alin Machining Company dba Power Plant Services shall maintain records of the radiation exposure of all employees for whom personnel monitoring is required and

advise each of his employees of his individual exposure on at least an annual basis.

23.8 Emergency Signals

All employees whose work may necessitate their presence in an area covered by the signal shall be made familiar with the actual sound of the signal-preferably as it sounds at their work location. Before placing the system into operation, all employees normally working in the area shall be made acquainted with the signal by actual demonstration at their work locations.

Chapter 24 - Ladder Safety

24.1 Specifications

Ladder rungs, cleats, and steps shall be parallel, level, and uniformly spaced when the ladder is in position for use.

Rungs, cleats, and steps of portable ladders and fixed ladders (including individual-rung / step ladders) shall be spaced not less than 10 inches nor more than 14 inches apart, as measured between center lines of the rungs, cleats and steps.

24.2 Inspections

All Alin Machining Company dba Power Plant Services ladders are to be inspected by a qualified competent person. That employee currently is The Competent Person. The inspections will include checking for visible defects As needed and after any occurrence that could affect their safe use.

Ladder components shall be surfaced to prevent injury to any employee from punctures or lacerations, and to prevent snagging of clothing.

Wood ladders shall not be coated with any opaque covering, except for identification or warning labels which may be placed on one face only of a side rail.

24.3 Defective Ladders

Portable ladders with structural defects, such as, but not limited to:

- broken or missing rungs;
- cleats or steps;
- broken or split rails;
- corroded components; or
- other faulty or defective components.

will either be immediately marked in a manner that readily identifies them as defective, or be tagged with 'Do Not Use' or similar language, and withdrawn from service until repaired.

Fixed ladders with structural defects, such as, but not limited to:

- broken or missing rungs;
- cleats or steps;
- broken or split rails; or
- corroded components.

will be withdrawn from service until repaired. The requirement to withdraw a defective

ladder from service is satisfied if the ladder is either:

- Immediately tagged with 'Do Not Use' or similar language;
- Marked in a manner that readily identifies it as defective;
- Or blocked (such as with a plywood attachment that spans several rungs).

24.4 Use and Requirements

The following requirements apply to the use of all ladders, including job-made ladders, except as otherwise indicated:

- Ladders shall be maintained free of oil, grease, and other slipping hazards;
- Wood job-made ladders with spliced side rails shall be used at an angle such that the horizontal distance is one-eighth the working length of the ladder;
- Fixed ladders shall be used at a pitch no greater than 90 degrees from the horizontal, as measured to the back side of the ladder;
- Ladders shall be used only on stable and level surfaces unless secured to prevent accidental displacement;
- Ladders shall not be used on slippery surfaces unless secured or provided with slip-resistant feet to prevent accidental displacement.
- Slip-resistant feet shall not be used as a substitute for care in placing, lashing, or holding a ladder that is used upon slippery surfaces including, but not limited to, flat metal or concrete surfaces that are constructed so they cannot be prevented from becoming slippery;
- Ladders placed in any location where they can be displaced by workplace activities or traffic, such as in passageways, doorways, or driveways, shall be secured to prevent accidental displacement, or a barricade shall be used to keep the activities or traffic away from the ladder;
- The area around the top and bottom of ladders shall be kept clear;
- The top of a non-self-supporting ladder shall be placed with the two rails supported equally unless it is equipped with a single support attachment;
- Ladders shall not be moved, shifted, or extended while occupied;

- Ladders shall have nonconductive siderails if they are used where the employee or the ladder could contact exposed energized electrical equipment;
- The top or top step of a stepladder shall not be used as a step; and
- Cross-bracing on the rear section of stepladders shall not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.

When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet (.9 m) above the upper landing surface to which the ladder is used to gain access;

or, when such an extension is not possible because of the ladder's length, then the ladder shall be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grabrail, shall be provided to assist employees in mounting and dismounting the ladder.

In no case shall the extension be such that ladder deflection under a load would, by itself, cause the ladder to slip off its support.

Non-self-supporting ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support).

Ladders shall not be loaded beyond the maximum intended load for which they were built, nor beyond their manufacturer's rated capacity.

Ladders shall be used only for the purpose for which they were designed.

Chapter 25 - Lead

25.1 Employee Information and Training

25.1.a Training Program

Alin Machining Company dba Power Plant Services Lead Abatement Program begins first by immediately communicating any information to their employees of any workplace potential exposure to airborne lead at any level and will also inform its employees of the content of 1910.1025 App. A & B.

Alin Machining Company dba Power Plant Services institutes a training program for and assure the participation of all employees who are subject to exposure to lead at or above the action level or for whom the possibility of skin or eye irritation exists.

25.1.b Effective Date

Alin Machining Company dba Power Plant Services will provide initial training by 180 days from the effective date for those employees and prior to the time of initial job assignment for those employees. The training program shall be repeated at least annually for each employee.

Alin Machining Company dba Power Plant Services requires that each employee is informed of the following:

- The content of the regulator standard and its appendices;
- The specific nature of the operations which could result in exposure to lead above the action level;
- The purpose, proper selection, fitting, use, and limitations of respirators;
- The purpose and a description of the medical surveillance program, and the medical removal protection program including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females);
- The engineering controls and work practices associated with the employee's job assignment;
- The contents of any compliance plan in effect; and
- Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician;

This program will inform Alin Machining Company dba Power Plant Services ’s employees of the specific hazards associated with their work environment, protective measures which can be taken, the danger of lead to their bodies (including their reproductive systems), and their rights under the OSHA standard 1910.1025 Lead.

Alin Machining Company dba Power Plant Services will readily have available to all employees, including those exposed below the action level, a copy of 1910.1025 Lead and its appendices and must distribute to all employees any materials provided to Alin Machining Company dba Power Plant Services by the Occupational Safety and Health

Administration (OSHA).

25.2 Monitoring

25.2.a Permissible Exposure Limit (PEL)

Alin Machining Company dba Power Plant Services shall assure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air (50 ug/m(3)) averaged over an 8-hour period.

All of Alin Machining Company dba Power Plant Services properties / workplaces or work operation that could possibly be subject to possible exposure describe in this program will have an Industrial Hygiene survey done to ensure accuracy, and to determine if any employee may be exposed to lead at or above the action level.

25.2.b Initial Determination

This initial determination must include instrument monitoring of the air for the presence of lead and must cover the exposure of a representative number of employees who are reasonably believed to have the highest exposure levels.

If lead is present in the workplace any quantity, Alin Machining Company dba Power Plant Services will make an initial determination of whether the action level has been exceeded for any employee.

Alin Machining Company dba Power Plant Services shall conducted appropriate air sampling for lead in the past year he may use these results. If there have been any employee complaints of symptoms which may be attributable to exposure to lead or if there is any other information or observations which would indicate employee exposure to lead, this must also be considered as part of the initial determination.

25.2.c Air Sampling

If this initial determination shows that a reasonable possibility exists that any employee may be exposed, without regard to respirators, over the action level (30 ug/m(3)) Alin Machining Company dba Power Plant Services must set up an air monitoring program to determine the exposure level of every employee exposed to lead at your workplace.

In carrying out this air monitoring program, Alin Machining Company dba Power Plant Services is not required to monitor the exposure of every employee, but he must monitor a representative number of employees and job types.

Enough sampling must be done to enable each employee's exposure level to be reasonably represented by at least one full shift (at least 7 hours) air sample. In addition, these air samples must be taken under conditions which represent each employee's regular, daily exposure to lead.

25.2.d Frequency

If the initial determination or subsequent monitoring reveals employee exposure to be at

or above the action level but below the permissible exposure limit Alin Machining Company dba Power Plant Services shall repeat monitoring in accordance with this paragraph at least every 6 months.

Alin Machining Company dba Power Plant Services shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are below the action level at which time Alin Machining Company dba Power Plant Services may discontinue monitoring for that employee except as otherwise noted in this section.

If the initial monitoring reveals that employee exposure is above the permissible exposure limit Alin Machining Company dba Power Plant Services shall repeat monitoring quarterly.

Alin Machining Company dba Power Plant Services shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are below the PEL but at or above the action level at which time Alin Machining Company dba Power Plant Services shall repeat monitoring for that employee except as otherwise noted in this section.

25.2.e Additional Monitoring

Whenever there has been a production, process, control or personnel change which may result in new or additional exposure to lead, or whenever Alin Machining Company dba Power Plant Services has any other reason to suspect a change which may result in new or additional exposures to lead, additional monitoring in accordance with this paragraph shall be conducted.

25.3 Written Employee Notification

The employer must, within 15 working days after the receipt of the results of any monitoring performed under this section, notify each affected employee of these results either individually in writing or by posting the results in an appropriate location that is accessible to affected employees.

Whenever the results indicate that the representative employee exposure, without regard to respirators, exceeds the permissible exposure limit, the employer shall include in the written notice a statement that the permissible exposure limit was exceeded and a description of the corrective action taken or to be taken to reduce exposure to or below the permissible exposure limit.

Accuracy of measurement. The employer shall use a method of monitoring and analysis which has an accuracy (to a confidence level of 95%) of not less than plus or minus 20 percent for airborne concentrations of lead equal to or greater than 30 ug/m(3).

25.4 Engineering and Work Practice Controls

Where any employee is exposed to lead above the permissible exposure limit for more than 30 days per year, Alin Machining Company dba Power Plant Services will implement engineering and work practice controls (including administrative controls) to reduce and maintain employee exposure to lead in accordance with the implementation schedule in Table I below, except to the extent that Alin Machining Company dba Power Plant Services can demonstrate that such controls are not feasible.

Wherever the engineering and work practice controls which can be instituted are not sufficient to reduce employee exposure to or below the permissible exposure limit, Alin Machining Company dba Power Plant Services shall nonetheless use them to reduce exposures to the lowest feasible level and shall supplement them by the use of respiratory protection which complies with section 25.3 .

Where any employee is exposed to lead above the permissible exposure limit, but for 30 days or less per year, the employer shall implement engineering controls to reduce exposures to 200 ug/m(3), but thereafter may implement any combination of engineering, work practice (including administrative controls), and respiratory controls to reduce and maintain employee exposure to lead to or below 50 ug/m(3)

TABLE I

Industry	Compliance dates(1): (50 UG/M(3))
Lead chemicals, secondary copper smelting.	July 19, 1996.
Nonferrous foundries.	July 19, 1996(2).
Brass and bronze ingot manufacture.	6 years(3).

Footnote **(1)** Calculated by counting from the date the stay on implementation of paragraph (e)(1) was lifted by the U.S. Court of Appeals for the District of Columbia, the number of years specified in the 1978 lead standard and subsequent amendments for compliance with the PEL of 50 ug/m(3) for exposure to airborne concentrations of lead levels for the particular industry.

Footnote **(2)** Large nonferrous foundries (20 or more employees) are required to achieve the PEL of 50 ug/m(3) by means of engineering and work practice controls. Small nonferrous foundries (fewer than 20 employees) are required to achieve an 8-hour TWA of 75 ug/m(3) by such controls.

Footnote **(3)** Expressed as the number of years from the date on which the Court lifts the stay on the implementation of paragraph (e)(1) for this industry for Alin Machining Company dba Power Plant Services 's to achieve a lead in air concentration of 75 ug/m(3). Compliance with paragraph (e) in this industry is determined by a compliance directive that incorporates elements from the settlement agreement between OSHA and representatives of the injury. are required to comply within five years.

Respiratory protection. Where engineering and work practice controls do not reduce employee exposure to or below the 50 ug/m(3) permissible exposure limit, the employer

shall supplement these controls with respirators in accordance with paragraph outlining 'Respiratory Protection'.

25.5 Written Compliance Program

Alin Machining Company dba Power Plant Services shall establish and implement a written compliance program to reduce exposures to or below the permissible exposure limit, and interim levels if applicable, solely by means of engineering and work practice controls in accordance with the implementation schedule for this program.

Alin Machining Company dba Power Plant Services written compliance program shall include at least the following:

- A description of each operation in which lead is emitted; e.g. machinery used, material processed, controls in place, crew size, employee job responsibilities, operating procedures and maintenance practices;
- A description of the specific means that will be employed to achieve compliance, including engineering plans and studies used to determine methods selected for controlling exposure to lead;
- A report of the technology considered in meeting the permissible exposure limit;
- Air monitoring data which documents the source of lead emissions;

25.6 Respiratory Selection

25.6.a General

For employees who use respirators required by this section, Alin Machining Company dba Power Plant Services will provide respirators that have been certified. Respirators must be used during - Periods necessary to install or implement engineering or work-practice controls.

Alin Machining Company dba Power Plant Services is required to select respirators from the seven types listed in Table II of the Respiratory Protection standard (below). Any respirator chosen must be approved by the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 42 CFR part 84.

This respirator selection table will enable Alin Machining Company dba Power Plant Services to choose a type of respirator that will give the employees a proper amount of protection based on their airborne lead exposure. Alin Machining Company dba Power Plant Services may select a type of respirator that provides greater protection than that required by the standard; that is, one recommended for a higher concentration of lead than is present in the workplace.

For example, a powered air-purifying respirator (PAPR) is much more protective than a

typical negative pressure respirator, and may also be more comfortable to wear. A PAPR has a filter, cartridge, or canister to clean the air, and a power source that continuously blows filtered air into the employees breathing zone.

Alin Machining Company dba Power Plant Services might make a PAPR available to employees to ease the burden of having to wear a respirator for long periods of time. The standard provides that an employee can obtain a PAPR upon request.

TABLE II.—RESPIRATORY PROTECTION FOR LEAD AEROSOLS

Airborne concentration of lead or condition of use	Required respirator
Not in excess of 0.5 mg/m³ (10X PEL)	Half-mask, air-purifying respirator equipped with high efficiency filters.[2,3]
Not in excess of 2.5 mg/m³ (50X PEL)	Full facepiece, air-purifying respirator with high efficiency filters.[3]
Not in excess of 50 mg/m³ (1000X PEL)	(1) Any powered, air-purifying respirator with high efficiency filters[3]; or (2) Half-mask supplied-air respirator operated in positive-pressure mode.[2]
Not in excess of 100 mg/m³ (2000X PEL)	Supplied-air respirators with full facepiece, hood, helmet, or suit, operated in positive pressure mode.
Greater than 100 mg/m³, unknown concentration or fire fighting.	Full facepiece, self-contained breathing apparatus operated in positive-pressure mode.

[1] Respirators specified for high concentrations can be used at lower concentrations of lead.
[2] Full facepiece is required if the lead aerosols cause eye or skin irritation at the use concentrations.
[3] A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron size particles.

Alin Machining Company dba Power Plant Services provide a powered air-purifying respirator instead of the respirator specified in Table II of this section when an employee chooses to use this type of respirator and such a respirator provides adequate protection to the employee.

Alin Machining Company dba Power Plant Services is required to provide and monitor employees in the appropriate use of respirators when the exposure to lead is not controlled below the PEL by other means Alin Machining Company dba Power Plant Services will pay the cost of the respirator.

Whenever an employee request one, Alin Machining Company dba Power Plant Services will provide them with a respirator even if their air exposure level does not exceed the PEL.

For example: An employee may intend to have children in the near future, and want to reduce the level of lead in your body to minimize adverse reproductive effects.

While respirators are the least satisfactory means of controlling your exposure, they are capable of providing significant protection if properly chosen, fitted, worn, cleaned, maintained, and replaced when they stop providing adequate protection.

25.7 Protective Work Clothing and Equipment

25.7.a Provision and Use

If an employee is exposed to lead above the PEL, without regard to the use of respirators or where the possibility of skin or eye irritation exists, Alin Machining Company dba Power Plant Services provides at no cost to the employee and assure that the employee uses the appropriate protective work clothing and equipment such as, but not limited to:

- Coveralls or similar full-body work clothing;
- Gloves, hats, and shoes or disposable shoe coverlets; and
- Face shields, vented goggles, or other appropriate protective equipment.

25.7.b Cleaning and Replacement

Alin Machining Company dba Power Plant Services provides the protective clothing required of section 25.7.a of this chapter in a clean and dry condition at least weekly, and daily to employees whose exposure levels without regard to a respirator are over 200 ug/m(3) of lead as an 8-hour TWA. Alin Machining Company dba Power Plant Services Lead Exposure program also includes:

- providing for the cleaning, laundering, or disposal of protective clothing and equipment required by this section.
- repairing or replacing required protective clothing and equipment as needed to maintain their effectiveness.
- assuring that all protective clothing is removed at the completion of a work shift only in change rooms provided for that purpose as prescribed in this section.
- assuring that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the change-room which prevents dispersion of lead outside the container.
- informing in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

And assuring that the containers of contaminated protective clothing and equipment are labeled as follows:

CAUTION:

CLOTHING CONTAMINATED WITH LEAD.

DO NOT REMOVE DUST BY BLOWING OR SHAKING.

DISPOSE OF LEAD CONTAMINATED WASH WATER IN ACCORDANCE WITH

APPLICABLE LOCAL, STATE, OR FEDERAL REGULATIONS

Alin Machining Company dba Power Plant Services prohibits the removal of lead from

protective clothing or equipment by blowing, shaking, or any other means which disperses lead into the air.

25.8 Medical Surveillance

Alin Machining Company dba Power Plant Services medical surveillance program for all employees who are or may be exposed above the action level for more than 30 days per year, assures that all medical examinations and procedures are performed by or under the supervision of a licensed physician and will provide the required medical surveillance including multiple physician review without cost to employees and at a reasonable time and place.

25.9 Biological Monitoring

25.9.a Blood Lead and ZPP Level Sampling and Analysis

Alin Machining Company dba Power Plant Services 's biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin levels is available to each employee under the following schedule:

- At least every 6 months to each employee covered under chapter ;
- At least every two months for each employee whose last blood sampling and analysis indicated a blood lead level at or above 40 ug/100 g of whole blood;
- This frequency shall continue until two consecutive blood samples and analyses indicate a blood lead level below 40 ug/100 g of whole blood; and
- At least monthly during the removal period of each employee removed from exposure to lead due to an elevated blood lead level.

25.10 Employee Notification

Within five working days after the receipt of biological monitoring results, Alin Machining Company dba Power Plant Services will notify in writing each employee whose blood lead level exceeds 40 ug/100 g:

- of that employee's blood lead level and;

- temporary medical removal with Medical Removal Protection benefits when an employee's blood lead level exceeds the numerical criterion for medical removal under section 8.a of this chapter.

25.11 Hygiene Facilities and Practices

Alin Machining Company dba Power Plant Services shall assure that in areas where

employees are exposed to lead above the PEL, without regard to the use of respirators, food or beverage is not present or consumed, tobacco products are not present or used, and cosmetics are not applied, except in change rooms, lunchrooms, and showers.

25.11.a Change Rooms

Alin Machining Company dba Power Plant Services shall provide clean change rooms for employees who work in areas where their airborne exposure to lead is above the PEL, without regard to the use of respirators
and that change rooms are equipped with separate storage facilities for protective work clothing and equipment and for street clothes which prevent cross-contamination.

25.11.b Showers

Alin Machining Company dba Power Plant Services shall assure that employees who work in areas where their airborne exposure to lead is above the PEL, without regard to the use of respirators, shower at the end of the work shift and will provide shower facilities in accordance with 1910.141 OSHA standard.
Alin Machining Company dba Power Plant Services will assure that employees who are required to shower pursuant to 25.11.b do not leave the workplace wearing any clothing or equipment worn during the work shift.

25.12 Signs

25.12.a General

Alin Machining Company dba Power Plant Services may use signs required by other statutes, regulations or ordinances in addition to, or in combination with, signs required by this program.

Alin Machining Company dba Power Plant Services shall assure that no statement appears on or near any sign which contradicts or detracts from the meaning of the required sign.

25.12.b PEL Warning Sign

Alin Machining Company dba Power Plant Services shall post the following warning signs in each work area where the PEL is exceeded:

WARNING

LEAD WORK AREA

POISON

NO SMOKING OR EATING

Alin Machining Company dba Power Plant Services signs are required to be illuminated and cleaned as necessary so that the legend is readily visible.

Chapter 26 - Lead Awareness

26.1 Lead Awareness Training

Alin Machining Company dba Power Plant Services requires that all employees at time, receive Lead Awareness Training is performed during orientation. Each employee shall also receive Lead Awareness Training during the course of employment before initial assignment in areas where lead is suspected to be contained. Annual refresher lead awareness training is also conducted with each employee. Furthermore, lead awareness training is required for employees of Alin Machining Company dba Power Plant Services whose work activities may at any time contact lead containing materials but do not disturb the material during their work activities.

Lead awareness training for Alin Machining Company dba Power Plant Services shall be overseen by the Safety Director and all training will be documented to include:

- outline of the items covered with it attached to the sign-in sheet
- location of training
- dates of training
- employee name and signature
- trainer name and trainer signature

26.2 Possible Locations Of Lead Containing Materials

Alin Machining Company dba Power Plant Services may do work that will expose employees to lead. Possible locations of lead containing materials that you may be exposed to include but limited to the following:

- automotive batteries
- leaded paints
- leaded solders
- pipes
- other batteries types
- circuit boards
- cathode ray tubes
- leaded glass
- demolition/salvage materials

26.3 Health Effects Of Lead

Absortion of lead or exposure to lead may cause ill health problems or health effects. These may present in symptoms of acute lead poisoning that include:

- loss of appetite
- nausea

- vomiting
- stomach cramps
- constipation
- difficulty in sleeping
- fatigue
- moodiness
- headache
- joint or muscle aches
- anemia

Long term overexposure or chronic lead exposure to lead may result in severe damage to the blood-forming organs, inability to form normal red blood cells, nervous system problems, urinary problem and urinary tract problems, as well as reproductive system problems.

26.4 Abiding By Warning Signs & Labels

All employees and workers shall abide by all warning signs & labels including assessment reports indicating the presence of lead containing materials. Employees shall abide by all of the appropriate work practices in order to ensure the lead containing materials are not disturbed.

26.5 Multi-Contractor Worksites

Alin Machining Company dba Power Plant Services will make sure that our employees are protected from any lead exposure at any time while we are working on multi-contractor worksites. During the course of any work or while on a jobsite, if employees working immediately adjacent to a lead abatement activity are exposed to lead due to the inadequate containment of such job, the immediate Jobsite Foreman in charge for Alin Machining Company dba Power Plant Services shall perform one of the following:

- either remove the employees from the area until the enclosure breach is repaired or
- perform an initial exposure assessment.

26.6 Washing Following Lead Contact

Following any type of lead exposure or if lead containing materials are contacted, all employees' hands and faces should be washed thoroughly.

Chapter 27 - Lockout / Tagout

27.1 Training and Communication

The primary individual who is responsible for Alin Machining Company dba Power Plant Services ’s lockout / tagout program is The Competent Person. They will provide training to ensure that the purpose and function of the energy control procedures are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. The training shall include the following:

- Each authorized employee shall receive training in the recognition of applicable hazardous energy sources;
- the type and magnitude of the energy available in the workplace; and
- the methods and means necessary for energy isolation and control.

Each affected employee will also receive training procedures for affixing appropriate lockout devices or tagout devices to energy-isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start up, or release of stored energy in order to prevent injury to employees.

27.2 Procedure Limitations

All other employees whose work operations are or could possibly be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.

When tagout systems are used, employees are required to be trained in the following limitations:

1. Tags are essentially warning devices affixed to energy-isolating devices, and do not provide the physical restraint on those devices that is provided by a lock.

2. When a tag is attached to an energy isolating, it means that it is not to be removed without approval of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

3. Tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area, in order to be effective.

4. Tags and their means of attachment are to be made of materials that will withstand the environmental conditions encountered in the workplace.

5. Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.

6. Tags must be securely attached to energy-isolating devices so that they cannot be inadvertently or accidentally detached during use.

27.3 Employee Retraining

Alin Machining Company dba Power Plant Services safety policy mandates that employee training is to be comprehensive and the documentation of training is being kept up to date. Alin Machining Company dba Power Plant Services will issue a certification for completion of the Lockout / Tagout training program which will contain each employee's name, and the dates of training.

Retraining is provided to all authorized and affected employees whenever there is a change in their job assignments, a change in machines, equipment, or processes that present a new hazard, or when there is a change in the energy control procedures.

Additional retraining shall also be conducted As needed, or whenever Alin Machining Company dba Power Plant Services has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

27.4 Energy Control Procedure

The following energy controls procedures have been developed by Alin Machining Company dba Power Plant Services to utilize and control the potentially hazardous energy when employees are engaged in any activities defined in this section.

27.4.a Scope

This covers the servicing and maintenance of machines and equipment in which the unexpected energization or start up of the machines or equipment, or release of stored energy could cause injury to employees.

27.4.b Application of Control

Alin Machining Company dba Power Plant Services has intergraded the following procedures for the application of energy control (the lockout or tagout procedures) that will cover the following elements and actions and must be done in the following sequence:

27.4.b.1 Preparation for Shutdown

Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to

control the energy.

27.4.b.2 Machine or Equipment Shutdown

The machine or equipment shall be turned off or shut down using the procedures established for the machine or equipment. An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees because of the equipment stoppage.

27.4.b.3 Machine or Equipment Isolation

All energy-isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).

27.4.c Purpose

Alin Machining Company dba Power Plant Services has established a program to utilize procedures for affixing appropriate lockout devices or tagout devices to energy-isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start up or release of stored energy in order to prevent injury to employees.

When other standards in this part require the use of lockout or tagout, they shall be used and supplemented by the procedural and training requirements of this section.

27.4.d Definitions

Affected Employee

An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized Employee

A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.

Capable of being Locked Out

An energy-isolating device is capable of being locked out if it has a hasp or other means of attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy-isolating devices are capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy-isolating device or permanently alter its energy control capability.

Energized

Connected to an energy source or containing residual or stored energy.

Energy-isolating Device
A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy-isolating devices.

Energy Source
Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Hot Tap
A procedure used in the repair, maintenance and services activities which involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure, in order to install connections or appurtenances. it is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

Lockout
The placement of a lockout device on an energy-isolating device, in accordance with an established procedure, ensuring that the energy-isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device
A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy-isolating device in the safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.

Normal Production Operations
The utilization of a machine or equipment to perform its intended production function.

Servicing and/or Maintenance
Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

Setting Up
Any work performed to prepare a machine or equipment to perform its normal production operation.

Tagout
The placement of a tagout device on an energy-isolating device, in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout Device
A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy-isolating device in accordance with an established procedure, to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

27.4.e Periodic Inspection
Alin Machining Company dba Power Plant Services authorized personal will conduct a periodic inspection of the energy control procedure As needed to ensure that the procedure and the requirements of this program are being followed. These inspections shall be performed by an authorized employee other than those utilizing the energy control procedure being inspected. These inspections will be conducted to correct any deviations or inadequacies identified.

Where lockout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.

Where tagout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized and affected employee, of that employee's responsibilities under the energy control procedure being inspected, and the elements set forth in this section.

Alin Machining Company dba Power Plant Services will certify that the periodic inspections have been performed. The certification will identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

27.5 Lockout / Tagout Devices

27.5.a Protective Materials and Hardware
Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other

hardware shall be provided by Alin Machining Company dba Power Plant Services for isolating, securing or blocking of machines or equipment from energy sources.

Lockout devices and tagout devices shall be singularly identified; shall be the only devices(s) used for controlling energy; shall not be used for other purposes; and shall meet the following requirements:

27.5.b Durable

Lockout and tagout devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

Tagout devices shall be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.

Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

27.5.c Standardized

Lockout and tagout devices shall be standardized within the facility in at least one of the following criteria:

Color - Shape - Size

Additionally, in the case of tagout devices, print and format will be standardized.

27.5.d Substantial

Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

Tagout devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all environment-tolerant nylon cable tie.

27.5.e Identifiable

Lockout devices and tagout devices shall indicate the identity of the employee applying the device(s).

Tagout devices shall warn against hazardous conditions; if the machine or equipment is energized; and shall include a legend such as the following:

- **Do Not Start.**
- **Do Not Open.**

- **Do Not Close.**
- **Do Not Energize.**
- **Do Not Operate.**

The following table list all of Alin Machining Company dba Power Plant Services ’s Lockout / Tagout devices that are now or may possible be in use at our facility.

Lock / Tag Name	Description	Control	Machine

27.6 Inspections

Alin Machining Company dba Power Plant Services will conduct a inspection As needed of the energy control procedures, and a annually certified review of the inspection procedures and to ensure that the requirements of this standard are being followed.

The inspections shall be performed by The Competent Person or a other authorized person other than the ones(s) utilizing the energy control procedure being inspected.

The inspection As needed shall be conducted to correct any deviations or inadequacies identified.

Where lockout is used for energy control, the inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.

Where tagout is used for energy control, the inspection As needed shall include a review, between the inspector and each authorized and affected employee, of that employee's responsibilities under the energy control procedure being inspected, and the elements set forth in section 27.2 .

Alin Machining Company dba Power Plant Services shall certify that the As needed inspections have been performed. The certification shall identify the machine or

equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

27.7 Application of Control

The established procedures for the application of energy control (the lockout or tagout procedures) cover the following elements and actions and are to be done in the following sequence:

27.7.a Preparation for Shutdown

Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy.

27.7.b Machine or Equipment Shutdown

The machine or equipment shall be turned off or shut down using the procedures established for the machine or equipment. An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees as a result of the equipment stoppage.

27.7.c Machine or Equipment Isolation

All energy-isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).

27.8 Lockout or Tagout Device Application

All Lockout or Tagout devices shall be affixed to “All Sources” and each energy-isolating device by authorized employees.

All Lockout devices, where used, shall be affixed in a manner to that will hold the energy-isolating devices in a ‘safe’ or ‘off’ position.

All Tagout devices, where used, shall be affixed in such a manner as will clearly indicate that the operation or movement of energy-isolating devices from the ‘safe’ or ‘off’ position is prohibited.

Where tagout devices are used with energy-isolating devices designed with the capability of being locked, the tag attachment shall be fastened at the same point at which the lock would have been attached.

Where a tag cannot be affixed directly to the energy-isolating device, the tag shall be

located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.

27.9 Stored Energy

Following the application of lockout or tagout devices to energy-isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe.

If there is a possibility of reaccumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists.

27.10 Verification of Isolation

Prior to starting work on machines or equipment that have been locked out or tagged out, the authorized employee shall verify that isolation and deenergization of the machine or equipment have been accomplished.

27.11 Additional Requirements

Testing or positioning of machines, equipment or components thereof in situations which lockout or tagout devices must be temporarily removed from the energy-isolating device and the machine or equipment energized to test or position the machine, equipment or component thereof, the following sequence of actions **IN THIS ORDER** will be done**:**

A. Clear the machine or equipment of tools and materials in accordance with section 27.4 ;

B. Remove employees from the machine or equipment area in accordance with section 27.12 ;

C. Remove the lockout or tagout devices as specified in section 27.12.a ;

D. Energize and proceed with testing or positioning;

E. Deenergize all systems and reapply energy control measures in accordance with section 27.12 to continue the servicing and/or maintenance.

27.12 Group Lockout or Tagout

When servicing and/or maintenance is performed by a crew, craft, department or other

group, they shall utilize a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device.

Group lockout or tagout devices used in accordance with the procedures required by section 27.5 including, but not necessarily limited to the following requirements:

- Primary responsibility is vested in an authorized employee for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock);

- Provision for the authorized employee to ascertain the exposure status of individual group members with regard to the lockout or tagout of the machine or equipment; and

- When more than one crew, craft, department, etc. is involved, assignment of overall job-associated lockout or tagout control responsibility to an authorized employee designated to coordinate affected work forces and ensure continuity of protection; and

- Each authorized employee shall affix a personal lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism when he or she begins work, and shall remove those devices when he or she stops working on the machine or equipment being serviced or maintained.

27.12.a Authorized Employee

A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.

27.13 Employee Training

All employees who are responsible for following this procedure must receive training in the procedure. This includes all employees who perform the following duties: maintenance, repair, or construction personnel, janitorial or clean-up personnel. The company shall provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage, and removal of energy controls are required by employees. Potential sources of energy include electrical, steam, hydraulic, tension and gravity. The training shall include the following:

a. Each authorized employee shall receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means of necessary for energy isolation and control.

b. Each affected employee shall be instructed in the purpose and use of the energy control procedure.

c. All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or re-energize machines or equipment which are locked out or tagged out.
When tagout systems are used, employees shall also be trained in the following limitations of tags:

a. Tags are essentially warning devices affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock.

b. When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

c. Tags must be legible and understandable by all authorized, affected and all other employees whose work operations are or may be in the area, in order to be effective.

d. Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.

e. Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.

f. Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

Employee retraining shall be provided for all authorized and affected employees annually, or whenever there is a change in their job assignments, a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.

Additional retraining shall also be conducted whenever a periodic inspection, or whenever the company has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

The retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary.

The company shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and the dates of training. Each training session shall include at minimum the following:

a. Lecture regarding this procedure including its purpose, scope, and application.

b. Visual support materials including but not limited to video or film presentation of "Lockout Safety Procedures".

c. Written quiz to establish the proficiency of the student.

27.14 Definitions

Affected Employee

An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized Employee

A person who locks or implements a tagout system procedure on machines or equipment to perform the servicing or maintenance on that machine or equipment. An authorized employee and an affected employee may be the same person when the affected employee's duties also include performing maintenance or service on a machine or equipment which must be locked or a tagout system implemented.

Capable Of Being Locked Out

An energy isolating device will be considered to be capable of being locked out either if it is designed with a hasp or other attachment or integral part to which, or through which a lock can be affixed, or if it has a locking mechanism built into it. Other energy isolating devices will also be considered to be capable of being locked out, if lockout can be achieved without the need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

Energized

Connected to an energy source or containing residual or stored energy.

Energy Isolating Device

A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently; a slide gate; a slip bind; a line valve; a block; and any similar device used to block or isolate energy. The term does not include a push button,

selector, and any other control circuit type devices.

Energy Source

Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Hot Tap

A procedure used in the repair, maintenance and services activities which involve welding on a piece of equipment (pipelines, vessels or tanks) under pressure, in order to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.

Lockout

The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device

A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine or equipment.

Normal Production Operations

The utilization of a machine or equipment to perform its intended production function.

Servicing and/or Maintenance

Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

Setting Up

Any work performed to prepare a machine or equipment to perform its normal production operation.

Tagout

The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout Device

A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Chapter 28 - Manual Lifting and Handling Loads

28.1 Assessing Manual Handling Hazards

Before a worker manually lifts, lowers, pushes, pulls, carries, handles or transports a load that could injure the worker, Alin Machining Company dba Power Plant Services will perform a hazard assessment that considers:

(a) the weight of the load or object,
(b) the size of the load,
(c) the shape or bulk of the load,
(d) the number of times the load will be moved,
(e) the manner in which the load will be moved,
(f) if mechanical lifting equipment is required,
(g) if a two-man lift is required,
(h) is there will be any obscured vision while moving or carrying the object, and
(i) the type of walking path or surface where the object is to be moved or carried. Does it involve ramps, turnbacks, stairs, etc.

28.2 Equipment And Lifting Devices

Alin Machining Company dba Power Plant Services will provide, where reasonably practicable, appropriate equipment for lifting, lowering, pushing, pulling, carrying, handling or transporting heavy or awkward loads. This equipment shall include but is not limited to:

- hand trucks
- dollies
- jacks
- carts
- hoists

Other engineering controls such as conveyors, lift tables and alteration of work station design will be considered when the employee brings it to the ‘‘Safety Director’’ – Safety Director.

Alin Machining Company dba Power Plant Services will ensure through management that workers use the equipment provided in the above stated subsection to help with the lifting, lowering, pushing, pulling, carrying, handling or the transportation or awkward loads. Use of the provided equipment is mandatory and it’s use will be enforced.

Workers must use the equipment provided for lifting, lowering, pushing, pulling, carrying, handling or transporting heavy or awkward loads. For the purposes of this section, a heavy or awkward load includes equipment, goods, supplies, persons and animals.

28.2.a Maximum Load Rating

A lifting device shall be plainly marked with sufficient information so as to enable the

operator of the device to determine the maximum rated load that the device is capable of lifting under any operating condition.

28.2.b Competency

A lifting device shall be operated, only by, a competent person or a worker being instructed who is accompanied by a competent person.

28.2.c Raising Or Lowering A Worker

A crane, lift truck or similar equipment shall be used to support, raise or lower a worker only when the worker is on a platform, equipped with adequate safety devices that will automatically prevent the platform and load from falling if the platform's normal support fails.

28.3 Adapting Heavy Or Awkward Loads

If the equipment provided under the above section is not reasonably practicable in a particular circumstance or for a particular heavy or awkward load, the employer must take all practicable means,

(a) to adapt the load to facilitate lifting, lowering, pushing, pulling, carrying, handling or transporting the load without injuring workers,

(b) to otherwise minimize the manual handling required to move the load, or

(c)when the use of manual lifting equipment is not practice or is impossible, then ''two man lifts'' must be used.

28.4 Musculoskeletal Injuries

If a worker reports to the employer what the worker believes to be work related symptoms of a musculoskeletal injury, the employer must promptly

(a) review the activities of that worker, and of other workers doing / similar tasks, to identify work-related causes of the symptoms, if any, and

(b) take corrective measures to avoid further injuries if the causes of the symptoms are work related.

Back injuries continue to rise in number and severity in all industries. Alin Machining Company dba Power Plant Services believes that many of these injuries can be eliminated with proper lifting and carrying techniques and related education and the motivation to utilize these techniques. The backs and lifting safety program addresses proper lifting and carrying techniques and related back injury information.

28.4.a Training to Avoid Musculoskeletal Injuries

As outlined in this chapter each worker or employee will be properly trained on ergonomics, recognition of hazards and injuries. Each worker or employee will be

trained on proper reporting of hazards, injuries and hazardous conditions. Alin Machining Company dba Power Plant Services will also provide training procedures for the early detection and reporting of hazardous or dangerous situations or work environments/habits

28.4.b Scope and application

This program covers operations and activities involving job specific training which require lifting, carrying, manually moving materials, tools, and other loads, and activities which may require reaching, bending over, twisting, and turning. Also not include hazard controls and safe work practices. This training will be done in order to ensure that these tasks are performed safely or properly and to prevent future injuries.

The program is intended to reduce and eliminate incidents of back injury and to promote back injury prevention. As outlined below each and every musculoskeletal injury shall be properly investigated and documented. After such process has taken place, Alin Machining Company dba Power Plant Services will incorporate the investigation findings into the work procedures in order to prevent future injuries.

28.4.c Responsibilities

28.4.c.1 Program Administrator/Safety Director

The program director is responsible for providing training and education on back injuries, proper lifting and carrying techniques, exercise and conditioning, use of lifting aids, and related back injury prevention information.

28.4.c.2 Employees

Employees are responsible for utilizing available lifting aids, using proper manual lifting and carrying techniques, and taking appropriate actions and precautions to prevent back injuries.

28.4.d Program Elements

Education and training

The education and training program will include the following elements:

1. Discussion of back activities; bending, reaching, lifting, sitting, recreational activities, work
2. Back safety goals
    a. Back injury and injury prevention
    b. Lifting techniques
6. 3. Back statistics
    a. 80% of Americans will have a back injury that requires medical attention
    b. Back injuries are the second most common cause of lost work time, next to the common cold
    c. Back injuries occur more often at home than at work
    d. Injured backs are often subject to reinjury
    e. In addition to missed work, there may be a lifetime of pain

7. 4. Back parts
    a. Vertebrae
    b. Spinal cord
    c. Disks
    d. Muscles, ligaments, tendons
8. Potential back injury
    a. Strain or sprain
    b. Bulging disk
    c. Herniated disk
9. Causes of injury
    a. Years of abuse
    b. Poor posture
    c. Unconditioned back
    d. Excess weight and potbellies
    e. Bad lifting techniques
10. Back posture
    a. Maintain the back's natural curves
    b. Standing
    c. Sitting
    d. Sleeping
    e. Changing posture and stretching
    f. Adaptive posture
11. Conditioning your back
    a. Physical conditioning
    b. Flexibility
    c. Excess weight loss, potbelly loss
12. Exercises
    a. Walking
    b. Stretching
    c. Sit-ups
    d. Leg lifts
    e. Squats
13. Lifting equipment
    a. Powered equipment such as forklifts, powered carts, electric pallet jacks
    b. Handtrucks, carts, pallet jacks
    c. Cranes, hoists
    d. Conveyors
14. Lifting plan
    a. Size up the load's weight, shape, and size
    b. Clear path considering objects, tight doorways, stairs, ramps

c. Unloading zone

15. Proper lift
    a. Stand with a shoulder-width stance
    b. Squat by bending your knees and hips
    c. Pull the load close and grip it
    d. Tighten stomach, lift head
    e. Rise up with your legs
16. Carrying the load
    a. Make sure you can see where you are going
    b. Take small, stable steps
    c. Do not twist your back
17. Proper unloading
    a. Squat down with the load (reverse of the lift, using legs)
    b. Do not bend your back excessively with the load
    c. Be careful of fingers
18. Overhead lifts
    a. Shoulder level with the load
    b. Slide the load close
    c. Use your legs
19. Long loads
    a. Pick up one end
    b. Place the balance point on your shoulder
    c. Watch both ends
20. Lifting bags
    a. Squat down next to the bag
    b. Grab it at opposite corners
    c. Lift it to your thigh or waist
    d. Stand up
    e. Put the load on your shoulder
21. Team lifting
    a. Designate a person to lead the lift
    b. Lift at the same time
    c. Keep the load level
    d. Unload slowly together
22. Think about your back
    a. Don’t be lazy
    b. Think long term
    c. Don’t try to lift too much
    d. Consider your back in all efforts

28.4.e Program Evaluation

Injuries and illnesses will be evaluated and those related to material handling and back injuries will be specifically reviewed to determine cause and how the back and lifting program may better interact or may be more effective.

28.5 Injury Management Policy

Alin Machining Company dba Power Plant Services is committed to the protection from accidental loss of all its resources, including employees and physical assets.

In fulfilling this commitment, to protect both people and property, management will provide and maintain a safe work environment in accordance with industry standards and in compliance with legislative requirements and will strive to eliminate any foreseeable hazards which may result in property damage, accidents or personal injury/illness. When injury does occur, management will make every reasonable effort to assist ill and injured employees to return to the workplace.

All employees will be equally responsible for minimizing accidents within our facilities. Safe work practices and procedures will be clearly defined in the Safety Manual for all employees to follow.

Accidental loss can be controlled through good management in combination with active employee involvement. Safety is the direct responsibility of all managers, supervisors and employees.

All management functions will comply with company safety requirements as they relate to planning, operation and maintenance of facilities and equipment. All employees will perform their jobs properly and in accordance with established procedures and safe work practices.

I trust that all of you will join me in a personal commitment to make safety a way of life.

The safety information in this policy does not take precedence over current applicable OSHA Regulations or Legislation. All employees should be familiar with the current OSHA Regulations or Legislation.

	Date: April 29, 2013

Safety Director, ‘‘Safety Director’’

28.6 Accident Investigation

Employees and contractors are required to report all accidents/incidents to their supervisors. Alin Machining Company dba Power Plant Services will ensure that all incidents are thoroughly investigated, recorded and reported to the Insurance carrier and OSHA, as required by 29 CFR Part 1904. On-Site supervisors are to ensure that the appropriate corrective actions are taken to prevent the recurrence of the incident.

The investigator should place emphasis on determining why the occurrence was not prevented by an existing safe work practice and should provide specific recommendations to correct any procedural deficiencies.

Alin Machining Company dba Power Plant Services will investigate all:

- Accidents that result in injuries that require lost time from work.
- Accidents that result in injuries that require medical attention.
- Accidents that result in damage to equipment, materials or property with the potential loss of $500 or more.
- Incidents or ‘near misses’ that could have resulted in a fatality, serious injury or property loss.

28.7 Responsibilities

1. All employees shall report all incidents as soon as possible to their foreman/supervisor and assist in the investigation when requested.

2. The supervisor immediately in charge of the operations affected by the incident will conduct the investigation. Should a fatality or serious injury occur, he or she must seek the assistance of management and Workplace Health and Safety.

3. Management is responsible for directing all accident investigations, preparing the necessary reports and meeting with any governmental inspectors. All findings should be documented with the causes and recommended corrective actions described. Management is also responsible for following up on any corrective measures.

4. Management will periodically evaluate work areas, work stations and work configurations and employees' work techniques and habits to assess the potential for and prevention of injuries.

5. New procedures and operations shall be evaluated and engineered in order to remove hazards before work processes and started or implemented.

28.8 Investigation Kit

An investigation kit should be readily available at all times and should contain the following:

- Company accident investigation report
- Witness statement
- Writing pad and pens
- A camera with film and spare batteries
- A flashlight with spare batteries
- Colored ribbon to cordon-off the scene
- A tape measure

28.9 Investigation Procedure:

1. Take command - Senior Supervisor on site.
- Assign personnel to specific tasks.

2. Provide protection - Senior Supervisor on site.
- Isolate accident scene from continuing work or further hazards.

3. First aid - qualified First Aider.
- Give first aid as soon as possible.

4. Ambulance/Rescue - Competent worker.
- Details of site location.
- Number of injuries.
- Nature of injuries.
- Person to meet ambulance and direct to scene.

5. Advise authorities - Senior Supervisor.
- Inform senior management.
- Inform police if required.
- Inform **OSHA Office** nearest to scene.

6. Isolate accident scene - Foreman/Lead Hand.
- Barricade.

- Rope off.
- Post a guard on the scene.
- Do not disturb any evidence on the scene.

7. Investigation - Senior Supervisor and Foreman/Lead Hand.
- Who was involved?
- Time, date and location.
- When.
- What actually happened?
- Interview witnesses.
- Where - visit site.
- Ensure confidentiality.
- Look for basic causes not faults.
- Ensure interviewee is at ease.

8. Objective report - Senior Supervisor.
- Facts.
- Opinions.
- Statements.
- Photos and diagrams.
- Related information.
- Summary of possible causes.
- Preventative recommendations.
- Follow-up.

28.10 Safety Incident Review Committee

Alin Machining Company dba Power Plant Services has in place a Safety Review Committee, to review and react to serious incidents of health and safety violations. This committee can be convened by request of any level of management to review either a near miss or an actual accident. The people involved in the incident will be included in the meeting. Recommendations on policy changes or actions to be taken will be referred to Safety Director and/or Safety Manager for development and implementation.

Prepared	Project	Project	Date

Hazard Identification Form

No.	HAZARDS	CHECK	PRIORITIES #1-5	Safe Work Practice	Job Procedures
1	Housekeeping/Waste Disposal				
2	Material Storage/Handling				
3	Lighting				
4	Ventilation				
5	Confined Space Entry				
6	Radiation Exposure				
7	Power Tools				
8	Pipe Handling				
9	PPE: Basic/Specialized				
10	Cables/Ropes/Chains/Slings				
11	Flammables (Fire/Explosion)				
12	Overhead Hazards				
13	Major Lifts (Hoisting/Rigging)				
14	Ladders				
15	Gas (Toxic or Non-Life Supporting)				
16	Hazardous Materials (WHMIS)				
17	Work at Heights				
18	Scaffolds				
19	Vehicle Traffic				
20	Propane Torches/Cylinders				
21	Fall Protection				
22	Protection to Public				
23	Sandblasting				
24	Pressure Testing Pipelines				
25	Electrical Hazards				
26	Mobile Equipment				
27	Gas Storage				
28	Weather Conditions				
29	Other				
30					
31					
32					
33					
34					

Representative	Signature	
Supervisor Review By		
Management Review		
Client Review By		

28.12 Training For Lifting And Handling Loads

Alin Machining Company dba Power Plant Services ensures that a worker who is to engage in the lifting, holding or transporting of loads receives appropriate training in safe methods of manually lifting, holding or carrying of loads.

28.13 Ergonomics Training

Our company will ensure that a worker who may be exposed to the possibility of musculoskeletal injury is trained in specific measures to eliminate or reduce that possibility. An employer must ensure that the training includes: (a) identification of factors that could lead to a musculoskeletal injury, (b) the early signs and symptoms of musculoskeletal injury and their potential health effects, and (c) preventive measures including, where applicable, the use of altered work procedures, mechanical aids, and personal protective equipment.

Chapter 29 - Mobile Equipment

29.1 Operation Of Mobile Equipment

Only authorized employees shall be allowed to operate mobile equipment. Authorization to operate mobile equipment will be issued to employees qualifying under appropriate training and proficiency testing.

29.2 Pre-Shift Inspections

At the beginning of each shift, the operator shall inspect and check the assigned equipment, reporting immediately to his/her supervisor any malfunction of the clutch or of the braking system, steering, lighting, or control system and locking/tagging out the equipment if necessary.

29.3 Passengers / Riding Equipment

Unauthorized personnel shall not be permitted to ride on equipment unless it is equipped to accommodate riders safely.

29.4 Backing-up Signal Alarm

The operator shall make sure the warning signal is operating when the equipment is backing up. It is the responsibility of Alin Machining Company dba Power Plant Services to purchase and maintain properly working back-up signal alarms for the mobile equipment.

29.5 Proper Access

The operator shall use access provided to get on or off of equipment. Do not jump to the ground.

29.6 Eye Protection

No operator shall operate mobile equipment without the protection of an enclosed cab or approved eye protection.

29.7 Seat Belts

Before starting the engine, the driver shall fasten seat belts and adjust them for a proper fit.

29.8 Proper Equipment Use

The operator shall not use, or attempt to use any vehicle in any manner or for any purpose other than for which it is designated.

The operator shall not load the vehicle/equipment beyond its established load limit and shall not move loads which because of the length, width, or height that have not been centered and secured for safe transportation.

29.9 Fueling Procedures

The operator of a gasoline or diesel vehicle shall shut off the engine before filling the fuel tank and shall see that the nozzle of the filling hose makes contact with the filling neck of the tank. No one shall be on the vehicle during fueling operations except as specifically required by design. There shall be no smoking or open flames in the immediate area during fueling operation.

Chapter 30 - Noise Exposure / Hearing Protection & Conservation

30.1 Noise Exposure Training Program

Alin Machining Company dba Power Plant Services has developed a training program to include noise awareness and noise exposure training for all of its employees. It will include the employees who are or who may be exposed to a noise action level, or work in a high noise area at or above an 8-hour time-weighted average of 85 decibels before each initial assignment, and requires that all employee's participation in this program.

The training program shall be repeated annually for each employee included in the hearing conservation program. Information provided in the training program shall be updated to be consistent with changes in protective equipment (PPE) and work processes and include the proper techniques of wearing hearing protection.

30.1.a Access to Information and Training Materials

Alin Machining Company dba Power Plant Services shall make available to affected employees or their representatives copies of this standard and shall also post a copy in the workplace.

Alin Machining Company dba Power Plant Services shall provide to affected employees any informational materials pertaining to the standard that are supplied to Alin Machining Company dba Power Plant Services by the Assistant Secretary, and will also provide, upon request, all materials related to Alin Machining Company dba Power Plant Services 's training and education program pertaining to this standard to designated representatives and to the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor and the Director of the National Institute for Occupational Safety and Health.

30.2 Noise Exposure

When employees are subjected to sound exceeding those listed in Table G-16, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of Table G-16, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table.

If the variations in noise level involve maxima at intervals of 1 second or less, it is to be considered continuous.

TABLE G-16 - PERMISSIBLE NOISE EXPOSURES (1)

Duration per day, hours	Sound level dBA slow response
8	90
6	92
4	95
3	97

2	100
1 1/2	102
1	105
1/2	110
1/4 or less	115

Footnote(1) When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: C(1)/T(1) + C(2)/T(2) C(n)/T(n) exceeds unity, then, the mixed exposure should be considered to exceed the limit value. Cn indicates the total time of exposure at a specified noise level, and Tn indicates the total time of exposure permitted at that level. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

30.3 Hearing Conservation Program

Alin Machining Company dba Power Plant Services shall administer a continuing, effective hearing conservation program whenever employee noise exposures equal or exceed an 8-hour time-weighted average sound level (TWA) of 85 decibels measured on the A scale (slow response) or, equivalently, a dose of fifty percent. Alin Machining Company dba Power Plant Services 's hearing conservation program shall be computed in accordance with Appendix A and Table G-16a, measuring employee noise exposures, and without regard to any attenuation provided by the use of personal protective equipment.

30.4 Monitoring

When information indicates that any employee's exposure may equal or exceed an 8-hour time-weighted average of 85 decibels, Alin Machining Company dba Power Plant Services shall develop and implement a monitoring program.

30.4.a Sampling

The sampling strategy shall be designed to identify employees for inclusion in the hearing conservation program and to enable the proper selection of hearing protectors.

Where circumstances such as high worker mobility, significant variations in sound level, or a significant component of impulse noise make area monitoring generally inappropriate, Alin Machining Company dba Power Plant Services shall use representative personal sampling to comply with the monitoring requirements of this paragraph unless Alin Machining Company dba Power Plant Services can show that area sampling produces equivalent results.

30.4.b Audiometric Testing Program

Alin Machining Company dba Power Plant Services shall establish and maintain an

audiometric testing program as provided in this paragraph by making audiometric testing available to all employees whose exposures equal or exceed an 8-hour time-weighted average of 85 decibels. Alin Machining Company dba Power Plant Services program will be provided at no cost to employees.

30.4.c Baseline Audiogram

Within 6 months of an employee's first exposure at or above the action level, Alin Machining Company dba Power Plant Services shall establish a valid baseline audiogram against which subsequent audiograms can be compared.

30.4.d Mobile Test Van Exception

Where mobile test vans are used to meet the audiometric testing obligation, Alin Machining Company dba Power Plant Services shall obtain a valid baseline audiogram within 1 year of an employee's first exposure at or above the action level.

30.4.e Testing

Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise. Hearing protectors may be used as a substitute for the requirement that baseline audiograms be preceded by 14 hours without exposure to workplace noise.

Alin Machining Company dba Power Plant Services shall notify employees of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination.

30.5 Annual Audiogram

At least annually after obtaining the baseline audiogram, Alin Machining Company dba Power Plant Services shall obtain a new audiogram for each employee exposed at or above an 8-hour time-weighted average of 85 decibels.

30.5.a Evaluation Audiogram / Standard Threshold Shift

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 (is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear) has occurred. This comparison may be done by a technician.

30.5.b Employee Notification

If a comparison of the annual audiogram to the baseline audiogram indicates a standard threshold shift has occurred, the employee shall be informed of this fact in writing, within 21 days of the determination.

30.6 Control Steps

Unless a physician determines that the standard threshold shift is not work related or aggravated by occupational noise exposure, Alin Machining Company dba Power Plant Services shall ensure that the following steps are taken when a standard threshold shift occurs:

- Employees not using hearing protectors shall be fitted with hearing protectors, trained in their use and care, and required to use them.

- Employees already using hearing protectors shall be refitted and retrained in the use of hearing protectors and provided with hearing protectors offering greater attenuation if necessary.

- The employee shall be referred for a clinical audiological evaluation or an otological examination, as appropriate, if additional testing is necessary or if Alin Machining Company dba Power Plant Services suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.

- The employee is informed of the need for an otological examination if a medical pathology of the ear that is unrelated to the use of hearing protectors is suspected.

30.7 Hearing Protectors

Alin Machining Company dba Power Plant Services shall make hearing protectors available to all employees exposed to an 8-hour time-weighted average of 85 decibels or greater at no cost to the employees. Hearing protectors shall be replaced as necessary. Employees shall be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors provided by Alin Machining Company dba Power Plant Services . Alin Machining Company dba Power Plant Services ’s noise safety program requires that hearing protectors are worn:

- By an employee who is required by Table G - 16 of this chapter to wear personal protective equipment; and

- By any employee who is exposed to an 8-hour time-weighted average of 85 decibels or greater, and who:
  - Has not yet had a baseline audiogram established pursuant to section 30.7 ; or
  - Has experienced a standard threshold shift.
- By all employees are in signed areas while on an owner client facility.

30.7.a Hearing Protector Attenuation

Alin Machining Company dba Power Plant Services shall evaluate hearing protector attenuation for the specific noise environments in which the protector will be used. Alin

Machining Company dba Power Plant Services shall use one of the evaluation methods described in App. B: 'Methods for Estimating the Adequacy of Hearing Protection Attenuation.'

30.8 Recordkeeping

30.8.a Exposure Measurements

Alin Machining Company dba Power Plant Services shall maintain an accurate record of all employee exposure measurements required in this chapter.

30.8.b Audiometric Tests

Alin Machining Company dba Power Plant Services shall retain all employee audiometric test records obtained pursuant to section 30.4.b of this chapter, with the record to include:

- Name and job classification of the employee;
- Date of the audiogram;
- The examiner's name;
- Date of the last acoustic or exhaustive calibration of the audiometer; and
- Employee's most recent noise exposure assessment.

30.8.c Access to Records

All records required by this section shall be provided upon request to employees, former employees, to designated representatives and to the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, and the Director of the National Institute for Occupational Safety and Health
.

30.8.d Transfer of Records

If Alin Machining Company dba Power Plant Services ceases to do business, they shall transfer to the successor employer all records required to be maintained by this section, and the successor employer shall retain them for the remainder of the period prescribed below:

- Noise exposure measurement records shall be retained for two years.

- Audiometric test records shall be retained for the duration of the affected employee's employment.

Chapter 31 - Non-DOT Drug & Alcohol Policy

31.1 Pre-Employment Testing

A pre-employment drug test may be conducted on all individuals who meet the criteria for employment.

The company will maintain pre-employment screening practices designed to prevent hiring individuals who use illegal drugs or individuals whose use of legal drugs or alcohol indicates a potential for impaired or unsafe job performance.

All applicants or newly hired employees will undergo a drug screen at a predetermined medical facility. Alin Machining Company dba Power Plant Services will pay each applicant or employee who takes and passes the drug screen test for all the time it takes to undergo the drug screen up to a maximum of two hours travel time plus lab time.

Applicants not passing the drug screen will not be placed on the Alin Machining Company dba Power Plant Services payroll or receive any compensation. Employees not passing the drug screen will be removed from the Alin Machining Company dba Power Plant Services payroll. Alin Machining Company dba Power Plant Services will pay the cost for administering the drug screen.

All applicants will be informed of the 48 - 96 hours of delay prior to joining the work force to obtain the results of the drug test.

A sufficient amount of a sample shall be taken to allow for an initial test and a confirmation test. The initial test will be by Enzyme Multiplied Immunoassay Technique (EMIT). In the event a question or positive result arises from the initial test, a confirmation test must be utilized before action will be taken against an employee or applicant. The confirmation test will be by Gas Chromatography - Mass Spectrometry (GC/MS).

31.2 Unfit Condition

All supervisory personnel will be trained in the recognizing the specific, contemporaneous physical, behavioral, and performance indicators of possible drug or alcohol abuse.

The decision to test an employee for alcohol and drugs while on duty will be done by a meeting of the employee's supervisor and at least one other supervisor and the Safety Coordinator. While at a Client/Host worksite or facility, the designated company representative must also be notified.

The search procedure shall be initiated as part of any observation as an integral part of

the screening process.

The employee shall be escorted to a designated "off-site" medical facility for actual screening.

The employee will be excluded from further work at the Client/Host worksite or facility pending the outcome of the test results.

31.3 Incident on Duty

The decision to test an employee for alcohol and drugs while on duty will be done by a meeting of the employee's supervisor and at least one other supervisor and the Safety Coordinator. While at a Client/Host worksite or facility, the decision to test must be made in conjunction with their designated representative.

Any employee refusing to submit to the alcohol and drug test will be immediately suspended from all work responsibilities without pay until all requested tests are completed; for a period not to exceed five (5) working days. If the employee chooses not to submit to the drug and alcohol screen during the five (5) day period, the employee may be considered to have voluntarily terminated employment.

The employee will be excluded from further work at the Client/Host worksite or facility pending the outcome of the test results.

31.4 Reasonable Suspicion Testing

Alin Machining Company dba Power Plant Services will drug test an employee for drugs and alcohol when there is Reasonable Suspicion to believe the employee is using a prohibited drug or under the influence of alcohol.

A decision to test will be based on specific contemporaneous physical, behavioral, or performance indicators of probable drug use such as:

a. Discovery of an employee in possession of drugs or alcohol while on duty;
b. Sudden change in work performance;
c. Sudden change in attitude;
d. Minor, yet consistent avoidable accidents;
e. Observations of extreme behaviors, i.e.; slurred speech; uneven gait; mood swings; violent outbursts of temper.
f. Excessive Absenteeism;
g. Pattern of consistent tardiness;
h. Disappearing/missing from designated work site without the supervisor aware of whereabouts;

i. Consistently in areas where employees should not be or has reason to be.

Before an employee is asked to test for Reasonable Suspicion, two of the company's supervisors will substantiate and concur in the decision to request a drug test. One of the two supervisors must have observed the behavior. The two supervisors may concur by telephone.

When a negative test result is received, the employee will be put back to work.

When a confirmed positive test result is received, the employee will be advised in writing of his/her termination of employment. The written notification will include the reason for the termination, the conditions under which rehire could be considered and specific recommendation to seek professional assistance.

Any employee refusing to submit to the alcohol and drug test will be suspended from all work responsibilities without pay until all requested tests are completed; for a period not to exceed five (5) working days. If the employee chooses not to submit to the drug and alcohol screen during the five (5) day period, the employee may be considered to have voluntarily terminated employment.

31.5 Random Testing

Random testing; when required by Customer, State, or Federal mandate: applies to all employees including supervisors, as well as those who just supervise such performance by others.

Alin Machining Company dba Power Plant Services will random test fifty percent (50%) of all employees annually.

The tests will be conducted once a month in order to be spaced throughout the year.

To assure that the selection process for random testing is indeed random, all employees will be place in a common selection pool

When a confirmed positive test result is received the employee will be advised in writing of his/her termination of employment.

The written notification will include the reason for the termination, the conditions under which rehire could be considered, and the specific recommendations to seek professional assistance.

See specific requirements of Customer Substance Abuse policies, which will be distributed as appendices to this Drug and Alcohol Prevention Program.

31.6 Post Accident Testing

Employees whose performance either contributed to an accident or cannot be completely discounted as a contributing factor to the accident will be tested for drugs and alcohol. The employee will be tested as soon as possible, but no later than 32 hours after the accident or incident.

An accident on is defined as an event that involves mechanical failure or damage to of our equipment or that of our customer, a death or personal injury, or vehicle accident. An event that is significant in the judgment of our customer, or Alin Machining Company dba Power Plant Services even if it does not meet the criteria of paragraph (a).

When a negative test result is received, the employee will be put back to work after an appropriate medical release to return to work.

When a confirmed positive test is received, the employee wll not be allowed to work on a Client/Host worksite or facility, the employee will then be advised in writing of his/her termination of employment. The written notification will include the reason for the termination, the conditions under which rehire could be considered, and the specific recommendation to seek professional assistance.

Chapter 32 - PPE Assessments / Personal Protective Equipment

32.1 Training

Alin Machining Company dba Power Plant Services shall provide training to each employee who is required to use the Personal Protective Equipment - which will be referred to as 'PPE'. Each employee will be trained to know at minimum the following:

PPE Training List 1

- When PPE is necessary;
- What PPE is necessary;
- How to properly don, doff, adjust, and wear PPE;
- The limitations of the PPE; and,
- The proper care, maintenance, useful life and disposal of the PPE.

Each affected employee shall demonstrate an understanding of the training specified in the list above and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.

When Alin Machining Company dba Power Plant Services has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by PPE Training List 1, Alin Machining Company dba Power Plant Services will retrain each such employee. Circumstances where retraining of an employee is required include, but are not limited to, the following:

PPE Training List 2

- Changes in the workplace render previous training obsolete; or
- Changes in the types of PPE to be used render previous training obsolete; or
- Inadequacies in an affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

Alin Machining Company dba Power Plant Services shall verify that each affected employee has received and understood the required training program through a written certification that will include:

1. Name of each employee trained;
2. The date(s) of training;
3. List the Division / Branch / Location / Section etc; and
4. Identifies the subject of the certification.

32.2 Application

Protective equipment for Alin Machining Company dba Power Plant Services 's employees includes personal protective equipment for:

- eyes,
- face,
- head,
- extremities,
- protective clothing,
- respiratory devices,
- protective shields and barriers,

are and will be provided, used, and maintained in a sanitary and reliable working condition wherever it is necessary by reason of:

- hazards of processes or environment,
- chemical hazards,
- radiological hazards, or
- mechanical irritants

encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

32.3 Employee-owned Equipment

Where employees provide their own protective equipment, Alin Machining Company dba Power Plant Services will continue to be responsible to assure its adequacy, including proper maintenance and sanitation of such equipment.

32.4 Hazard Assessment and Equipment Selection

Alin Machining Company dba Power Plant Services shall assess the workplace by doing a "Hazard Assessment" to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE).

Alin Machining Company dba Power Plant Services will verify that the required workplace hazard assessment has been performed through a written certification that will:

1. Identifies the workplace evaluated; determination if hazards are present or are likely to be present, which necessitate the use of PPE.
2. The person certifying that the evaluation has been performed;

3. The date(s) of the hazard assessment; and,
4. Identifies the document as a certification of hazard assessment.

If such hazards are present, or are likely to be present, Alin Machining Company dba Power Plant Services will:

1. Communicate selection decisions to each affected employee;
2. Select the types of PPE that will best protect the affected employee from the hazards identified in the hazard assessment; and
3. Select PPE that properly fits each affected employee.

32.5 Defective and Damaged Equipment

Defective or damaged personal protective equipment shall not be used.

32.6 Proper PPE Selection and Fitting

If hazards are present or likely to be present, has the PPE that has been properly selected for each affected employee. The selection and reasons for selection should be given to the employee.

All PPE must be fitted to each affected employee and proper fitting, including proper donning, doffing, cleaning, and maintenance shall be performed and documented.

Chapter 33 - PSM Overview / Contractor Responsibilities

33.1 Employee Training

All employees, including maintenance and contractor employees, involved with highly hazardous chemicals need to fully understand the safety and health hazards of the chemicals and processes they work with for the protection of themselves, their fellow employees and the citizens of nearby communities. Training conducted in compliance with 1910.1200, the Hazard Communication standard, will help employees to be more knowledgeable about the chemicals they work with as well as familiarize them with reading and understanding MSDS. However, additional training in subjects such as operating procedures and safety work practices, emergency evacuation and response, safety procedures, routine and non-routine work authorization activities, and other areas pertinent to process safety and health will need to be covered by an company's training program. Alin Machining Company dba Power Plant Services shall assure that each employee and contract employee is instructed in the known potential fire, explosion, or toxic release hazards related to his/her job and the process, and the applicable provisions of the emergency action plan. They will be trained in the work practices and policies necessary to safely perform their job.

In establishing their training programs, Alin Machining Company dba Power Plant Services must clearly define the employees to be trained and what subjects are to be covered in their training. Alin Machining Company dba Power Plant Services in setting up their training program will need to clearly establish the goals and objectives they wish to achieve with the training that they provide to their employees. The learning goals or objectives should be written in clear measurable terms before the training begins. These goals and objectives need to be tailored to each of the specific training modules or segments. Alin Machining Company dba Power Plant Services will describe the important actions and conditions under which the employee will demonstrate competence or knowledge as well as what is acceptable performance.

Hands-on-training where employees are able to use their senses beyond listening, will enhance learning. For example, operating personnel, who will work in a control room or at control panels, would benefit by being trained at a simulated control panel or panels. Upset conditions of various types could be displayed on the simulator, and then the employee could go through the proper operating procedures to bring the simulator panel back to the normal operating parameters. A training environment could be created to help the trainee feel the full reality of the situation but, of course, under controlled conditions. This realistic type of training can be very effective in teaching employees correct procedures while allowing them to also see the consequences of what might happens if they do not follow established operating procedures. Other training techniques using videos or on-the-job training can also be very effective for teaching other job tasks, duties, or other important information. An effective training program will allow the employee to fully participate in the training process and to practice their skill or knowledge.

Alin Machining Company dba Power Plant Services will periodically evaluate their training programs to see if the necessary skills, knowledge, and routines are being

properly understood and implemented by their trained employees. The means or methods for evaluating the training should be developed along with the training program goals and objectives. Training program evaluation will help Alin Machining Company dba Power Plant Services to determine the amount of training their employees understood, and whether the desired results were obtained. If, after the evaluation, it appears that the trained employees are not at the level of knowledge and skill that was expected, the company will need to revise the training program, provide retraining, or provide more frequent refresher training sessions until the deficiency is resolved. Those who conducted the training and those who received the training should also be consulted as to how best to improve the training process. If there is a language barrier, the language known to the trainees should be used to reinforce the training messages and information. Alin Machining Company dba Power Plant Services will document and keep record of each employee's and contract employee's training. The documentation shall identify the employee or contract employee, the date in which they started and completed training, and proof that they have received, completed and clearly understood their training.

Careful consideration must be given to assure that employees including maintenance and contract employees receive current and updated training. For example, if changes are made to a process, impacted employees must be trained in the changes and understand the effects of the changes on their job tasks (e.g., any new operating procedures pertinent to their tasks). Additionally, as already discussed the evaluation of the employee's absorption of training will certainly influence the need for training.

33.2 Scope

Alin Machining Company dba Power Plant Services 's Process Safety Management Program contains requirements for preventing or minimizing the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals. These releases may result in toxic, fire or explosion hazards.

33.3 MSDS File

MSDS Master Sheet – located in the Appendix.

33.4 Safe Work Practices

Alin Machining Company dba Power Plant Services has developed and is implementing safe work practices that will provide for control of hazards during operations such as:

- lockout/tagout;
- confined space entry;
- opening process equipment or piping; and

- control over entrance into a facility by maintenance, contractor, laboratory, or other support personnel.

These safe work practices shall apply to all Alin Machining Company dba Power Plant Services ’s employees and contractor employees.

33.4.a Host Employer’s Safe Work Practices

Alin Machining Company dba Power Plant Services ’s employees will follow and abide by the contract employer’s safe work practices during operations such as:

- lockout/tagout;
- confined space entry;
- opening process equipment or piping; and
- control over entrance into a facility by maintenance, contractor, laboratory, or other support personnel.

Alin Machining Company dba Power Plant Services shall advise the contract employer of any unique hazards presented by work done by Alin Machining Company dba Power Plant Services ’s employees, or of any hazards found by work done by Alin Machining Company dba Power Plant Services ’s employees.

33.5 Hot Work Permit

Hot work and state hot work shall not be performed by Alin Machining Company dba Power Plant Services ‘s employees until a hot work permit is obtained from the host employer.

The permit shall document that the fire prevention and protection requirements in 29 CFR 1910.252(a) have been implemented prior to beginning the hot work operations; it shall indicate the date(s) authorized for hot work; and identify the object on which hot work is to be performed.

The permit shall be kept on file until completion of the hot work operations.

33.6 Incident Investigation

Alin Machining Company dba Power Plant Services shall investigate each incident which resulted in, or could reasonably have resulted in a catastrophic release of highly hazardous chemical in the workplace.

Reporting of incidents and near misses will be reported immediately to the host facility. An incident investigation shall be initiated as promptly as possible, but not later than 48 hours following the incident.

An incident investigation team shall be established and consist of at least one person knowledgeable in the process involved, including a contract employee if the incident

involved work of the contractor, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident. Resolutions and corrective actions must be documented and maintained for 5 years.

33.7 Incident Reporting and Record Keeping

A report shall be prepared at the conclusion of the investigation which includes at a minimum:

- Date of incident;
- Date investigation began;
- A description of the incident;
- The factors that contributed to the incident; and
- Any recommendations resulting from the investigation.

Alin Machining Company dba Power Plant Services has established a system to promptly address and resolve the incident report findings and recommendations. All resolutions and corrective actions shall be documented.

The report shall be reviewed with all affected personnel whose job tasks are relevant to the incident findings including contract employees where applicable.

All Alin Machining Company dba Power Plant Services ’s Incident investigation reports shall be retained and kept in our records for five years.

33.8 Trade Secrets

Alin Machining Company dba Power Plant Services shall make all information necessary to comply with the chapter available to those persons responsible for compiling the process safety information, those assisting in the development of the process hazard analysis, those responsible for developing the operating procedures, and those involved in incident investigations, emergency planning and response and compliance audits without regard to possible trade secret status of such information.

Nothing in this section shall preclude Alin Machining Company dba Power Plant Services from requiring the persons to whom the information is made available to enter into confidentiality agreements not to disclose the information as set forth in 29 CFR 1910.1200. Alin Machining Company dba Power Plant Services will respect the confidentiality of trade secret information when working for other contractors or other owner clients when the process safety information is released to us.

Note Reference: Subject to the rules and procedures set forth in 29 CFR 1910.1200(i)(1) through 1910.1200(i)(12), employees and their designated representatives shall have access to trade

secret information contained within the process hazard analysis and other documents required to be developed by this standard.

Chapter 34 - Respiratory Protection

34.1 Overview

Alin Machining Company dba Power Plant Services will provide effective training to employees who are required to use respirators. The training must be comprehensive, understandable, and recur annually and more often if necessary. If Alin Machining Company dba Power Plant Services employees choose to voluntary use respirators, they will be required to review and comprehend some basic information about respirators. Alin Machining Company dba Power Plant Services will ensure that each employee can demonstrate knowledge of at least the following:

- Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator;
- What the limitations and capabilities of the respirator are;
- How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions;
- How to inspect, put on and remove, use, and check the seals of the respirator;
- What the procedures are for maintenance and storage of the respirator;
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators; and
- The general requirements of this section.

The training will be conducted in a manner that is understandable to the employee. Alin Machining Company dba Power Plant Services shall provide the training prior to requiring the employee to use a respirator in the workplace. Previous training not repeated initially by Alin Machining Company dba Power Plant Services must be provided no later than 12 months from the date of the previous training. Retraining shall be administered annually, and when the following situations occur:

- Changes in the workplace or the type of respirator render previous training obsolete;
- Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill; or
- Any other situation arises in which retraining appears necessary to ensure safe respirator use.

34.2 General Practices

In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination.

This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not

feasible, or while they are being instituted, appropriate respirators shall be used pursuant to this section.

When the atmosphere is oxygen deficient with oxygen content below 19.5% by volume, respirators are required.

Respirators shall be provided by Alin Machining Company dba Power Plant Services when such equipment is necessary to protect the health of the employee. Alin Machining Company dba Power Plant Services shall provide the respirators which are applicable and suitable for the purpose intended.

Alin Machining Company dba Power Plant Services shall be responsible for the implementation and maintenance of a respiratory protection program which shall include the requirements outlined in this chapter.

34.3 Program Administrator

34.3.a Scope

Alin Machining Company dba Power Plant Services has designated Safety Director, as the program administrator who is qualified by appropriate training or experience that is commensurate with the complexity of the program to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness.

Alin Machining Company dba Power Plant Services provides respirators, training, and medical evaluations at no cost to the employee.

34.3.b Surveillance

Appropriate surveillance shall be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, Alin Machining Company dba Power Plant Services shall reevaluate the continued effectiveness of the respirator.

34.3.c Plan

In any workplace where respirators are necessary to protect the health of the employee or whenever respirators are required by Alin Machining Company dba Power Plant Services , a written respiratory protection program with worksite-specific procedures will be implemented. The program shall be updated as necessary to reflect those changes in workplace conditions that affect respirator use. Alin Machining Company dba Power Plant Services shall include in the program the following provisions of this section, as applicable:

34.4 Selection of Respirators

34.4.a General Requirements

Alin Machining Company dba Power Plant Services shall select and provide an appropriate respirator based on the respiratory hazard(s) to which the worker is exposed and workplace and user factors that affect respirator performance and reliability. The respirator shall be a NIOSH-certified respirator used in compliance with the conditions of its certification.

Alin Machining Company dba Power Plant Services will identify and evaluate the respiratory hazard(s) in the workplace; this evaluation includes a reasonable estimate of employee exposures to respiratory hazard(s) and an identification of the contaminant's chemical state and physical form.

Alin Machining Company dba Power Plant Services shall select respirators from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

Where Alin Machining Company dba Power Plant Services cannot identify or reasonably estimate the employee exposure, Alin Machining Company dba Power Plant Services will consider the atmosphere to be IDLH.

34.4.b Respirators for IDLH Atmospheres

Alin Machining Company dba Power Plant Services provides the following respirators for employee use in IDLH atmospheres:

- A full facepiece pressure demand SCBA certified by NIOSH for a minimum service life of thirty minutes, or
- A combination full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.

Respirators provided only for escape from IDLH atmospheres shall be NIOSH-certified for escape from the atmosphere in which they will be used.

All oxygen-deficient atmospheres shall be considered IDLH.

Exception: If Alin Machining Company dba Power Plant Services **demonstrates that, under all foreseeable conditions, the oxygen concentration can be maintained within the ranges specified in Table II of this chapter (i.e., for the altitudes set out in the table), then any atmosphere-supplying respirator may be used**.

TABLE II

Altitude (ft.)	Oxygen deficient Atmospheres (% 02) for which the employer atmosphere-may rely on supplying respirators
Less than 3,001 3,001-4,000 4,001-5,000 5,001-6,000	16.0-19.5 16.4-19.5 17.1-19.5 17.8-19.5

6,001-7,000	18.5-19.5
7,001-8,0001	19.3-19.5.

1Above 8,000 feet the exception does not apply. Oxygen-enriched breathing air must be supplied above 14,000 feet.

34.5 Medical Controls

34.5.a General

Alin Machining Company dba Power Plant Services shall provide a medical evaluation to determine the employee's ability to use a respirator, before the employee is fit tested or required to use the respirator in the workplace. Alin Machining Company dba Power Plant Services may discontinue an employee's medical evaluations when the employee is no longer required to use a respirator.

34.5.b Administration of the Medical Questionnaire and Examinations

The medical questionnaire and examinations shall be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire shall be administered in a manner that ensures that the employee understands its content. Alin Machining Company dba Power Plant Services shall provide the employee with an opportunity to discuss the questionnaire and examination results with a Physician or other Licensed Health Care Professional.

34.6 Fit Testing

Before an employee is required to use any respirator with a negative or positive pressure tight-fitting facepiece, the employee must be fit tested with the same make, model, style, and size of respirator that will be used.

Alin Machining Company dba Power Plant Services requires all employees using a tight-fitting facepiece respirator to pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT).

Alin Machining Company dba Power Plant Services requires that an employee using a tight-fitting facepiece respirator is fit tested prior to initial use of the respirator, whenever a different respirator facepiece (size, style, model or make) is used, and at least annually thereafter.

Alin Machining Company dba Power Plant Services shall conduct an additional fit test whenever the employee reports, or a Physician or other Licensed Health Care Professional, supervisor, or Alin Machining Company dba Power Plant Services program administrator makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

If after passing a QLFT or QNFT, the employee subsequently notifies Alin Machining Company dba Power Plant Services program administrator, and Physician or other licensed health care professional that the fit of the respirator is unacceptable, the employee shall be given a reasonable opportunity to select a different respirator facepiece and to be retested.

The fit test shall be administered using an OSHA-accepted QLFT or QNFT protocol. The OSHA-accepted QLFT and QNFT protocols and procedures are contained in Appendix A of this manual.

QLFT may only be used to fit test negative pressure air-purifying respirators that must achieve a fit factor of 100 or less.

If the fit factor, as determined through an OSHA-accepted QNFT protocol, is equal to or greater than 100 for tight-fitting half facepieces, or equal to or greater than 500 for tight-fitting full facepieces, the QNFT has been passed with that respirator.

Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators shall be accomplished by performing quantitative or qualitative fit testing in the negative pressure mode, regardless of the mode of operation (negative or positive pressure) that is used for respiratory protection.

Qualitative fit testing of these respirators shall be accomplished by temporarily converting the respirator user's actual facepiece into a negative pressure respirator with appropriate filters, or by using an identical negative pressure air-purifying respirator facepiece with the same sealing surfaces as a surrogate for the atmosphere-supplying or powered air-purifying respirator facepiece.

Quantitative fit testing of these respirators shall be accomplished by modifying the facepiece to allow sampling inside the facepiece in the breathing zone of the user, midway between the nose and mouth. This requirement shall be accomplished by installing a permanent sampling probe onto a surrogate facepiece, or by using a sampling adapter designed to temporarily provide a means of sampling air from inside the facepiece.

Any modifications to the respirator facepiece for fit testing shall be completely removed, and the facepiece restored to NIOSH-approved configuration, before that facepiece can be used in the workplace.

34.7 Facepiece Seal Protection

Alin Machining Company dba Power Plant Services shall not permit respirators with tight-fitting facepieces to be worn by employees who have:

- Facial hair that comes between the sealing surface of the facepiece and the

face or that interferes with valve function; or
- Any condition that interferes with the face-to-facepiece seal or valve function.

If an employee wears corrective glasses or goggles or other personal protective equipment, Alin Machining Company dba Power Plant Services shall ensure that such equipment is worn in a manner that does not interfere with the seal of the facepiece to the face of the user.

For all tight-fitting respirators, Alin Machining Company dba Power Plant Services shall ensure that employees perform a user seal check **each time** they put on the respirator using 1910.134 Respiratory Appendix B-1: User Seal Check Procedures, or the procedures recommended by the respirator manufacturer were that Alin Machining Company dba Power Plant Services can demonstrates that they are as effective.

Appropriate surveillance shall be maintained of work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, the employer shall reevaluate the continued effectiveness of the respirator.

The employer shall ensure that employees leave the respirator use area:

To wash their faces and respirator facepieces as necessary to prevent eye or skin irritation associated with respirator use; or if they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece; or to replace the respirator or the filter, cartridge, or canister elements.

If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece, the employer must replace or repair the respirator before allowing the employee to return to the work area.

34.8 Procedures for IDLH Atmospheres

For all IDLH atmospheres, Alin Machining Company dba Power Plant Services procedures are:

- One employee or, when needed, more than one employee is located outside the IDLH atmosphere;
- Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere;
- The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue;
- Alin Machining Company dba Power Plant Services or designee is notified before the employee(s) located outside the IDLH atmosphere enter the IDLH atmosphere to provide emergency rescue;

- Alin Machining Company dba Power Plant Services or designee authorized to do so by Alin Machining Company dba Power Plant Services , once notified, provides necessary assistance appropriate to the situation;

Employee(s) located outside the IDLH atmospheres are equipped with:

- Pressure demand or other positive pressure SCBA, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either
- Appropriate retrieval equipment for removing the employee(s) who enter(s) these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry; or
- Equivalent means for rescue where retrieval equipment is not required.

34.9 Maintenance and Care

34.9.a Responsibility

Alin Machining Company dba Power Plant Services will provide for the cleaning and disinfecting, storage, inspection, and repair of respirators used by employees. The Safety Director or the Responsible Safety Officer, Safety Director shall be the person in charge of the maintenance, care and sanitation of the Respirators. These procedures will be followed to meet the requirements of the manufacturer's procedures or from Appendix B.

34.9.b Cleaning and Disinfecting

Alin Machining Company dba Power Plant Services will provide each respirator user with a respirator that is clean, sanitary, and in good working order. Alin Machining Company dba Power Plant Services shall ensure that respirators are cleaned and disinfected using the procedures recommended by the respirator manufacturer, provided that such procedures are of equivalent effectiveness.

The respirators shall be cleaned and disinfected at the following intervals:

- Respirators issued for the exclusive use of an employee shall be cleaned and disinfected as often as necessary to be maintained in a sanitary condition;
- Respirators issued to more than one employee shall be cleaned and disinfected before being worn by different individuals;
- Respirators maintained for emergency use shall be cleaned and disinfected after each use; and
- Respirators used in fit testing and training shall be cleaned and disinfected after each use.

34.10 Storage

All respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they shall be packed or stored to prevent deformation of the facepiece and exhalation valve.

In addition to the requirements of the above section, emergency respirators shall be:

- Kept accessible to the work area;
- Stored in compartments or in covers that are clearly marked as containing emergency respirators; and
- Stored in accordance with any applicable manufacturer instructions.

34.11 Inspection

Alin Machining Company dba Power Plant Services shall ensure that respirators are inspected as follows:

- All respirators used in routine situations shall be inspected before each use and during cleaning;
- All respirators maintained for use in emergency situations shall be inspected at least monthly and in accordance with the manufacturer's recommendations, and shall be checked for proper function before and after each use; and
- Emergency escape-only respirators shall be inspected before being carried into the workplace for use.

Alin Machining Company dba Power Plant Services shall ensure that respirator inspections include the following:

- A check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters or filters; and
- A check of elastomeric parts for pliability and signs of deterioration.

Self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be maintained in a fully charged state and shall be recharged when the pressure falls to 90% of the manufacturer's recommended pressure level. Alin Machining Company dba Power Plant Services shall determine that the regulator and warning devices function properly.

For respirators maintained for emergency use, Alin Machining Company dba Power Plant Services shall:

- Certify the respirator by documenting the date the inspection was performed, the name (or signature) of the person who made the inspection, the findings, required remedial action, and a serial number or other means of identifying

the inspected respirator; and
- Provide this information on a tag or label that is attached to the storage compartment for the respirator, is kept with the respirator, or is included in inspection reports stored as paper or electronic files. This information shall be maintained until replaced following a subsequent certification.

34.12 Breathing Air Quality and Use

Alin Machining Company dba Power Plant Services to provide employees using atmosphere-supplying respirators (supplied-air and SCBA) with breathing gases of high purity.

Alin Machining Company dba Power Plant Services shall ensure that compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration accords with the following specifications:

- Compressed and liquid oxygen shall meet the United States Pharmacopoeia requirements for medical or breathing oxygen; and

- Compressed breathing air shall meet at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:

    - Oxygen content (v/v) of 19.5-23.5%;
    - Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
    - Carbon monoxide (CO) content of 10 ppm or less;
    - Carbon dioxide content of 1,000 ppm or less; and

34.12.a Lack of Noticeable Odor

Alin Machining Company dba Power Plant Services shall ensure that compressed oxygen is not used in atmosphere-supplying respirators that have previously used compressed air.

Alin Machining Company dba Power Plant Services shall ensure that oxygen concentrations greater than 23.5% are used only in equipment designed for oxygen service or distribution.

Alin Machining Company dba Power Plant Services shall ensure that cylinders used to supply breathing air to respirators meet the following requirements:

- Cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 173 and part 178);
- Cylinders of purchased breathing air have a certificate of analysis from the

supplier that the breathing air meets the requirements for Grade D breathing air; and
- The moisture content in the cylinder does not exceed a dew point of -50 deg.F (-45.6 deg.C) at 1 atmosphere pressure.

34.13 Program Evaluation

Alin Machining Company dba Power Plant Services will conduct evaluations of the workplace to ensure that the written respiratory protection program is being properly implemented, and to consult employees to ensure that they are using the respirators properly.

Conduct evaluations of the workplace will be performed by Safety Director – Safety Director ,as necessary but not less than As needed, to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.

Alin Machining Company dba Power Plant Services shall regularly consult employees required to use respirators to assess the employees' views on program effectiveness and to identify any problems. Any problems that are identified during this assessment shall be corrected. Factors to be assessed include, but are not limited to:

- Respirator fit (including the ability to use the respirator without interfering with effective workplace performance);
- Appropriate respirator selection for the hazards to which the employee is exposed;
- Proper respirator use under the workplace conditions the employee encounters; and
- Proper respirator maintenance.

34.14 Recordkeeping

Alin Machining Company dba Power Plant Services ’s will establish and retain written information regarding medical evaluations, fit testing, and the respirator program. This information will facilitate employee involvement in the respirator program, assist Alin Machining Company dba Power Plant Services in auditing the adequacy of the program, and provide a record for compliance determinations by OSHA.

34.14.a Medical Evaluation

Records of medical evaluations required by this section must be retained and made available in accordance with 29 CFR 1910.1020.

34.14.b Fit Testing

Alin Machining Company dba Power Plant Services shall establish a record of the

qualitative and quantitative fit tests administered to an employee including:

- The name or identification of the employee tested;
- Type of fit test performed;
- Specific make, model, style, and size of respirator tested;
- Date of test; and
- The pass/fail results for QLFTs or the fit factor and strip chart recording or other recording of the test results for QNFTs.

Fit test records shall be retained for respirator users until the next fit test is administered. A written copy of the current respirator program shall be retained by Alin Machining Company dba Power Plant Services .

Written materials required to be retained under this paragraph shall be made available upon request to affected employees and to designated representatives of the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor and the Director of the National Institute for Occupational Safety and Health.

Chapter 35 - Rigging Material Handling

35.1 Inspection & Defective Removal

All Alin Machining Company dba Power Plant Services rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to ensure that it is safe.

Alin Machining Company dba Power Plant Services requires that all defective rigging equipment must be removed from service immediately.

Rigging equipment shall not be loaded in excess of its recommended safe working load, as prescribed in **Tables H-1 through H-20 in 1926.252(e)** for the specific equipment.

Load identification must be attached to the rigging before it is to be allowed to move.

Rigging equipment, when not in use, shall be removed from the immediate work area so as not to present a hazard to Alin Machining Company dba Power Plant Services employees.

Tag lines shall be used unless their use creates an unsafe condition.

35.2 Hook Throat Opening

Hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies shall be of a type that can be closed and locked, eliminating the hook throat opening.

Alternatively, an alloy anchor type shackle with a bolt, nut and retaining pin may be used.

All employees shall be kept clear of loads about to be lifted and of suspended loads.

Chapter 36 - Subcontractor Management Plan (SMP)

36.1 Subcontractors Will Be Pre-Qualified

Subcontractors will be pre-qualified by reviewing their safety programs, safety training documents, and safety statistics.

36.2 Criteria For Selecting Subcontractors

Alin Machining Company dba Power Plant Services will require that all subcontractors submit prequalification documentation for evaluation. Alin Machining Company dba Power Plant Services will also use acceptable safety metrics such as; The Total Recordable Incident Rate(TRIR), The Experience Modification Rates(EMR), The Days Away from Work, Restriction of Duty, or Transfer(DART), and Fatality Rates as criteria for selecting subcontractors. These safety metrics will be used as selection discriminators in best selecting subcontractors. Alin Machining Company dba Power Plant Services will also consider:

- Subcontractor Safety Pre-Qualification Form responses and subcontractor safety program documents review
- Subcontractor safety training documents review
- Subcontractor safety statistics review

This will also be used to compare and qualify the subcontractor's safety manual, safety programs, safety training, documentation and safety statistics. Alin Machining Company dba Power Plant Services will then select a subcontractor based on their safety performance and lowest risk and injury ratings.

36.3 Pre-job Meetings And Safety Orientations

Alin Machining Company dba Power Plant Services will make sure all subcontractors are included in pre-job meetings or kick-off meetings, and safety orientations. Each subcontractor will be contacted directly by Alin Machining Company dba Power Plant Services and made aware of any such meeting or safety orientations. Each individual subcontractor will print their name and place their signature on the ''Meeting Sign-In Sheet.''

36.4 Tailgate Safety Meetings – Job Safety Analysis – Hazard and Job Safety Inspections

Alin Machining Company dba Power Plant Services will make sure all subcontractors are included in tailgate safety meetings, job safety analysis or hazard assessments, and on the job safety inspections. Each subcontractor will be contacted directly by Alin

Machining Company dba Power Plant Services and made aware of any such tailgate safety meeting, job safety analysis or hazard and job safety inspections. Each individual subcontractor will print their name and place their signature on the ‘‘Tailgate Safety Meeting Sign-In Sheet.’’ Otherwise each subcontractor will take place or be a part or each job safety analysis or hazard and job safety inspections.

36.5 Conducting Post-Job Safety Performance Reviews

Alin Machining Company dba Power Plant Services will conduct post-job safety performance reviews on all subcontractors.

36.6 Procedure In Selecting Subcontractors

36.6.a Pre-Qualification of Subcontractors

Subcontractors will be pre-qualified by reviewing their safety programs, safety training documents and safety statistics.

36.6.b Evaluation Safety Metrics

Acceptable safety metrics will be used as criteria for prequalifying and selecting subcontractors. The safety metrics and scoring will consider:

- Alin Machining Company dba Power Plant Services Subcontractor Safety Pre-Qualification Form responses and subcontractor safety program documents review 60% (Rated from 0-60 total points)
- Subcontractor safety training documents review 20% (Rated from 0-20 total points)
- Subcontractor safety statistics review 20% (Rated from 0-20 total points)

36.6.c Evaluation Rating and Acceptance

The subcontractor rating system will have five designations:

- Equal to or Greater than 90 points = A – no restrictions.
- Between 85 and 89 points = B – Mitigation plan must be documented and approved by Alin Machining Company dba Power Plant Services .
- Between 81 and 84 points = C – Mitigation plan must be documented and approved by Alin Machining Company dba Power Plant Services ; management approval in writing.
- Between 71 and 80 points = D – Mandatory commitment meeting with senior subcontractor management present; mitigation plan documented and approved by Alin Machining Company dba Power Plant Services ; management approval in writing; trained subcontractor safety personnel on site during work regardless of number of workers.
- Less than 70 points = F – not to be used.

Once each subcontractor has been evaluated and scored, Alin Machining Company dba Power Plant Services will provide management the scores/ranking.

Alin Machining Company dba Power Plant Services reserves the right to change a subcontractor's status to "Non-Approved" if the subcontractor shows insufficient progress towards accepted mitigation plan or other agreed upon criteria.

36.6.d Subcontractor Involvement

Contractors are required to follow or implement the work practices and systems described below while performing work at Alin Machining Company dba Power Plant Services worksites:

- Attend a safety orientation, pre-job meeting or kick-off meeting provided by Alin Machining Company dba Power Plant Services prior to any work beginning
- Monitor employees for substance abuse and report nonconformities to Alin Machining Company dba Power Plant Services
- Ensure personnel have the required training and competency for their work
- Participate in Alin Machining Company dba Power Plant Services tailgate safety meetings, job safety analysis or hazard assessments and on the job safety inspections.
- Perform a pre-job safety inspection that includes equipment
- Participate in the BBS hazard reporting system
- Report all injuries, spills, property damage incidents and near misses
- Comply with onsite and Owner Client safety rules
- Implement Alin Machining Company dba Power Plant Services safety practices and processes as applicable
- Clean up and restore the worksite after the job is over
- Ensure compliance with regulations at all times
- Post job safety performance reviews shall be conducted for subcontractors.

Chapter 37 - Welding, Cutting, Hot Work

37.1 Fire Watch Training

Alin Machining Company dba Power Plant Services ’s fire watchers shall have fire extinguishing equipment readily available and be trained in its use. They shall be familiar with facilities for sounding an alarm in the event of a fire.

Alin Machining Company dba Power Plant Services ’s safety program requires that cutters or welders and their supervisors are suitably trained in the safe operation of their equipment and the safe use of the process.

37.1.a Fire Hazards

If the object to be welded or cut cannot readily be moved, all movable fire hazards in the vicinity shall be taken to a safe place.

37.1.b Guards

If the object to be welded or cut cannot be moved and if all the fire hazards cannot be removed, then guards shall be used to confine the heat, sparks, and slag, and to protect the immovable fire hazards.

37.1.c Restrictions

If the requirements stated in section 37.1.a and 37.1.b cannot be followed then welding and cutting shall not be performed.

37.1.d Fire Watch

Fire watchers shall be required whenever welding or cutting is performed in locations where other than a minor fire might develop, or any of the following conditions exist:

1. Appreciable combustible material, in building construction or contents, closer than 35 feet (10.7 m) to the point of operation.

2. Appreciable combustibles are more than 35 feet (10.7 m) away but are easily ignited by sparks.

3. Wall or floor openings within a 35-foot (10.7 m) radius expose combustible material in adjacent areas including concealed spaces in walls or floors.

4. Combustible materials are adjacent to the opposite side of metal partitions, walls, ceilings, or roofs and are likely to be ignited by conduction or radiation.

5. They shall watch for fires in all exposed areas, try to extinguish them only when obviously within the capacity of the equipment available, or otherwise sound the alarm.

37.1.d.1 Fire extinguishers

Suitable fire extinguishing equipment shall be maintained in a state of readiness for instant use. Such equipment may consist of pails of water, buckets of sand, hose or

portable extinguishers depending upon the nature and quantity of the combustible material exposed.

37.1.d.2 Maintained Fire Watch

A fire watch must be maintained for at least a half hour after completion of welding or cutting operations to detect and extinguish possible smoldering fires.

37.1.e Authorization

Before any cutting or welding is permitted, the area shall be inspected by The Competent Person, who is certified as the 'qualified person' that Alin Machining Company dba Power Plant Services has designated to be the person responsible for all authorizing of cutting and welding operations. They shall designate precautions to be followed in granting authorization to proceed preferably in the form of a written permit.

37.2 Work in Confined Spaces

37.2.a Ventilation

Ventilation is a prerequisite to work in confined spaces. For ventilation requirements see section 37.3 .

37.2.b Defined

Confined space, as used herein, is intended to mean a relatively small or restricted space such as a tank, boiler, pressure vessel, or small compartment of a ship.

37.2.c Securing Cylinders and Machinery

When welding or cutting is being performed in any confined spaces the gas cylinders and welding machines shall be left on the outside. Before operations are started, heavy portable equipment mounted on wheels shall be securely blocked to prevent accidental movement.

37.2.d Lifelines

Where a welder must enter a confined space through a manhole or other small opening, means shall be provided for quickly removing him in case of emergency. When safety belts and lifelines are used for this purpose they shall be so attached to the welder's body that his body cannot be jammed in a small exit opening. An attendant with a preplanned rescue procedure shall be stationed outside to observe the welder at all times and be capable of putting rescue operations into effect.

37.2.e Electrode Removal

When arc welding is to be suspended for any substantial period of time, such as during lunch or overnight, all electrodes shall be removed from the holders and the holders carefully located so that accidental contact cannot occur and the machine disconnected from the power source.

37.2.f Gas Cylinder Shutoff

In order to eliminate the possibility of gas escaping through leaks of improperly closed valves, when gas welding or cutting, the torch valves shall be closed and the fuel-gas and oxygen supply to the torch positively shut off at some point outside the confined area whenever the torch is not to be used for a substantial period of time, such as during lunch hour or overnight. Where practicable the torch and hose shall also be removed from the confined space.

37.2.g Warning Sign

After welding operations are completed, the welder shall mark the hot metal or provide some other means of warning Alin Machining Company dba Power Plant Services 's other workers.

37.3 Health Protection and Ventilation

37.3.a General

Possible evolution of hazardous fumes, gases, or dust according to the metals involved.

37.3.b Maximum Allowable Concentration

Local exhaust or general ventilating systems shall be provided and arranged to keep the amount of toxic fumes, gases, or dusts below the maximum allowable concentration as specified in 1910.1000 of this part.

37.3.c Precautionary Labels

A number of potentially hazardous materials are employed in fluxes, coatings, coverings, and filler metals used in welding and cutting or are released to the atmosphere during welding and cutting. These include but are not limited to the materials itemized in this section. The suppliers of welding materials shall determine the hazard, if any, associated with the use of their materials in welding, cutting, etc.

All filler metals and fusible granular materials shall carry the following notice, as a minimum, on tags, boxes, or other containers:

CAUTION

WELDING MAY PRODUCE FUMES AND GASES HAZARDOUS TO HEALTH.

AVOID BREATHING THESE FUMES AND GASES.

USE ADEQUATE VENTILATION.

ANSI Z49.1-1967

Brazing (welding) filler metals containing cadmium in significant amounts shall carry the following notice on tags, boxes, or other containers:

WARNING

CONTAINS CADMIUM - POISONOUS FUMES MAY BE FORMED ON HEATING

DO NOT BREATHE FUMES.

USE ONLY WITH ADEQUATE VENTILATION SUCH AS FUME COLLECTORS, EXHAUST VENTILATORS, OR AIR-SUPPLIED RESPIRATORS.

ANSI Z49.1-1967

37.3.d Airline Respirators

In circumstances for which it is impossible to provide such ventilation, airline respirators or hose masks approved for this purpose by the National Institute for Occupational Safety and Health (NIOSH) under 42 CFR part 84 must be used.

37.3.e Self-contained Units

In areas immediately hazardous to life, a full-facepiece, pressure-demand, self-contained breathing apparatus or a combination full-facepiece, pressure-demand supplied-air respirator with an auxiliary, self-contained air supply approved by NIOSH under 42 CFR part 84 must be used.

37.3.f Local Ventilation

In confined spaces or indoors, welding or cutting operations involving metals containing lead, other than as an impurity, or metals coated with lead-bearing materials, including paint, must be done using local exhaust ventilation or airline respirators. Such operations, when done outdoors, must be done using respirators approved for this purpose by NIOSH under 42 CFR part 84. In all cases, workers in the immediate vicinity of the cutting operation must be protected by local exhaust ventilation or airline respirators.

37.3.g Beryllium

Welding or cutting indoors, outdoors, or in confined spaces involving beryllium-containing base or filler metals shall be done using local exhaust ventilation and airline respirators unless atmospheric tests under the most adverse conditions have established that the workers' exposure is within the acceptable concentrations defined by 1910.1000 of this part. In all cases, workers in the immediate vicinity of the welding or cutting operations shall be protected as necessary by local exhaust ventilation or airline respirators.

37.3.h Cadmium

37.3.h.1 General

In confined spaces or indoors, welding or cutting operations involving cadmium-bearing or cadmium-coated base metals must be done using local exhaust ventilation or airline respirators unless atmospheric tests under the most adverse conditions show that employee exposure is within the acceptable concentrations specified by 29 CFR 1910.1000. Such operations, when done outdoors, must be done using respirators, such as fume respirators, approved for this purpose by NIOSH under 42 CFR part 84.

37.3.h.2 Confined space

Welding (brazing) involving cadmium-bearing filler metals shall be done using ventilation if the work is to be done in a confined space.

37.3.i First-aid Equipment

First-aid equipment shall be available at all times, including an OSHA certified First Aid Kit on every jobsite. (Reference section on First Aid). All injuries shall be reported as soon as possible for medical attention. First aid shall be rendered until medical attention can be provided.

37.4 Oxygen-Fuel Welding Cutting

37.4.a Personnel

Workmen in charge of the oxygen or fuel-gas supply equipment, including generators, and oxygen or fuel-gas distribution piping systems shall be instructed and judged competent by Alin Machining Company dba Power Plant Services for this important work before being left in charge.

Rules and instructions covering the operation and maintenance of oxygen or fuel-gas supply equipment including generators, and oxygen or fuel-gas distribution piping systems shall be knowledgeable and competent with their responsibilities prior to the start of any shift.

37.4.b Storage of Cylinders

Cylinders shall be kept away from radiators and other sources of heat. Cylinders shall be stored in a well-protected, well-ventilated, dry location, such as inside of buildings and at least 20 (6.1 m) feet from highly combustible materials such as oil or excelsior.

Cylinders should be stored in definitely assigned places away from elevators, stairs, or gangways. Assigned storage spaces shall be located where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized persons. Cylinders shall not be kept in unventilated enclosures such as lockers and cupboards.

37.5 Arc Welding and Cutting

37.5.a Instruction

Workmen designated to operate arc welding equipment shall have been properly instructed and qualified to operate such equipment as specified in section 37.5.b .

37.5.b Operation and Maintenance

Workmen assigned to operate or maintain arc welding equipment shall be acquainted with the requirements of this section and with OSHA Standard 1910.254 and 1910.252

(a), (b), and (c) if doing gas-shielded arc welding also Recommended Safe Practices for Gas-Shielded Arc Welding, A6.1-1966, American Welding Society.

37.5.c Maintenance

The operator should report any equipment defect or safety hazard to his supervisor and to The Competent Person. The use of the equipment shall be discontinued until its safety has been assured. Repairs shall be made only by Alin Machining Company dba Power Plant Services 's qualified personnel.

Machines which have become wet shall be thoroughly dried and tested before being used.

Cables with damaged insulation or exposed bare conductors shall be replaced. Joining lengths of work and electrode cables shall be done by the use of connecting means specifically intended for the purpose. The connecting means shall have insulation adequate for the service conditions.

37.6 Training For Cutters, Welders and Supervisors

Cutters, Welders and their supervisors must be suitably trained in the safe operations of their equipment and the safe use of the process.

37.7 Restrictions

If the requirements from Fire Hazards and Guarding cannot be followed the welding and cutting shall not be performed.

Chapter 38 - Globally Harmonized System (GHS)

38.1 Introduction

This chapter will explain everything that's needed to know about what is included in the new Hazard Communication Standard (HCS 2012) with the Globally Harmonized System (GHS). Simplify the requirements and give an outline on how and what needs to be included in the training of workers and employees.

The standard that gave workers the right to know, now gives them the right to understand.

The Hazard Communication Standard (HCS), also known as the Right-to-Know Law, was first enacted on November 25, 1983, by the Occupational Safety and Health Administration (OSHA). It was later modified with minor changes and technical amendments to take effect March 11, 1994. The standard is referenced by Title 29, Code of Federal Regulations (CFR) 1910.1200 and amended in the February 9, 1994, Federal Register. Modification of the prior Hazard Communication Standard (HCS) to conform with the United Nations' (UN) Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

As of March 26, 2012, OSHA has adopted new hazardous chemical labeling requirements as a part of its recent revision of the Hazard Communication Standard, 29 CFR 1910.1200 (HCS), bringing it into alignment with the United Nations' Globally Harmonized System of Classification and Labelling of Chemicals (GHS). These changes will help ensure improved quality and consistency in the classification and labeling of all chemicals, and will also enhance worker comprehension. As a result, workers will have better information available on the safe handling and use of hazardous chemicals, thereby helping them to avoid injuries and illnesses related to exposures to hazardous chemicals.

The revised HCS changes the existing Hazard Communication Standard (HCS/HazCom 1994[1]) from a performance-based standard to one that has more structured requirements for the labeling of chemicals. The revised standard requires that information about chemical hazards be conveyed on labels using quick visual notations to alert the user, providing immediate recognition of the hazards. Labels must also provide instructions on how to handle the chemical so that chemical users are informed about how to protect themselves.

The Globally Harmonized System(GHS) is an international approach to hazard communication, providing a new system for classification of chemical hazards, and a standardized approach to labels and safety data sheets.

OSHA has modified the Hazard Communication Standard (HCS 2012) to adopt the Globally Harmonized System (GHS) to improve the safety and health of workers through more effective communications on chemical hazards.

OSHA is requiring that employees are trained on the new labels(e.g., pictograms and signal words) and Safety Data Sheet format.

OSHA states: “Workers have the right to *know* and *understand* the hazardous chemicals they use and how to work with them safely. Workers must be trained to understand the pictograms and the hazards that they represent.”

An effective "GHS Labels and Safety Data Sheets" training program will allow your employees to:

- Understand the new GHS label elements
- Identify the new GHS pictograms
- Read and interpret the new GHS Safety Data Sheets

"Exposure to hazardous chemicals is one of the most serious threats facing American workers today," said U.S. Secretary of Labor Hilda Solis. "Revising OSHA's Hazard Communication standard will improve the quality and consistency of hazard information, making it safer for workers to do their jobs and easier for employers to stay competitive."

The Hazard Communication Standard (HCS) is now aligned with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). This update to the Hazard Communication Standard (HCS) will provide a common and coherent approach to classifying chemicals and communicating hazard information on labels and safety data sheets. Once implemented, the revised standard will improve the quality and consistency of hazard information in the workplace, making it safer for workers by providing easily understandable information on appropriate handling and safe use of hazardous chemicals. This update will also help reduce trade barriers and result in productivity improvements for American businesses that regularly handle, store, and use hazardous chemicals while providing cost savings for American businesses that periodically update safety data sheets and labels for chemicals covered under the hazard communication standard.

OSHA Compliance Group, Inc. also has a complete line of training products that include:

- Hazard Communication Standard / GHS Poster which explains everything as outlined in this chapter but is 24” x 39” to displace for easy employee reference.
- Complete Hazard Communication Training Program
- DVD - Hazard Communication Standard / GHS Training
- Large Pictogram Poster
- We also offer onsite training on the Hazard Communication Standard / GHS performed by a safety professional with a test administered afterward to ensure all of the pertanent information is retained and understood.

If you have any questions or need further help with training and implementation of the GHS & Hazard Communication Standard.

38.2 Hazard Communication Standard

OSHA revised its Hazard Communication Standard (HCS) to align with the United Nations’ Globally Harmonized System of Classification and Labeling of Chemicals (GHS) and published it in the Federal Register in March 2012 (77 FR 17574). Two significant changes contained in the revised standard require the use of new labeling elements and a standardized format for Safety Data Sheets (SDSs), formerly known as, Material Safety Data Sheets (MSDSs). The new label elements and SDS requirements will improve worker understanding of the hazards associated with the chemicals in their workplace. To help companies comply with the revised standard, OSHA is phasing in the specific requirements over several years (December 1, 2013 to June 1, 2016).

In order to ensure chemical safety in the workplace, information about the identities and hazards of the chemicals must be available and understandable to workers. OSHA's Hazard Communication Standard (HCS) requires the development and dissemination of such information:

- Chemical manufacturers and importers are required to evaluate the hazards of the chemicals they produce or import, and prepare labels and safety data sheets to convey the hazard information to their downstream customers;

- All employers with hazardous chemicals in their workplaces must have labels and safety data sheets for their exposed workers, and train them to handle the chemicals appropriately.

38.3 Major Changes to the Hazard Communication Standard

The four major areas of change are in hazard classification, labels, safety data sheets and information and training.

- **Hazard classification**: Provides specific criteria for classification of health and physical hazards, as well as classification of mixtures.
- **Labels**: Chemical manufacturers and importers will be required to provide a label that includes a harmonized signal word, pictogram, and hazard statement for each hazard class and category. Precautionary statements must also be provided.
- **Safety Data Sheets:** Will now have a specified 16-section format.
- **Information and training:** Employers are required to train workers by December 1, 2013 on the new labels elements and safety data sheets format to facilitate recognition and understanding.

The GHS does not include harmonized training provisions, but recognizes that training is essential to an effective hazard communication approach. The revised Hazard Communication Standard (HCS) requires that workers be re- trained within two years of the publication of the final rule to facilitate recognition and understanding of the new labels and safety data sheets.

For a side-by-side comparison of the current HCS and the final revised HCS please see OSHA's hazard communication safety and health topics webpage at:
http://www.osha.gov/dsg/hazcom/index.html

38.4 Dates and phase-in period in the revised Hazard Communication Standard

The table below summarizes the phase-in dates required under the revised Hazard Communication Standard (HCS):

Effective Completion Date	Requirement(s)	Who
December 1, 2013	Train employees on the new label elements and safety data sheet (SDS) format.	Employers
June 1, 2015* December 1, 2015	Compliance with all modified provisions of this final rule, except: The Distributor shall not ship containers labeled by the chemical manufacturer or importer unless it is a GHS label	Chemical manufacturers, importers, distributors and employers
June 1, 2016	Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards.	Employers
Transition Period to the effective completion dates noted above	May comply with either 29 CFR 1910.1200 (the final standard), or the current standard, or both	Chemical manufacturers, importers, distributors, and employers

*This date coincides with the EU implementation date for classification of mixtures

During the phase-in period, employers would be required to be in compliance with either the existing HCS or the revised HCS, or both. OSHA recognizes that hazard communication programs will go through a period of time where labels and SDSs under both standards will be present in the workplace. This will be considered acceptable, and employers are not required to maintain two sets of labels and SDSs for compliance purposes.

38.5 Training on GHS Label Elements

The first compliance date of the revised HCS is December 1, 2013. By that time employers must have trained their workers on the new label elements and the SDS format. This training is needed early in the transition process since workers are already

beginning to see the new labels and SDSs on the chemicals in their workplace. To ensure employees have the information they need to better protect themselves from chemical hazards in the workplace during the transition period, it is critical that employees understand the new label and SDS formats.

The list below contains the minimum required topics for the training that must be completed by December 1, 2013.

38.5.a Training on label elements

Training on label elements must include information on:

• Type of information the employee would expect to see on the new labels, including the

- ✓ **Product identifier:** how the hazardous chemical is identified. This can be (but is not limited to) the chemical name, code number or batch number. The manufacturer, importer or distributor can decide the appropriate product identifier. The same product identifier must be both on the label and in Section 1 of the SDS (Identification).

- ✓ **Signal words:** used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. There are only two signal words, "Danger" and "Warning." Within a specific hazard class, "Danger" is used for the more severe hazards and "Warning" is used for the less severe hazards. There will only be one signal word on the label no matter how many hazards a chemical may have. If one of the hazards warrants a "Danger" signal word and another warrants the signal word "Warning," then only "Danger" should appear on the label.

- ✓ **Pictogram or Symbols:** OSHA's required pictograms must be in the shape of a square set at a point and include a black hazard symbol on a white background with a red frame sufficiently wide enough to be clearly visible. A square red frame set at a point without a hazard symbol is not a pictogram and is not permitted on the label. OSHA has designated eight pictograms under this standard for application to a hazard category. Examples of all the pictograms and download able files can be accessed on the UN website for the GHS at http://www.unece.org/trans/danger/publi/ghs/pictograms.html

See the section below in the chapter titled "9 Pictogram or Symbols and Hazards" for the detailed list of the Pictograms and associated hazards.

- ✓ **Hazard statement(s):** describe the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard. For example: "Causes damage to kidneys through prolonged or repeated exposure when absorbed through the skin." All of the applicable hazard statements must appear on the label. Hazard statements may be combined where appropriate to reduce redundancies and improve readability. The hazard statements are specific to the hazard classification categories, and chemical users should always see the same statement for the same hazards, no matter what the chemical is or who produces it.

- ✓ **Precautionary statement(s):** means a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical or improper storage or handling.

- ✓ **Supplier identification**: Name, address and phone number of the chemical manufacturer, distributor, or importer

- ✓ **Supplemental information:** Non-harmonized information on the container of a hazardous product that is not required or specified under the GHS. Supplemental information may be used to provide further detail that does not contradict or cast doubt on the validity of the standardized hazard information.

• How an employee might use the labels in the workplace. For example,

- ✓ Explain how information on the label can be used to ensure proper storage of hazardous chemicals.

- ✓ Explain how the information on the label might be used to quickly locate information on first aid when needed by employees or emergency personnel.

- **General understanding of how the elements work together on a label. For example,**

- ✓ Explain that where a chemical has multiple hazards, different pictograms are used to identify the various hazards. The employee should expect to see the appropriate pictogram for the corresponding hazard class. ✓ Explain that when there are similar precautionary statements, the one providing the most protective information will be included on the label.

38.6 Safety Data Sheets (SDS) - Training

Training on the format of the SDS must include information on:

• Standardized 16-section format, including the type of information found in the various sections:

- ✓ For example, the employee should be instructed that with the new format, Section 8 (Exposure Controls/Personal Protection) will always contain information about exposure limits, engineering controls and ways to protect yourself, including personal protective equipment.

• How the information on the label is related to the SDS

- ✓ For example, explain that the precautionary statements would be the same on the label and on the SDS.

What is the GHS Safety Data Sheet (SDS)?

The (Material) Safety Data Sheet (SDS) provides comprehensive information for use in workplace chemical management. Before this new implementation and changes were made to the Hazard Communication Standard the now Safety Data Sheet (SDS) was know as Material Safety Data Sheet or “MSDS.” This reference should not be made now as the new term is “SDS” - Safety Data Sheet (SDS).

Employers and workers use the SDS as sources of information about hazards and to obtain advice on safety precautions. The SDS is product related and, usually, is not able to provide information that is specific for any given workplace where the product may be used. However, the SDS information enables the employer to develop an active program of worker protection measures, including training, which is specific to the individual workplace and to consider any measures that may be necessary to protect the environment. Information in a SDS also provides a source of information for other target audiences such as those involved with the transport of dangerous goods, emergency responders, poison centers, those involved with the professional use of pesticides and consumers.

The SDS should contain 16 headings (Figure A). The GHS SDS headings, sequence and content are similar to the ISO, EU and ANSI MSDS/SDS requirements, except that the order of sections 2 and 3 have been reversed. The SDS should provide a clear description of the data used to identify the hazards. Figure A and the GHS Purple Book provide the minimum information that is required in each section of the SDS.

Figure A Minimum Information for an SDS

	Heading	Subheading
1.	**Identification**	(a) Product identifier used on the label; (b) Other means of identification; (c) Recommended use of the chemical and restrictions on use; (d) Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party; (e) Emergency phone number.
2.	**Hazard(s) identification**	(a) Classification of the chemical in accordance with paragraph (d) of §1910.1200; (b) Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with paragraph (f) of §1910.1200. (Hazard symbols may be provided as graphical reproductions in black and white or the name of the symbol, e.g., flame, skull and crossbones); (c) Describe any hazards not otherwise classified that have been identified during the classification process; (d) Where an ingredient with unknown acute toxicity is used in a mixture at a concentration ≥ 1% and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required.

3.	**Composition/ information on ingredients**	Except as provided for in paragraph (i) of §1910.1200 on trade secrets: **For Substances** (a) Chemical name; (b) Common name and synonyms; (c) CAS number and other unique identifiers; (d) Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance. **For Mixtures** In addition to the information required for substances: (a) The chemical name and concentration (exact percentage) or concentration ranges of all ingredients which are classified as health hazards in accordance with paragraph (d) of §1910.1200 and (1) Are present above their cut-off/concentration limits; or (2) Present a health risk below the cut-off/concentration limits. (b) The concentration (exact percentage) shall be specified unless a trade secret claim is made in accordance with paragraph (i) of §1910.1200, when there is batch-to-batch variability in the production of a mixture, or for a group of substantially similar mixtures (*See* A.0.5.1.2) with similar chemical composition. In these cases, concentration ranges may be used. **For All Chemicals Where a Trade Secret is Claimed** Where a trade secret is claimed in accordance with paragraph (i) of §1910.1200, a statement that the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.
4.	**First-aid measures**	(a) Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion; (b) Most important symptoms/effects, acute and delayed. (c) Indication of immediate medical attention and special treatment needed, if necessary.
5.	**Fire-fighting measures**	(a) Suitable (and unsuitable) extinguishing media. (b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products). (c) Special protective equipment and precautions for fire-fighters.
6.	**Accidental release measures**	(a) Personal precautions, protective equipment, and emergency procedures. (b) Methods and materials for containment and cleaning up.
7.	**Handling and storage**	(a) Precautions for safe handling. (b) Conditions for safe storage, including any incompatibilities.
8.	**Exposure controls/personal protection**	(a) OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available. (b) Appropriate engineering controls. (c) Individual protection measures, such as personal protective equipment.

	Heading	**Subheading**

	Heading	Subheading
9.	**Physical and chemical properties**	(a) Appearance (physical state, color, etc.); (b) Odor; (c) Odor threshold; (d) pH; (e) Melting point/freezing point; (f) Initial boiling point and boiling range; (g) Flash point; (h) Evaporation rate; (i) Flammability (solid, gas); (j) Upper/lower flammability or explosive limits; (k) Vapor pressure; (l) Vapor density; (m) Relative density; (n) Solubility(ies); (o) Partition coefficient: n-octanol/water; (p) Auto-ignition temperature; (q) Decomposition temperature; (r) Viscosity.
10.	**Stability and reactivity**	(a) Reactivity; (b) Chemical stability; (c) Possibility of hazardous reactions; (d) Conditions to avoid (e.g., static discharge, shock, or vibration); (e) Incompatible materials; (f) Hazardous decomposition products.
11.	**Toxicological information**	Description of the various toxicological (health) effects and the available data used to identify those effects, including: (a) Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact); (b) Symptoms related to the physical, chemical and toxicological characteristics; (c) Delayed and immediate effects and also chronic effects from short- and long-term exposure; (d) Numerical measures of toxicity (such as acute toxicity estimates). (e) Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.
12.	**Ecological information (Non-mandatory)**	(a) Ecotoxicity (aquatic and terrestrial, where available); (b) Persistence and degradability; (c) Bioaccumulative potential; (d) Mobility in soil; (e) Other adverse effects (such as hazardous to the ozone layer).
13.	**Disposal considerations (Non-mandatory)**	Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.

	Heading	Subheading
14.	**Transport information (Non-mandatory)**	(a) UN number; (b) UN proper shipping name; (c) Transport hazard class(es); (d) Packing group, if applicable; (e) Environmental hazards (e.g., Marine pollutant (Yes/No)); (f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code); (g) Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.
15.	**Regulatory information (Non-mandatory)**	Safety, health and environmental regulations specific for the product in question.
16.	**Other information, including date of preparation or last revision**	The date of preparation of the SDS or the last change to it.

38.7 Hazard Classifications

The GHS Classification system is a complex system of data obtained from tests, literature, and practical experience. The main elements of the hazard classification are Physical Hazards, Health Hazards and Environmental Hazards as listed below:

38.7.a Physical Hazards

- Explosives
- Oxidizing Gases
- Oxidizing Liquids
- Oxidizing Solids
- Gases Under Pressure
- Flammable Gas
- A Flammable Liquid
- A Flammable Solid
- A Flammable Aerosol
- A Pyrophoric Liquid
- A Pyrophoric Solid
- Self-Heating Substances
- Self-Reactive Substance
- Organic Peroxides
- Substances Corrosive to Metal
- Substances which on Contact with Water Emit Flammable Gases

38.7.b Health Hazards

- Acute Toxicity
- Skin Corrosion
- Skin Irritation
- Serious Eye Damage
- Eye Irritation
- Respiratory Sensitizer
- Skin Sensitizer
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive Toxicity
- Aspiration Hazard
- Specific Target Organ Toxicity (STOT)

38.7.c Environmental Hazards

- Acute Aquatic Toxicity
- Chronic Aquatic Toxicity

38.8 Information and Training

December 1, 2013 – All employees who may be “exposed” to hazardous chemicals when working must be trained on the new elements (GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELING OF CHEMICALS) and safety data sheets (SDS).

1. “Exposure” or “exposed” under the rule means that an employee is subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact, or absorption) and includes potential or accidental exposure.

1. Training may be done either by individual chemical, or by categories of hazard.

3. Employees must have access to the substance-specific information on the labels and SDSs.

4. Employers must ensure, however, that employees are made aware of which hazard category a chemical falls within.

5. Employees must understand the risks of exposure to the chemical(s) in their workplace as well as ways to protect themselves.

6. Create a climate where workers feel free to ask questions.

7. Make sure that training is understood by all workers who may be “exposed” to chemicals in the workplace.

8. HCS is to reduce the incidents of chemical source illness and injuries.

38.9 Checklist for GHS Compliance

The following checklist will help to ensure you comply with the REVISED HAZARD COMMUNICATIONS STANDARD (HCS 2012):

___ 1. Obtain copy of the rule.
(Complete rule available at:
http:www.osha.gov/dsg/hazcom/ghs-final-rule.html)
___ 2. Read and understand the requirements.
___ 3. Assigned responsibility for tasks.
___ 4. Prepare inventory of chemicals.
___ 5. Obtain SDSs for each chemical.
___ 6. Ensure SDSs are available to workers.
___ 7. CONDUCT TRAINING OF WORKERS.
___ 8. Establish procedures to maintain current program.
___ 9. Establish procedures to evaluate effectiveness.

38.10 Assessing the Adequacy of your GHS Program

Does a list of the hazardous chemicals exist in each work area or at a central location?

1. Are methods to inform workers of the hazards of non-routine tasks outlined?

2. Are workers informed of the hazards associated with chemicals contained in the unlabeled pipes in work area?

3. On multi-employer worksites, has the employer provided other employees with information about labeling systems and precautionary measures?

4. Is the written program made available to workers or their designated representatives?

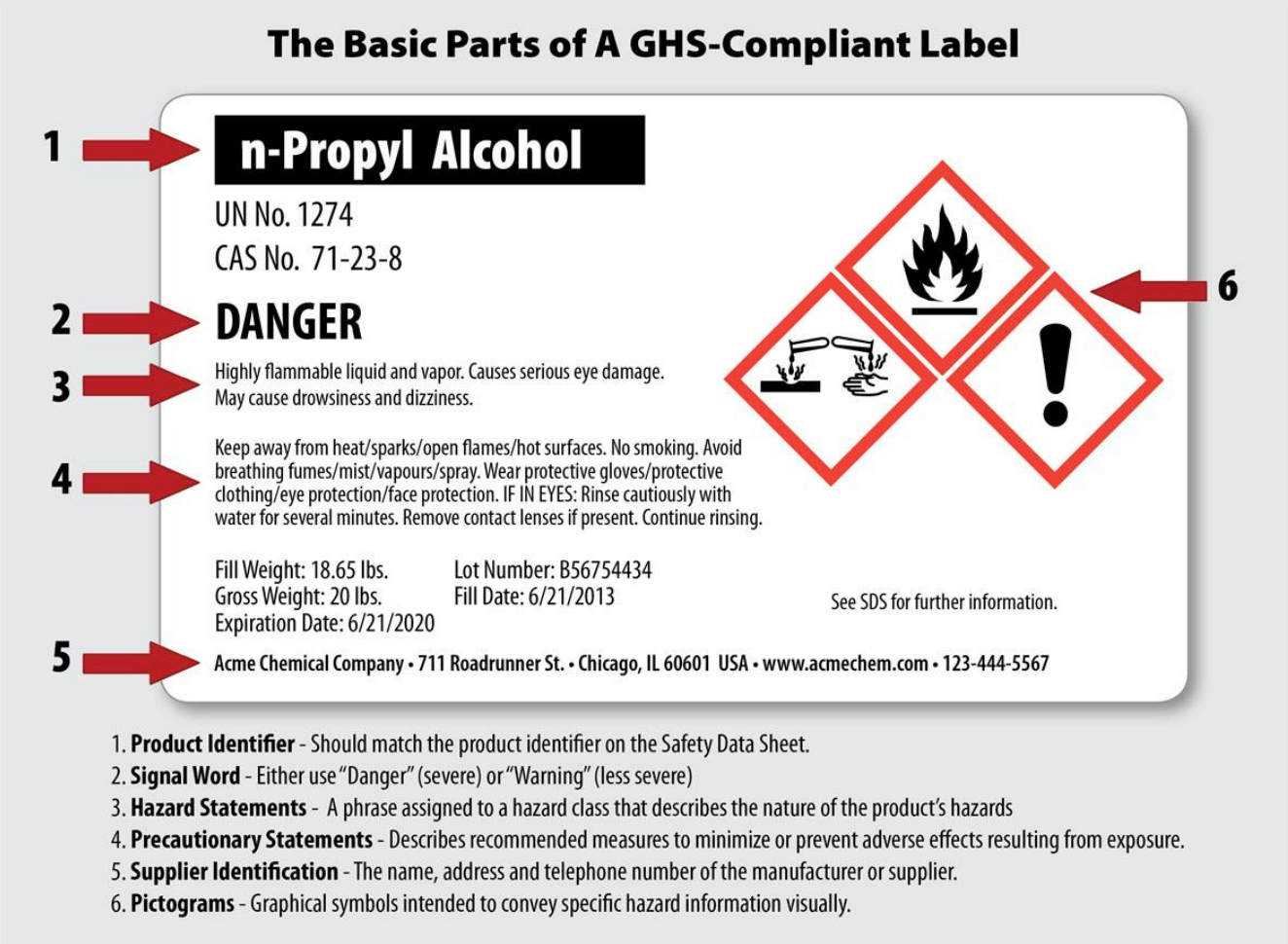
Information and training are a critical part of the hazard communications program. Employees obtain information regarding hazards and protective measures through written labels and material safety data sheets (SDS). This is not always an easy task, but the benefits are worth the effort.

38.11 9 Pictogram or Symbols and Hazards

There are nine pictograms under the GHS to convey the health, physical and environmental hazards. The final Hazard Communication Standard (HCS) requires eight of these pictograms, the exception being the environmental pictogram, as environmental hazards are not within OSHA's jurisdiction. The hazard pictograms and their corresponding hazards are shown below.

Health Hazard  • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	**Flame**  • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	**Exclamation Mark**  • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non Mandatory)
Gas Cylinder  • Gases under Pressure	**Corrosion**  • Skin Corrosion/ burns • Eye Damage • Corrosive to Metals	**Exploding Bomb**  • Explosives • Self-Reactives • Organic Peroxides
Flame over Circle  • Oxidizers	**Environment (Non Mandatory)**  • Aquatic Toxicity	**Skull and Crossbones**  • Acute Toxicity (fatal or toxic)

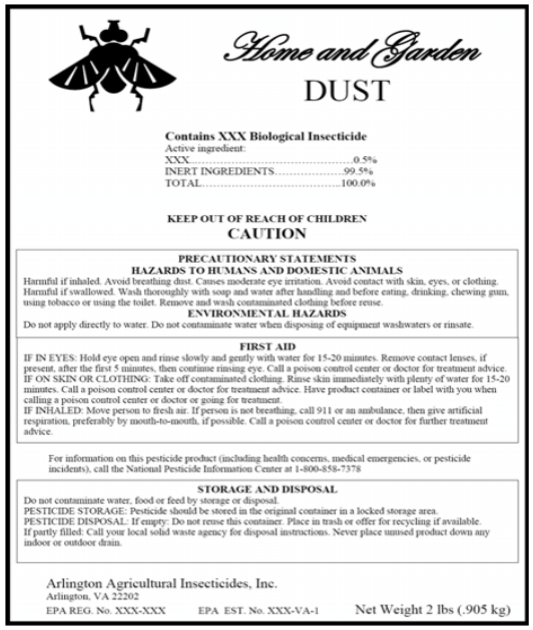
38.12 Sample SDS Labels



Sample Pesticide Label with Current and GHS Requirements

To help stakeholders gain a better understanding of how GHS may affect the appearance of pesticide product labels, EPA's Office of Pesticide Programs (OPP) has drafted the following sample labels, shown with current requirements and with modifications necessary to be consistent with GHS. Select an example below to view a larger image and to learn more about each label.

Current OPP Requirements



Home and Garden
DUST

Contains XXX Biological Insecticide
Active ingredient:
XXX.....0.5%
INERT INGREDIENTS.....99.5%
TOTAL.....100.0%

KEEP OUT OF REACH OF CHILDREN
CAUTION

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
Harmful if inhaled. Avoid breathing dust. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.
ENVIRONMENTAL HAZARDS
Do not apply directly to water. Do not contaminate water when disposing of equipment washwaters or rinsate.

FIRST AID
IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Have product container or label with you when calling a poison control center or doctor or going for treatment.
IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

For information on this pesticide product (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378

STORAGE AND DISPOSAL
Do not contaminate water, food or feed by storage or disposal.
PESTICIDE STORAGE: Pesticide should be stored in the original container in a locked storage area.
PESTICIDE DISPOSAL: If empty: Do not reuse this container. Place in trash or offer for recycling if available.
If partly filled: Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

Arlington Agricultural Insecticides, Inc.
Arlington, VA 22202
EPA REG. No. XXX-XXX EPA EST. No. XXX-VA-1 Net Weight 2 lbs (.905 kg)

Modified with GHS Elements

Home and Garden
DUST

Contains XXX Biological Insecticide
Active ingredient:
XXX.....0.5%
INERT INGREDIENTS.....99.5%
TOTAL.....100.0%

KEEP OUT OF REACH OF CHILDREN
WARNING

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
Harmful if inhaled. Avoid breathing dust. Causes eye irritation. Causes mild skin irritation. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.
ENVIRONMENTAL HAZARDS
Harmful to aquatic life. Do not apply directly to water. Do not contaminate water when disposing of equipment washwaters or rinsate.

FIRST AID
IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Have product container or label with you when calling a poison control center or doctor or going for treatment.
IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

For information on this pesticide product (including health concerns, medical emergencies, or pesticide incidents), call the National Pesticide Information Center at 1-800-858-7378

STORAGE AND DISPOSAL
Do not contaminate water, food or feed by storage or disposal.
PESTICIDE STORAGE: Pesticide should be stored in the original container in a locked storage area.
PESTICIDE DISPOSAL: If empty: Do not reuse this container. Place in trash or offer for recycling if available.
If partly filled: Call your local solid waste agency for disposal instructions. Never place unused product down any indoor or outdoor drain.

Arlington Agricultural Insecticides, Inc.
Arlington, VA 22202
EPA REG. No. XXX-XXX EPA EST. No. XXX-VA-1 Net Weight 2 lbs (.905 kg)

Assigning the appropriate hazard communication elements to pesticide products requires knowledge of the product's toxicity categories. The assumptions for the toxicity categories of the sample product are as follows:

Under Current OPP Requirements:

- Acute Inhalation Toxicity: Category III
- Acute Dermal Toxicity: Category IV
- Acute Oral Toxicity: Category IV
- Skin Corrosion/Irritation: Category III
- Eye Damage/Irritation: Category III
- Acute Hazard to the Aquatic Environment: N/A

Under GHS:

- Acute Inhalation Toxicity: Category 4
- Acute Dermal Toxicity: Unclassified
- Acute Oral Toxicity: Unclassified
- Skin Corrosion/Irritation: Category 3
- Eye Damage/Irritation: Category 2 B
- Acute Hazard to the Aquatic Environment: Category 3

SAMPLE LABEL

PRODUCT IDENTIFIER

CODE _____
Product Name _____

SUPPLIER IDENTIFICATION

Company Name_____
Street Address _____
City _____ State _____
Postal Code _____ Country _____
Emergency Phone Number _____

PRECAUTIONARY STATEMENTS

Keep container tightly closed. Store in cool, well ventilated place that is locked.
Keep away from heat/sparks/open flame. No smoking.
Only use non-sparking tools.
Use explosion-proof electrical equipment.
Take precautionary measure against static discharge.
Ground and bond container and receiving equipment.
Do not breathe vapors.
Wear Protective gloves.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Dispoae of in accordance with local, regional, national, international regulations as specified.

In Case of Fire: use dry chemical (BC) or Carbon dioxide (CO_2) fire extinguisher to extinguish.

First Aid
If exposed call Poison Center.
If on skin (on hair): Take off immediately any contaminated clothing. Rinse skin with water.

HAZARD PICTOGRAMS

SIGNAL WORD

Danger

HAZARD STATEMENT

Highly flammable liquid and vapor.
May cause liver and kidney damage.

SUPPLEMENTAL INFORMATION

Directions for use

_____
_____
_____

Fill weight: _____ Lot Number _____
Gross weight: _____ Fill Date: _____
Expiration Date: _____

38.13 Conclusion

OSHA requires employers to present information in a manner and language that their employees can understand. If employers customarily need to communicate work instructions or other workplace information to employees in a language other than English, they will also need to provide safety and health training to employees in the same manner. Similarly, if the employee's vocabulary is limited, the training must account for that limitation. By the same token, if employees are not literate, telling them to read training materials will not satisfy the employer's training obligation.
OSHA's Hazard Communication website http:// www.osha.gov/dsg/hazcom/index.html has the following QuickCards and OSHA Briefs to assist employers with the required training.

- Label QuickCard (English/Spanish)
- Pictogram QuickCard (English/Spanish)
- Safety Data Sheet QuickCard (English) (Spanish)
- Safety Data Sheet OSHA Brief
- Label/Pictogram OSHA Brief

(More information regarding appropriate training can be found in "Training Requirements in OSHA Standards and Training Guidelines "(OSHA 2254). A copy of this document is available from the Superintendent of Documents, Government Printing Office, P.O. Box 371954, Pittsburg, PA 15250-7954; (202)512-1800.

- Hazard Communication Standard / GHS Poster which explains everything as outlined in this chapter: 24" x 39" to display for easy employee reference.
- Large Pictogram Poster 24" x 24"

DISPLAYING THESE POSTERS SIGNIFY A COMMITMENT TO COMPLIANCE!!

ABOUT OUR POSTERS:

- Laminated on both sides and printed in high quality full color

- Complete Hazard Communication Training Program
- DVD - Hazard Communication Standard / GHS Training
- We also offer onsite training on the Hazard Communication Standard / GHS performed by a safety professional with a test administered afterward to ensure all of the pertanent information is retained and understood.

For a further understanding please review the following Q & A's

38.14 Questions and Answers

Q. What is the Globally Harmonized System?

A. The Globally Harmonized System (GHS) is an international approach to hazard communication, providing agreed criteria for classification of chemical hazards, and a standardized approach to label elements and safety data sheets. The GHS was negotiated in a multi-year process by hazard communication experts from many different countries, international organizations, and stakeholder groups. It is based on major existing systems around the world, including OSHA's Hazard Communication Standard and the chemical classification and labeling systems of other US agencies.
The result of this negotiation process is the United Nations' document entitled "Globally Harmonized System of Classification and Labeling of Chemicals," commonly referred to as The Purple Book. This document provides harmonized classification criteria for health, physical, and environmental hazards of chemicals. It also includes standardized label elements that are assigned to these hazard classes and categories, and provide the appropriate signal words, pictograms, and hazard and precautionary statements to convey the hazards to users. A standardized order of information for safety data sheets is also provided. These recommendations can be used by regulatory authorities such as OSHA to establish mandatory requirements for hazard communication, but do not constitute a model regulation.

Q. Why did OSHA decide to modify the Hazard Communication Standard to adopt the GHS?

A. OSHA has modified the Hazard Communication Standard (HCS) to adopt the GHS to improve safety and health of workers through more effective communications on chemical hazards. Since it was first promulgated in 1983, the HCS has provided employers and employees extensive information about the chemicals in their workplaces. The original standard is performance-oriented, allowing chemical manufacturers and importers to convey information on labels and material safety data sheets in whatever format they choose. While the available information has been helpful in improving employee safety and health, a more standardized approach to classifying the hazards and conveying the information will be more effective, and provide further improvements in American workplaces. The GHS provides such a standardized approach, including detailed criteria for determining what hazardous effects a chemical poses, as well as standardized label elements assigned by hazard class and category. This will enhance both employer and worker comprehension of the hazards, which will help to ensure appropriate handling and safe use of workplace chemicals. In addition, the safety data sheet requirements establish an order of information that is standardized. The harmonized format of the safety data sheets will enable employers, workers, health professionals, and emergency responders to access the information more efficiently and effectively, thus increasing their utility.

Adoption of the GHS in the US and around the world will also help to improve information received from other countries—since the US is both a major importer and exporter of chemicals, American workers often see labels and safety data sheets from other countries. The diverse and sometimes conflicting national and international requirements can create confusion among those who seek to use hazard information effectively. For example, labels and safety data sheets may include symbols and hazard statements that are unfamiliar to readers or not well understood. Containers may be labeled with such a large volume of information that important statements are not easily recognized. Given the differences in hazard classification criteria, labels may also be incorrect when used in other countries. If countries around the world adopt the GHS, these problems will be minimized, and chemicals crossing borders will have consistent information, thus improving communication globally.

Q. Why must training be conducted prior to the compliance effective date?

A. OSHA is requiring that employees are trained on the new label elements (i.e., pictograms, hazard statements, precautionary statements, and signal words) and SDS format by December 1, 2013, while full compliance with the final rule will begin in 2015. OSHA believes that American workplaces will soon

begin to receive labels and SDSs that are consistent with the GHS, since many American and foreign chemical manufacturers have already begun to produce HazCom 2012/GHS-compliant labels and SDSs. It is important to ensure that when employees begin to see the new labels and SDSs in their workplaces, they will be familiar with them, understand how to use them, and access the information effectively. For more information, http://www.osha.gov/dsg/hazcom/effectivedates.html.

Q. What Hazard Communication Standard provisions are unchanged in the revised HCS?

A. The revised Hazard Communication Standard (HCS) is a modification to the existing standard. The parts of the standard that did not relate to the GHS (such as the basic framework, scope, and exemptions) remained largely unchanged. There have been some modifications to terminology in order to align the revised HCS with language used in the GHS. For example, the term "hazard determination" has been changed to "hazard classification" and "material safety data sheet" was changed to "safety data sheet." OSHA stakeholders commented on this approach and found it to be appropriate.

Q. How will chemical hazard evaluation change under the revised Hazard Communication Standard?

A. Under both the current Hazard Communication Standard (HCS) and the revised HCS, an evaluation of chemical hazards must be performed considering the available scientific evidence concerning such hazards. Under the current HCS, the hazard determination provisions have definitions of hazard and the evaluator determines whether or not the data on a chemical meet those definitions. It is a performance-oriented approach that provides parameters for the evaluation, but not specific, detailed criteria. The hazard classification approach in the revised HCS is quite different. The revised HCS has specific criteria for each health and physical hazard, along with detailed instructions for hazard evaluation and determinations as to whether mixtures or substances are covered. It also establishes both hazard classes and hazard categories—for most of the effects; the classes are divided into categories that reflect the relative severity of the effect. The current HCS does not include categories for most of the health hazards covered, so this new approach provides additional information that can be related to the appropriate response to address the hazard. OSHA has included the general provisions for hazard classification in paragraph (d) of the revised rule, and added extensive appendixes (Appendixes A and B) that address the criteria for each health or physical effect.

Q. How will labels change under the revised Hazard Communication Standard?

A. Under the current Hazard Communication Standard (HCS), the label preparer must provide the identity of the chemical, and the appropriate hazard warnings. This may be done in a variety of ways, and the method to convey the information is left to the preparer. Under the revised HCS, once the hazard classification is completed, the standard specifies what information is to be provided for each hazard class and category. Labels will require the following elements:

- **Pictogram:** a symbol plus other graphic elements, such as a border, background pattern, or color that is intended to convey specific information about the hazards of a chemical. Each pictogram consists of a different symbol on a white background within a red square frame set on a point (i.e. a red diamond). There are nine pictograms under the GHS. However, only eight pictograms are required under the HCS.

- **Signal words:** a single word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used are "danger" and "warning." "Danger" is used for the more severe hazards, while "warning" is used for less severe hazards.
- **Hazard Statement:** a statement assigned to a hazard class and category that describes the nature of the hazard(s) of a chemical, including, where appropriate, the degree of hazard.
- **Precautionary Statement:** a phrase that describes recommended measures to be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical, or improper storage or handling of a hazardous chemical.

Q. Can I use a black border on pictograms for domestic shipment?

A. Under the revised Hazard Communication Standard (HCS), pictograms must have red borders. OSHA believes that the use of the red frame will increase recognition and comprehensibility. Therefore, the red frame is required regardless of whether the shipment is domestic or international.

Q. Will OSHA allow blank red borders?

A. The revised Hazard Communication Standard (HCS) requires that all red borders printed on the label have a symbol printed inside it. If OSHA were to allow blank red borders, workers may be confused about what they mean and concerned that some information is missing. OSHA has determined that prohibiting the use of blank red borders on labels is necessary to provide the maximum recognition and impact of warning labels and to ensure that users do not get desensitized to the warnings placed on labels.

Q. When must label information be updated?

A. In the revised Hazard Communication Standard (HCS), OSHA is lifting the stay on enforcement regarding the provision to update labels when new information on hazards becomes available. Chemical manufacturers, importers, distributors, or employers who become newly aware of any significant information regarding the hazards of a chemical shall revise the labels for the chemical within **six months** of becoming aware of the new information, and shall ensure that labels on containers of hazardous chemicals shipped after that time contain the new information. If the chemical is not currently produced or imported, the chemical manufacturer, importer, distributor, or employer shall add the information to the label before the chemical is shipped or introduced into the workplace again.

Q. How will workplace labeling provisions be changing under the revised Hazard Communication Standard?

A. The current standard provides employers with flexibility regarding the type of system to be used in their workplaces and OSHA has retained that flexibility in the revised Hazard Communication Standard (HCS). Employers may choose to label workplace containers either with the same label that would be on shipped containers for the chemical under the revised rule, or with label alternatives that meet the requirements for the standard. Alternative labeling systems such as the National Fire Protection Association (NFPA) 704 Hazard Rating and the Hazardous Material Identification System (HMIS) are permitted for workplace containers. However, the information supplied on these labels must be consistent with the revised HCS, e.g., no conflicting hazard warnings or pictograms.

Q. How is the Safety Data Sheet (SDS) changing under the revised Hazard Communication Standard?

A. The information required on the safety data sheet (SDS) will remain essentially the same as that in the current standard (HazCom 1994). HazCom 1994 indicates what information has to be included on an SDS, but does not specify a format for presentation or order of information. The revised Hazard Communication Standard (HazCom 2012) requires that the information on the SDS be presented using specific headings in a specified sequence.

Paragraph (g) of the final rule provides the headings of information to be included on the SDS and the order in which they are to be provided. In addition, Appendix D provides the information to be included under each heading. The SDS format is the same as the ANSI standard format which is widely used in the U.S. and is already familiar to many employees.

The format of the 16-section SDS should include the following sections:

- Section 1. Identification
- Section 2. Hazard(s) identification
- Section 3. Composition/information on ingredients
- Section 4. First-Aid measures
- Section 5. Fire-fighting measures
- Section 6. Accidental release measures
- Section 7. Handling and storage
- Section 8. Exposure controls/personal protection
- Section 9. Physical and chemical properties
- Section 10. Stability and reactivity
- Section 11. Toxicological information
- Section 12. Ecological information
- Section 13. Disposal considerations
- Section 14. Transport information
- Section 15. Regulatory information
- Section 16. Other information, including date of preparation or last revision

The SDS must also contain Sections 12-15, to be consistent with the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Although the headings for Sections 12-15 are mandatory, OSHA will not enforce the content of these four sections because these sections are within other agencies' jurisdictions.

Q. Will TLVs be required on the Safety Data Sheet (SDS)?

A. OSHA is retaining the requirement to include the American Conference of Government Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) on the safety data sheet (SDS) in the revised Standard. OSHA finds that requiring TLVs on the SDS will provide employers and employees with useful information to help them assess the hazards presented by their workplaces. In addition to TLVs, OSHA permissible exposure limits (PELs), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet are also required.

Q. May the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) lists be used to make carcinogen classifications?

A. In the revised Hazard Communication Standard (HCS), OSHA has provided classifiers with the option of relying on the classification listings of IARC and NTP to make classification decisions regarding carcinogenicity, rather than applying the criteria themselves. OSHA believes that this will make classification easier for classifiers, as well as lead to greater consistency. In addition, OSHA has provided in non-mandatory Appendix F of the revised rule, guidance on hazard classification for carcinogenicity. Part A of Appendix F includes background guidance provided by GHS based on the Preamble of the IARC "Monographs on the Evaluation of Carcinogenic Risks to Humans" (2006). Part B provides IARC classification information. Part C provides background guidance from the National NTP "Report on Carcinogens" (RoC), and Part D is a table that compares GHS carcinogen hazard categories to carcinogen classifications under IARC and NTP, allowing classifiers to be able to use information from IARC and NTP RoC carcinogen classifications to complete their classifications under the GHS, and thus the HCS.

Q. Will the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP) classifications be required on the Safety Data Sheet (SDS)?

A. OSHA has retained the requirement to include IARC and NTP classifications on safety data sheets (SDSs). Therefore, if a chemical is listed as a carcinogen by either IARC or NTP, it must be noted on the SDS. Additionally, if OSHA finds a chemical to be a carcinogen, it must be noted on the SDS as well.

Q. How has OSHA addressed hazards covered under the current Hazard Communication Standard that have not been addressed by the GHS?

A. In the Notice of Proposed Rulemaking (NPRM), OSHA proposed to include hazards currently covered under the Hazard Communication Standard (HCS) that have yet to be addressed by the GHS (OSHA provided several examples: simple asphyxiants, and combustible dust) in a separate category called "Unclassified Hazards". In response to comments from the regulated community, OSHA has renamed the category to "Hazards Not Otherwise Classified (HNOC)" to minimize confusion. In the final HCS, HNOC hazards will not be required to be disclosed on the label but will be required to be disclosed in section 2 of the Safety Data Sheet (SDS). This reflects how GHS recommends these hazards should be disclosed. Chemical manufacturers and importers are expected to assess these hazards when they are conducting their hazard evaluation of physical and health hazards. A new or separate evaluation is not required. Also in the final standard, in response to comments, OSHA has removed pyrophoric gases, simple asphyxiants, and combustible dust from the HNOC hazard category and has addressed these chemicals individually (see question below for more information on each hazard).

Q. How has OSHA addressed pyrophoric gases, simple asphyxiants, and combustible dust?

A. In the revised Hazard Communication Standard (HCS), OSHA has added pyrophoric gases, simple asphyxiants and combustible dust to the definition of "hazardous chemical". OSHA has also added definitions to the revised HCS for pyrophoric gases and simple asphyxiants, and provided guidance on how to define combustible dust for the purposes of complying with the HCS.

- **Pyrophoric gases**:
  OSHA has retained the definition for pyrophoric gases from the current HCS. Pyrophoric gases must be addressed both on container labels and SDSs. OSHA has provided label elements for pyrophoric

gases which include the signal word "danger" and the hazard statement "catches fire spontaneously if exposed to air".

- **Simple asphyxiants:**
  OSHA has revised the definition of simple asphyxiants that was proposed in the Notice of Proposed Rulemaking (NPRM) as a result of comments from the regulated community. In the final HCS, simple asphyxiants must be labeled where appropriate, and be addressed on SDSs. OSHA has provided label elements for simple asphyxiants which include the signal word "warning" and the hazard statement "may displace oxygen and cause rapid suffocation".

- **Combustible dust:**
  OSHA has **not** provided a definition for combustible dust to the final HCS given ongoing activities in the specific rulemaking, as well as in the United Nations Sub-Committee of Experts on the GHS (UN/SCEGHS). However, guidance is being provided through existing documents, including the Combustible Dust National Emphasis Program Directive CPL 03-00-008, which includes an operative definition, as well as provides information about current responsibilities in this area. In addition, there are a number of voluntary industry consensus standards (particularly those of the NFPA) that address combustible dust.

  In the final HCS, combustible dust hazards must be addressed on labels and SDSs. Label elements are provided for combustible dust in the final HCS and include the signal word "warning" and the hazard statement "May form combustible dust concentrations in the air".

  For chemicals in a solid form that do not present a combustible dust hazard, but may form combustible dusts while being processed in normal downstream uses, paragraph (f)(4) of the HCS allows the chemical manufacturer some flexibility in labeling requirements. The manufacturer or importer may transmit the label to the customer at the time of the initial shipment, but the label does not need to be included with subsequent shipments unless it changes. This provides the needed information to the downstream users on the potential hazards in the workplace, while acknowledging that the solid metal or other materials do not present the same hazards that are produced when these materials are processed under normal conditions of use.

Q: How many businesses and workers would be affected by the revised Hazard Communication Standard?

A: OSHA estimates that over 5 million workplaces in the United States would be affected by the revised Hazard Communication Standard (HCS). These are all those workplaces where employees—a total of approximately 43 million of them—could be exposed to hazardous chemicals. Included among these 5 million workplaces are an estimated 90,000 establishments that create hazardous chemicals; these chemical producers employ almost 3 million workers.

Q: What are the estimated overall costs for industry to comply with the revised Hazard Communication Standard?

A: The revised Hazard Communications Standard's (HCS) total cost, an estimated $201 million a year on an annualized basis for the entire United States, is the sum of four major cost elements. (1) OSHA

estimates that the cost of classifying chemical hazards in accordance with the GHS criteria and revising safety data sheets and labels to meet new format and content requirements would be $22.5 million a year on an annualized basis. (2) OSHA estimates that training for employees to become familiar with new warning symbols and the revised safety data sheet format under GHS would cost $95.4 million a year on an annualized basis. (3) OSHA estimated annualized costs of $59 million a year for management to become familiar with the new GHS system and to engage in other management-related activities as may be necessary for industry's adoption of GHS. (4) OSHA estimated annualized costs of $24.1 million for printing packaging and labels for hazardous chemicals in color.

Q: What are the estimated benefits attributable to the revised Hazard Communication Standard?

A: OSHA expects that the modifications to the Hazard Communication Standard (HCS) will result in increased safety and health for the affected employees and reduce the numbers of accidents, fatalities, injuries, and illnesses associated with exposures to hazardous chemicals. The GHS revisions to the HCS standard for labeling and safety data sheets would enable employees exposed to workplace chemicals to more quickly obtain and to more easily understand information about the hazards associated with those chemicals. In addition, the revisions to HCS are expected to improve the use of appropriate exposure controls and work practices that can reduce the safety and health risks associated with exposure to hazardous chemicals.

OSHA estimates that the revised HCS will result in the prevention of 43 fatalities and 585 injuries and illnesses (318 non-lost-workday injuries and illnesses, 203 lost-workday injuries and illnesses, and 64 chronic illnesses) annually. The monetized value of this reduction in occupational risks is an estimated $250 million a year on an annualized basis.

OSHA estimates that the revised HCS will result in savings of $475.2 million from productivity improvements for health and safety managers and logistics personnel, $32.2 million during periodic updating of SDSs and labels, and $285.3 million from simplified hazard communication training.

OSHA anticipates that, in addition to safety and health benefits, the revised HCS will result in four types of productivity benefits: (1) for chemical manufacturers, because they will need to produce fewer SDSs in future years; (2) for employers, in providing training to new employees as required by the existing OSHA HCS through the improved consistency of the labels and SDSs. (3) for firms engaging in, or considering engaging in, international trade.

Q. I understand that the United Nations revises the GHS every two years. How will OSHA manage and communicate changes to the Hazard Communication Standard?

A. It is expected that the GHS will be a living document and is expected to remain up-to-date and relevant; therefore further changes may be adopted on a two year cycle. Presently most of the recent updates have been clarification of text. However, OSHA anticipates that future updates of the Hazard Communication Standard (HCS) may be necessary and can be done through various rulemaking options, including:

- **Technical updates** for minor terminology changes,
- **Direct Final Rules** for text clarification, and

- **Notice and Comment rulemaking** for more substantive or controversial updates such as additional criteria or changes in health or safety hazard classes or categories.

Chapter 39 - Confined Space / Permit Confined Space

39.1 Training

Alin Machining Company dba Power Plant Services 's Confined Space Program begins with the following training procedures for all employees whose duties or responsibilities might expose them to any elements regarding confined space. Alin Machining Company dba Power Plant Services provides this training so that all of their employees whose work is regulated by this chapter will acquire the understanding, knowledge, and skills necessary for the safe performance of the duties assigned for their position.

Completion of the training is mandatory for each employee:

- Before the employee is first assigned duties under this section;
- Before there is a change in assigned duties;
- Whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained;
- Whenever Alin Machining Company dba Power Plant Services has reason to believe that there are deviations from the permit space entry training procedures that are required by this section or there are inadequacies in the employee's knowledge or use of these procedures.

The training does establish and document employee proficiency in their duties and shall introduce new or revised procedures, as necessary, for compliance with this program. Alin Machining Company dba Power Plant Services also certifies that the required training described above has been accomplished. The certification will also include:

- each employee's name,
- the signatures or initials of the trainers, and
- the dates of training.

The certification is available for inspection by employees and their authorized representatives. Refresher training will occur annually or as needed when there are changes to procedures, training, equipment, etc.

39.2 Permit-required Confined Space Program

Alin Machining Company dba Power Plant Services has developed and implement a written permit space program that has been documented and recorded. This written program shall be available for inspection by employees and their authorized representatives.

Alin Machining Company dba Power Plant Services permit space program also include:

- Implement the measures necessary to prevent unauthorized entry;
- Identify and evaluate the hazards of permit spaces before employees enter

them;
- Develop and implement the means, procedures, and practices necessary for safe permit space entry operations, including, but not limited to, the following:
- Specifying acceptable entry conditions;
- Providing each authorized entrant or that employee's authorized representative with the opportunity to observe any monitoring or testing of permit spaces;
- Isolating the permit space;
- Purging, inerting, flushing, or ventilating the permit space as necessary to eliminate or control atmospheric hazards;
- Providing pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards; and
- Verifying that conditions in the permit space are acceptable for entry throughout the duration of an authorized entry.

39.2.a Equipment

Alin Machining Company dba Power Plant Services provides at no cost to the employees the following equipment listed below, and will ensure the proper maintenance of that equipment, and ensuring that their employees use the equipment properly by:

- Testing and monitoring equipment needed to comply with section **Error! Reference source not found.**
- Ventilating equipment needed to obtain acceptable entry conditions;
- Communications equipment necessary for compliance with this section;
- Personal protective equipment insofar as feasible engineering and work practice controls do not adequately protect employees;
- Lighting equipment needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency;
- Barriers and shields as required by section **Error! Reference source not found.**;
- Equipment, such as ladders, needed for safe ingress and egress by authorized entrants;
- Rescue and emergency equipment needed to comply with section **Error! Reference source not found.**except to the extent that the equipment is provided by rescue services; and
- Any other equipment necessary for safe entry into and rescue from permit spaces.

39.2.b Pre-Entry Testing

To evaluate permit space conditions **before** any entry operations are commenced, using the following controls:

- Test conditions in the permit space to determine if acceptable entry conditions exist before entry is authorized to begin, except that, if isolation of the space is infeasible because the space is large or is part of a continuous system (such as a

sewer), pre-entry testing shall be performed to the extent feasible before entry is authorized and, if entry is authorized, entry conditions shall be continuously monitored in the areas where authorized entrants are working;

- Test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations; and

- When testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors.

- Provide each authorized entrant or that employee's authorized representative an opportunity to observe the pre-entry and any subsequent testing or monitoring of permit spaces;

- A reevaluation of the permit space in the presence of any authorized entrant or that employee's authorized representative who requests that Alin Machining Company dba Power Plant Services conduct such reevaluation because the entrant or representative has reason to believe that the evaluation of that space may not have been adequate;

- Immediately provide each authorized entrant or that employee's authorized representative with the results of any testing conducted in accord with section **Error! Reference source not found.**.

Note Reference: Atmospheric testing conducted in accordance with Appendix B to section 1910.146 would be considered as satisfying the requirements of this section. For permit space operations in sewers, atmospheric testing conducted in accordance with Appendix B, as supplemented by Appendix E to section 1910.146, would be considered as satisfying the requirements of this section.

39.2.c Single Attendant

Alin Machining Company dba Power Plant Services procedures requires at least one attendant outside the permit space into which entry is authorized for the duration of entry operations;

Note Reference: Attendants may be assigned to monitor more than one permit space provided the duties described in paragraph DUTIES OF ATTENDANTS of section **Error! Reference source not found.**can be effectively performed for each permit space that is monitored. Likewise, attendants may be stationed at any location outside the permit space to be monitored as long as the duties described in this section can be effectively performed for each permit space that is monitored.

39.2.d Multiple Monitoring

If multiple spaces are to be monitored by a single attendant, the training program will include the means and procedures to enable the attendant to respond to an emergency affecting **one or more** of the permit spaces being monitored, maintaining a satisfactory level of job performance.

A single attendant may only monitor multiple permit spaces with the aid of electronic surveillance and other devices. The use of such devices would allow an employer to increase the number of permit spaces a single attendant could effectively and simultaneously monitor. Additionally, the attendant would normally be stationed near the entry point of the permit space, but the use of an electronic monitoring device makes it possible for an attendant to effectively perform his or her assigned duties from a remote location. Television monitors, public address systems, and barricades can be used to assist the attendant in monitoring activities outside the space and in warning unauthorized personnel away from the space. If the attendant is monitoring activities in multiple spaces, the specific procedures used to respond to an emergency situation affecting one or more spaces, must be documented in the written permit program.

39.3 Designate Persons

When Alin Machining Company dba Power Plant Services work conditions require they will compiled a list of the following designated persons:

- *authorized entrants*
- *attendants*
- *entry supervisors*
- *persons who test or monitor the atmosphere in a permit space*

and will certified that each employee has completed the required training in accordance with section **Error! Reference source not found.**Alin Machining Company dba Power Plant Services will also documented and keep on record the duties of each position listed above.

39.3.a Duties of Alin Machining Company dba Power Plant Services *'s Authorized Entrants*

Alin Machining Company dba Power Plant Services requires that all authorized entrants:

A. Know the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

B. Properly use and have been trained on the provided equipment;

C. Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space as required;

D. Alert the attendant whenever:

1. The entrant recognizes any warning sign or symptom of exposure to a dangerous situation; or

2. The entrant detects a prohibited condition; and
3. exit from the permit space as quickly as possible whenever:

    - An order to evacuate is given by the attendant or the entry supervisor;
    - The entrant recognizes any warning sign or symptom of exposure to a dangerous situation;
    - The entrant detects a prohibited condition; or
    - An evacuation alarm is activated.

39.3.b Duties of Alin Machining Company dba Power Plant Services *'s Attendants*

Each attendant has been training to perform their duties, including:

A. Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;

B. Is aware of possible behavioral effects of hazard exposure in authorized entrants;

C. Continuously maintains an accurate count of authorized entrants in the permit space and ensures that the means used to identify authorized entrants detailed in this section accurately identifies who is in the permit space;

D. Remains outside the permit space during entry operations until relieved by another attendant;

E. Communicates with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space under section **Error! Reference source not found.**;

F. Monitors activities inside and outside the space to determine if it is safe for entrants to remain in the space and orders the authorized entrants to evacuate the permit space immediately under any of the following conditions;

G. If the attendant detects a prohibited condition;

H. If the attendant detects the behavioral effects of hazard exposure in an authorized entrant;

I. If the attendant detects a situation outside the space that could endanger the authorized entrants; or

J. If the attendant cannot effectively and safely perform all the duties required by this program;

K. Summon rescue and other emergency services as soon as the attendant

determines that authorized entrants may need assistance to escape from permit space hazards;

L. Takes the following actions when unauthorized persons approach or enter a permit space while entry is underway:

    a. Warn the unauthorized persons that they must stay away from the permit space;

    b. Advise the unauthorized persons that they must exit immediately if they have entered the permit space; and

    c. Inform the authorized entrants and the entry supervisor if unauthorized persons have entered the permit space;

    d. Performs non-entry rescues as specified by Alin Machining Company dba Power Plant Services 's rescue procedure; and

    e. Performs no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrants.

39.3.c Duties of Alin Machining Company dba Power Plant Services *'s Entry Supervisors*

Each entry supervisor is required to:

- Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure;
- Verifies, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin;
- Terminates the entry and cancels the permit as required by section **Error! Reference source not found.**;
- Verifies that rescue services are available and that the means for summoning them are operable;
- Removes unauthorized individuals who enter or who attempt to enter the permit space during entry operations; and
- Determines, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by the hazards and operations performed within the space that entry operations remain consistent with terms of the entry

permit and that acceptable entry conditions are maintained.

39.4 Rescue and Emergency Services

39.4.a Overview

Alin Machining Company dba Power Plant Services has develop and implement procedures for summoning rescue and emergency services, for rescuing entrants from permit spaces, for providing necessary emergency services to rescued employees, and for preventing unauthorized personnel from attempting a rescue.

Alin Machining Company dba Power Plant Services has certified that the rescue and emergency services have been trained, certified and will:

1. Evaluate a prospective rescuer's ability to respond to a rescue summons in a timely manner, considering the hazard(s) identified;

Note: What will be considered timely will vary according to the specific hazards involved in each entry. For example, §1910.134, Respiratory Protection, requires that Alin Machining Company dba Power Plant Services s provide a standby person or persons capable of immediate action to rescue employee(s) wearing respiratory protection while in work areas defined as IDLH atmospheres.

2. Evaluate a prospective rescue service's ability, in terms of proficiency with rescue-related tasks and equipment, to function appropriately while rescuing entrants from the particular permit space or types of permit spaces identified;

3. Select a rescue team or service from those evaluated that:

    - Has the capability to reach the victim(s) within a time frame that is appropriate for the permit space hazard(s) identified;

    - Is equipped for and proficient in performing the needed rescue services;

    - Inform each rescue team or service of the hazards they may confront when called on to perform rescue at the site; and

    - Provide the rescue team or service selected with access to all permit spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.

4. Alin Machining Company dba Power Plant Services ’s employees who have been designated to provide permit space rescue and emergency services shall take the following measures:

    A. Provide affected employees with the personal protective equipment (PPE)

needed to conduct permit space rescues safely and train affected employees so they are proficient in the use of that PPE, at no cost to those employees;

B. Train affected employees to perform assigned rescue duties ensuring that such employees successfully complete the training required to establish proficiency as an authorized entrant;

C. Train affected employees in basic first-aid and cardiopulmonary resuscitation (CPR). Alin Machining Company dba Power Plant Services shall ensure that at least one member of the rescue team or service holding a current certification in first aid and CPR is available; and

D. Ensure that affected employees practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual permit spaces or from representative permit spaces. Representative permit spaces shall, with respect to opening size, configuration, and accessibility, simulate the types of permit spaces from which rescue is to be performed.

To facilitate non-entry rescue, retrieval systems or methods shall be used whenever an authorized entrant enters a permit space, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant. Retrieval systems shall meet the following requirements.

Each authorized entrant shall use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near shoulder level, above the entrant's head, or at another point which Alin Machining Company dba Power Plant Services can establish presents a profile small enough for the successful removal of the entrant. Wristlets may be used in lieu of the chest or full body harness if Alin Machining Company dba Power Plant Services can demonstrate that the use of a chest or full body harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative.

The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary. A mechanical device shall be available to retrieve personnel from vertical type permit spaces more than 5 feet (1.52 m) deep

If an injured entrant is exposed to a substance for which a Material Safety Data Sheet (MSDS) or other similar written information is required to be kept at the worksite, that MSDS or written information shall be made available to the medical facility treating the exposed entrant.

39.5 Multiple Employer Procedures

Alin Machining Company dba Power Plant Services 's policy for the multiple employer worksite is to take complete control of the permit space and procedures. Exceptions: If they receive written documentation from a certified company or organization requesting the release of the permit space control and procedures to coordinate entry operations when employees of more than one employer are working simultaneously as authorized entrants in a permit space, so that employees of one employer do not endanger the employees of any other employer.

39.6 Entry Permits

A permit signed by the entry supervisor will be posted at all entrances and otherwise be made available to entrants before they enter the permit space. The permit must verify that pre-entry preparations outlined in this section have been completed. The duration of entry permits must not exceed the time required to complete an assignment.

Entry permits must include:

- The permit space to be entered;
- The purpose of the entry;
- The date and the authorized duration of the entry permit;
- The authorized entrants within the permit space, by name or by such other means (for example, through the use of rosters or tracking systems) as will enable the attendant to determine quickly and accurately, for the duration of the permit, which authorized entrants are inside the permit space;

  NOTE: This requirement may be met by inserting a reference on the entry permit as to the means used, such as a roster or tracking system, to keep track of the authorized entrants within the permit space.
- The personnel, by name, currently serving as attendants;
- The individual, by name, currently serving as entry supervisor, with a space for the signature or initials of the entry supervisor who originally authorized entry;
- The hazards of the permit space to be entered;
- The measures used to isolate the permit space and to eliminate or control permit space hazards before entry;

  NOTE: Those measures can include the lockout or tagging of equipment and procedures for purging, inerting, ventilating, and flushing permit spaces.
- The acceptable entry conditions;
- The results of initial and periodic tests performed in this section, accompanied by the names or initials of the testers and by an indication of when the tests were performed;

- The rescue and emergency services that can be summoned and the means (such as the equipment to use and the numbers to call) for summoning those services;
- The communication procedures used by authorized entrants and attendants to maintain contact during the entry;
- Equipment, such as personal protective equipment, testing equipment, communications equipment, alarm systems, and rescue equipment, to be provided for compliance with this section;
- Any other information whose inclusion is necessary, given the circumstances of the particular confined space, in order to ensure employee safety; and
- Any additional permits, such as for hot work, that have been issued for authorize work in the permit space.

39.7 Cancelled Entry Permits

The entry supervisor must cancel entry permits when an assignment is completed or when new conditions exist. New conditions will be noted on the canceled permit and used in revising the permit space program. The standard requires that Alin Machining Company dba Power Plant Services will keep all canceled entry permits for at least one year.

The following procedures (such as closing off a permit space and canceling the permit) necessary for concluding the entry after entry operations have been completed if required will be listed below:

_____ _____

_____ _____

39.8 Unauthorized Entry

A review of entry operations will be implemented at any time when Alin Machining Company dba Power Plant Services has reason to believe that the measures taken under the permit space program may not protect employees and will revise the program to correct deficiencies found to exist before subsequent entries are authorized.

NOTE: Examples of circumstances requiring the review of the permit space program are: any unauthorized entry of a permit space, the detection of a permit space hazard not covered by the permit, the detection of a condition prohibited by the permit, the occurrence of an injury or near-miss during entry, a change in the use or configuration of a permit space, and employee

complaints about the effectiveness of the program.

39.9 Review of Procedures

Alin Machining Company dba Power Plant Services will perform a single annual review covering all entries performed during a 12-month period. Exception: If no entry is performed during this 12-month period, no review is necessary.

Review the permit space program, using the canceled permits retained within 1 year after each entry and revise the program as necessary, to ensure that employees participating in entry operations are protected from permit space hazards.

39.10 Air Testing and Monitoring

Alin Machining Company dba Power Plant Services will evaluate every workplace to determine if any spaces are permit-required confined spaces.

If a workplace contains permit spaces, Alin Machining Company dba Power Plant Services will inform exposed employees and other employees performing work in the area, by posting danger signs or by any other equally effective means, of the existence, location of and the danger posed by the permit spaces.

Note: A sign reading ‘DANGER -- PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER’ or using other similar language would satisfy the requirement for a sign.

If Alin Machining Company dba Power Plant Services decides that its employees will enter permit spaces, Alin Machining Company dba Power Plant Services ’s confined space program must be implemented. The written program shall be available for inspection by employees and their authorized representatives and will include:

1. Testing of internal atmospheres with a calibrated direct-reading instrument. Test or monitor the permit space as necessary to determine if acceptable entry conditions are being maintained during the course of entry operations; and

2. When testing for atmospheric hazards, test first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors.

3. Provide each authorized entrant or that employee's authorized representative an opportunity to observe the pre-entry and any subsequent testing or monitoring of permit spaces;

   Before and employee enters the space, the internal atmosphere shall be tested, with a calibrated direct-reading instrument, for oxygen content, for flammable gases and vapors, and for potential toxic air contaminants, in that order. Any employee who enters the

space, or that employee's authorized representative, shall be provided an opportunity to observe the pre-entry testing required by this paragraph. Instruments must be calibrated based on manufacturer requirements.

39.11 Re-evaluation

Reevaluate the permit space in the presence of any authorized entrant or that employee's authorized representative who requests that Alin Machining Company dba Power Plant Services conduct such reevaluation because the entrant or representative has reason to believe that the evaluation of that space may not have been adequate.

A permit-required confined space may be reclassified as a non-permit confined space under the following procedures:

1. If the space poses no actual or potential atmospheric hazards and the hazards are eliminated without entry, and as long as the non-atmospheric hazards remain eliminated.

2. Entry into the space to eliminate the hazards is under an authorized permit and testing and inspection during the entry demonstrate the hazards were eliminated without requiring continuous forced air ventilation.

3. A certification is documented showing the hazards were eliminated.

4. If hazards arise within a permit space that has been declassified to a non- permit space, each employee must exit the space and the space is reevaluated to determine if it must be reclassified as a permit space.

39.12 Designating Rescue and Emergency Services

Alin Machining Company dba Power Plant Services will designate rescue and emergency services using the following criteria:

A. Evaluate a prospective rescuer's ability to respond to a rescue summons in a timely manner, considering the hazard(s) identified;

Note Reference: What will be considered timely will vary according to the specific hazards involved in each entry. For example, 1910.134, Respiratory Protection, requires that Alin Machining Company dba Power Plant Services **s provide a standby person or persons capable of immediate action to rescue employee(s) wearing respiratory protection while in work areas defined as IDLH atmospheres.**

B. Evaluate a prospective rescue service's ability, in terms of proficiency with rescue-related tasks and equipment, to function appropriately while rescuing

entrants from the particular permit space or types of permit spaces identified;

C. Select a rescue team or service from those evaluated that:

- Has the capability to reach the victim(s) within a time frame that is appropriate for the permit space hazard(s) identified;
- Is equipped for and proficient in performing the needed rescue services;
- Inform each rescue team or service of the hazards they may confront when called on to perform rescue at the site; and
- Provide the rescue team or service selected with access to all permit spaces from which rescue may be necessary so that the rescue service can develop appropriate rescue plans and practice rescue operations.

39.12.a Rescue Service

Alin Machining Company dba Power Plant Services will require the rescue service to be present on site in the event of hazardous conditions that could immediately be a danger to both the life and health of workers performing work in a confined space. If the rescue service is not present when workers are to perform work in a confined space, then the work shall be postponed till the rescue service can be present.

39.13 Operations with Contractors

All contractors performing work in confined space entry permit areas shall be informed of any fire, explosion, health or other safety hazards of that confined space. This information shall be based on current or past history of the confined space and the nature of the contractor's work procedure in making such disclosure.

Alin Machining Company dba Power Plant Services shall inform contractors of the safety rules and emergency plans which may be applicable to the contractor's employees. Contractors and their employees must not be allowed to enter a confined space until the provisions of this program have been satisfied. When both Alin Machining Company dba Power Plant Services and contractor personnel are working in or near permit spaces, their entry operations must be coordinated to avoid endangering any personnel.

At the conclusion of the entry operations, the contractor must be debriefed regarding the permit space program that was followed and concerning any hazards confronted or created in permit spaces during entry operations.

It is the responsibility of each contractor who is retained to perform permit space entry operations to obtain any available information regarding permit space hazards and entry operations. They must also coordinate entry operations with Alin Machining Company

dba Power Plant Services when they will be working in or near permit spaces. Alin Machining Company dba Power Plant Services must be informed of the permit space program that the contractor will follow and of any hazards confronted or created in permit spaces, either through a debriefing or during the entry operations.

Chapter 40 - Cal/OSHA Electric Welding

40.1 Electrical Safety Orders And ANSI Standards

Subsection (a) All electrical equipment used to perform electric welding, cutting, heating or other operations be installed and maintained in accordance with California Electrical Safety Orders and ANSI standards

All electrical equipment used to perform operations and processes noted in subsection (a) shall be installed and maintained in accordance with the California Electrical Safety Orders and chapters 11, 12 and 13 of the American National Standards Institute, ANSI/ASC Z49.1-94, Safety in Welding, Cutting and Allied Processes.

40.2 Worker Safety

Where the work permits, the welder shall be enclosed in an individual booth painted with a finish of low reflectivity, such as zinc oxide and lamp black, or shall be enclosed with noncombustible screens having a similar low reflectivity finish. Booths and screens shall permit circulation of air at floor level. Workers or other persons adjacent to the welding areas shall be protected from the rays by noncombustible or flameproof screens or shields or shall be required to wear appropriate goggles.

40.3 Cables Used

Only cable free from repair or splice for 10 feet (3 m) from the electrode holder shall be used unless insulated connectors or splices with insulating quality equal to that of the cable are provided.

When a cable other than the lead wears and exposes bare conductors, the portion exposed shall not be used until it is protected by insulation equivalent in performance capacity to the original.

40.4 Welding Machines And Confined Space

Welding machines shall be left on the outside of a confined space and heavy portable equipment shall be blocked to prevent accidental movement.

40.5 Ground Connections

Ground connections shall be mechanically and electrically adequate to carry the current.

40.6 Equipment Defects

Arc welding or cutting equipment having a functional defect shall not be used.

40.7 Power Supply Switch

Alin Machining Company dba Power Plant Services shall ensure that when arc welders or cutters leave or stop work or when machines are moved, the power supply switch shall be kept in the off position.

40.8 Protection In Damp Or Humid Conditions

When arc welding is performed in wet or high humidity conditions, employees shall use additional protection, such as rubber pads or boots, against electric shock.

Chapter 41 - Cal/OSHA Fall Protection

41.1 Introduction

Alin Machining Company dba Power Plant Services will determine if the walking/working surfaces on which its employees are to work have the strength and structural integrity to support employees safely. Employees will be allowed to work on those surfaces only when the surfaces have the requisite strength and structural integrity.

41.2 Unprotected Sides and Edges

Each employee on a walking/working surface (horizontal and vertical surface) with an unprotected side or edge which is 6 feet (1.8m) or more above a lower level will be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems.

41.3 Leading Edges

Each employee who is constructing a leading edge 6 feet (1.8m) or more above the lower levels will be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems. Exception: When Alin Machining Company dba Power Plant Services can demonstrate that it is infeasible or creates a greater hazard to use these systems, Alin Machining Company dba Power Plant Services will develop and implement a fall protection plan.

Each employee on a walking/working surface 6 feet (1.8m) or more above a lower level where leading edges are under construction, but who is not engaged in the leading edge work, will be protected from falling by a guardrail system, safety net system, or personal fall arrest system. If a guardrail system is chosen to provide the fall protection, and a controlled access zone has already been established for leading edge work, the control line may be used in lieu of a guardrail along the edge that parallels the leading edge.

41.4 Hoist Areas

Each employee in a hoist area will be protected from failing 6 feet (1.8m) or more to lower levels by guardrail systems or personal fall arrest systems. If guardrail systems, (or chain gate, or guardrail) or portions thereof, are removed to facilitate the hoisting operation (e.g., during landing of materials), and an employee must lean through the access opening or out over the edge of the access opening (to receive or guide

equipment and materials, for example), that employee will be protected from fall hazards by a personal fall arrest system.

41.5 Holes

Each employee on walking/working surfaces will be protected from failing through holes (including skylights) more than 6 feet (1.8m) above lower levels, by personal fall arrest systems, covers, or guardrail systems erected around such holes.
Each employee on a walking/working surface will be protected from tripping in or stepping into or through holes (including skylights) by covers.
Each employee on a walking/working surface will be protected from objects falling through holes (including skylights) by covers.

41.6 Formwork and Reinforcing Steel

Each employee on the face of formwork or reinforcing steel will be protected from falling 6 feet (1.8m) or more to lower levels by personal fall arrest systems, safety net systems, or positioning device systems.

41.7 Ramps, Runways, and Other Walkways

Each employee on ramps, runways, and other walkways will be protected from falling 6 feet (1.8m) or more to lower levels by guardrail systems.

41.8 Excavations

Each employee at the edge of an excavation 6 feet (1.8m) or more in depth will be protected from falling by guardrail systems, fences, or barricades when the excavations are not readily seen because of plant growth or other visual barrier.

Each employee at the edge of a well, pit, shaft, and similar excavation 6 feet (1.8m) or more in depth will be protected from failing by guardrail systems, fences, barricades, or covers.

41.9 Dangerous Equipment

Each employee less than 6 feet (1.8m) above dangerous equipment will be protected

from failing into or onto the dangerous equipment by guardrail systems or by equipment guards.

Each employee 6 feet (1.8m) or more above dangerous equipment will be protected from fall hazards by guardrail systems, personal fall arrest systems, or safety net systems.

41.10 Overhand Bricklaying and Related Work

Each employee performing overhand bricklaying and related work 6 feet (1.8m) or more above lower levels, will be protected from failing by guardrail system, safety net systems, personal fall arrest systems, or will work in a controlled access zone.

Each employee reaching more than 10 inches (25cm) below the level of the walking/working surface on which they are working will be protected from failing by a guardrail system, safety net system, or personal fall arrest system.

41.11 Roofing Work on Low Slope - Roofs

Each employee engaged in roofing activities on low slope roofs, with unprotected sides and edges 6 feet (1.8m) or more above lower levels will be protected from falling by guardrail systems, safety net systems, personal fall arrest systems, or a combination of warning line system and guardrail system, warning line system and safety net system, or warning line system and personal fall arrest system, or warning line system and safety monitoring system. Or on roofs 50-feet (15.25m) or less in width the use of a safety monitoring system alone (i.e., without the warning line system) is permitted.

Steep Roofs

Each employee on a steep roof with unprotected sides and edges 6 feet (1.8m) or more above lower levels will be protected from falling by guardrail systems with toeboards, safety net systems, or personal fall arrest systems.

Precast Concrete Erection

Each employee engaged in the erection of precast concrete members (including, but not limited to the erection of wall panels, columns, beams, and floor and roof "tees") and related operations such as grouting of precast concrete members, who is 6 feet (1.8m) or more above lower levels will be protected from falling by guardrail systems, safety net systems, or personal fall arrest systems.

Residential Construction

Each employee engaged in residential construction activities 6 feet (1.8m) or more above lower levels will be protected by guardrail systems, safety net system, or personal fall arrest system.

Wall Openings

Each employee working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet (1.8m) or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches (1.0m) above the walking/working surface, will be protected from failing by the use of a guardrail system, safety net system, or a personal fall arrest system.

Walking/Working Surface Not Otherwise Addressed

Each employee on a walking/working surface 6 feet (1.8m) or more above lower levels will be protected from failing by a guardrail system, safety net system, or personal fall arrest system.

Protection From Falling Objects

When an employee is exposed to falling objects, Alin Machining Company dba Power Plant Services will have each employee wear a hard hat and will implement one of the following measures:

- Erect toeboards, screens, or guardrail systems to prevent objects from falling from higher levels

- Erect a canopy structure and keep potential falling objects far enough from the edge of the higher level so that those objects would not go over the edge if they were accidentally displaced

- Barricade the area to which objects could fall, prohibit employees from entering the barricaded area, and keep objects that may fall far enough away from the edge of a higher level so that those objects would not go over the edge if they were accidentally displaced

41.12 Fall Protection Systems Criteria and Practices

Alin Machining Company dba Power Plant Services will provide and install all fall protection systems for an employee before that employee begins the work that necessitates the fall protection.

Guardrail Systems

Guardrail systems and their use will comply with the following provisions:

- Top edge height of top rails, or equivalent guardrail system members, will be 42 inches (1.1m) plus or -minus 3 inches (8cm) above the walking/working level. When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other criteria of this paragraph.

- Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members will be installed between the top edge of the guardrail system and the walking/working surface when there is no wall or parapet wall at least 21 inches (53cm) high.

- Screens and mesh, when used, will extend from the top rail to the walking/working level and along the entire opening between top rail supports.

- Intermediate members (such as balusters), when used between posts, will be not more than 19 inches (48cm) apart.

- Other structural members (such as additional midrails and architectural panels) will be installed such that there are no openings in the guardrail system that are more than 19 inches (.5m) wide.

- Guardrail systems will be capable of withstanding, without failure, a force of at least 200 pounds (890 N) applied within 2 inches (5.1cm) of the top edge, in any outward or downward direction, at any point along the top edge.

- When the 200 pound load is applied in a downward direction, the top edge of the guardrail will not deflect to a height less than 39 inches (1.0m) above the walking/working level.

- Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members will be capable of withstanding, without failure, a force of at least 150 pounds applied in any downward or outward direction at any point along the midrail or other member.

- Guardrail systems will be so surfaced as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

The ends of all top rails and midrails will not overhang the terminal posts, except where such overhand does not constitute a projection hazard.

Steel banding and plastic banding will not be used as top rails or midrails.
Top rails and midrails will be at least one quarter inch (0.6cm) nominal diameter or

thickness to prevent cuts and lacerations. If wire rope is used for top rails, it will be flagged at not more than 6-foot intervals with high visibility material.

When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section will be placed across the access opening between guardrail sections when hoisting operations are not taking place.

When guardrail systems are used at holes, they will be erected on all unprotected sides or edges of the hole.

When guardrail systems are used around holes used for the passage of materials, the hole will have no more than two sides provided with removable guardrail sections to allow the passage of materials. When the hole is not in use, it will be closed over with a cover, or a guardrail system will be provided along all unprotected sides or edges.

When guardrail systems are used around holes which are used as points of access (such as ladderways), they will be provided with a gate, or be so offset that a person cannot walk directly into the hole.

Guardrail systems used on ramps and runways will be erected along each unprotected side or edge.

Manila, plastic or synthetic rope being used for top rails or midrails will be inspected as frequently as necessary to ensure that it continues to meet the strength requirements.

Safety Net Systems

Safety net systems and their use will comply with the following provisions:

Safety nets will be installed as close as practicable under the walking/working surface on which employees are working, but in no case more than 30 feet (9. 1 m) below such level. When nets are used on bridges, the potential fall area from the walking/working surface to the net will be unobstructed.

Safety nets will be used where there is an elevation of 25 feet or more above the ground, water, or continuous floor level below.

Safety nets will extend outward from the outermost projection of the work surface as follows:

Vertical distance from working level to horizontal plane of net	Minimum required horizontal distance of outer edge of net from the edge of the working surface
Up to 5 feet	8 feet
More than 5 feet up to 10 feet	10 feet
More than 10 feet	13 feet

Safety nets will be installed with sufficient clearance under them to prevent contact with the surface or structures below when subjected to an impact force equal to the drop test.

Safety nets and their installations will be capable of absorbing an impact force equal to that produced by the drop test.

Defective nets will not be used. Safety nets will be inspected at least once a week for wear, damage, and other deterioration. Defective components will be removed from service. Safety nets will also be inspected after any occurrence which could affect the integrity of the safety net system.

Materials, scrap pieces, equipment, and tools which have fallen into the safety net will be removed as soon as possible from the net and at least before the next work shift.

The maximum size of each safety net mesh opening will not exceed 36 square inches (230cM2) nor be longer than 6 inches (1 5cm) on any side, and the opening, measured center-to-center of mesh ropes or webbing, will not be longer than 6 inches (15cm). All mesh crossings will be secured to prevent enlargement of the mesh opening.

Each safety net (or section of it) will have a border rope for webbing with a minimum breaking strength of 5,000 pounds (22.2kN).

Connections between safety net panels will be as strong as integral net components and will be spaced not more than 6 inches (15cm) apart.

Personal Fall Arrest Systems

Personal fall arrest systems and their use will comply with the provisions set forth below:

Connectors will be drop forged, pressed or formed steel, or made of equivalent materials.

Connectors will have a corrosion resistant finish, and all surfaces and edges will be smooth to prevent damage to interfacing parts of the system.

Dee rings and snaphooks will have a minimum tensile strength of 5,000 pounds (22.2kN).

Dee rings and snaphooks will be proof tested to a minimum tensile load of 3,600 pounds (16kN) without cracking, breaking, or taking permanent deformation.

Snaphooks will be sized to be compatible with the member to which they are connected

to prevent unintentional disengagement of the snaphook by depression of the snaphook keeper by the connected member, or will be locking type snaphook designed and used to prevent disengagement of the snaphook by the contact of the snaphook keeper by the connected member.

Unless the snaphook is a locking type and designed for the following connections, snaphooks will not be engaged:

- Directly to webbing, rope or wire rope
- To each other
- To a dee ring to which another snaphook or other connector is attached
- To a horizontal lifeline
- To any object which is incompatibly shaped or dimensioned in relation to the snaphook such that unintentional disengagement could occur by the connected object being able to depress the snaphook keeper and release itself

On suspended scaffolds or similar work platforms with horizontal lifelines which may become vertical lifelines, the devices used to connect to a horizontal lifeline will be capable of locking in both directions on the lifeline.

Horizontal lifelines will be designed, installed, and used, under the supervision of a qualified person, as part of a complete personal fall arrest system, which maintains a safety factor of at least two.

Lanyards and vertical lifelines will have a minimum breaking strength of 5,000 pounds (22.2kN).

During the construction of elevator shafts, two employees may be attached to the same lifeline in the hoistway, provided both employees are working atop a false car that is equipped with guardrails; the strength of the lifeline is 10,000 pounds (5,000 pounds per employee attached) (44.4kN); and all other criteria specified in this paragraph for lifelines have been met.

Lifelines will be protected against being cut or abraded.

Self-retracting lifelines and lanyards which automatically limit freefall distance to 2feet (o.61m) or less will be capable of sustaining a minimum tensile load of 3,000 pounds (13.3 kN) applied to the device with the lifeline or lanyard in the fully extended position.

Self-retracting lifelines and lanyards which do not limit free fall distance to 2 feet (0.61m) or less, ripstitch lanyards, and tearing and deforming lanyards will be capable of

sustaining a minimum tensile load of 5,000 pounds (22.2kN) applied to the device with the lifeline or lanyard in the fully extended position.

Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses will be made from synthetic fibers.

Anchorages used for attachment of personal fall arrest equipment will be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds (22.2kN) per employee attached, or will be designed, installed, and used as follows:

As part of a complete personal fall arrest system which maintains a safety factor of at least two; and

Under the supervision of a qualified person.

Personal fall arrest systems, when stopping a fall, will:

Limit maximum arresting force on an employee to 900 pounds (4kN) when used with a body harness

Limit maximum arresting force on an employee to 1,800 pounds (8kN) when used with a body harness.

Be rigged such that an employee can neither free fall more than 6 feet (1.8m), nor contact any lower level

Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07m)

Have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 feet (1.8m), or the free fall distance permitted by the system, whichever is less.

The attachment point of the body harness will be located in the center of the wearer's back near shoulder level, or above the wearer's head.

Body harnesses, and components will be used only for employee protection (as part of a personal fall arrest system or positioning device system) and not to hoist materials.

Personal fall arrest systems and components subjected to impact loading will be immediately removed from service and will not be used again for employee protection until inspected and determined by a competent person to be undamaged and suitable for reuse.

Alin Machining Company dba Power Plant Services will provide for prompt rescue of

employees in the event of a fall or will assure that employees are able to rescue themselves.

Personal fall arrest systems will be inspected prior to each use for wear, damage and other deterioration, and defective components will be removed from service.

Personal fall arrest systems will not be attached to guardrail systems, nor will they be attached to hoists except as specified.

When a personal fall arrest system is used at hoist areas, it will be rigged to allow the movement of the employee only as far as the edge of the walking/working surface.

Positioning Device Systems

Positioning device systems and their use will conform to the following provisions:

Positioning devices will be rigged such that an employee cannot free fall more than 2 feet (.9m).

Positioning devices will be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fail or 3,000 pounds (13.3kN), whichever is greater.

Connectors will be drop forged, pressed or formed steel, or made of equivalent materials.

Connectors will have a corrosion- resistant finish, and all surfaces and edges will be smooth to prevent damage to interfacing parts of this system.

Connecting assemblies will have a minimum tensile strength of 5,000 pounds (22.2kN).

Dee rings and snaphooks will be proof tested to a minimum tensile load of 3,600 pounds (16kN) without cracking, breaking, or taking permanent deformation.

Snaphooks will be sized to be compatible with the member to which they are connected to prevent unintentional disengagement of the snaphook by depression of the snaphook keeper by the connected member, or will be a locking type snaphook designed and used to prevent disengagement of the snaphook by the contact of the snaphook keeper by the connected member.

Unless the snaphook is a locking type and designed for the following connections, snaphooks will not be engaged:

- Directly to webbing, rope or wire rope
- To each other

- To a Dee ring to which another snaphook or other connector is attached

- To a horizontal lifeline

- To any object which is incompatibly shaped or dimensioned in relation to the snaphook such that unintentional disengagement could occur by the connected object being able to depress the snaphook keeper and release itself

Positioning device systems will be inspected prior to each use for wear, damage, other deterioration, and defective components will be removed from service.

Body belts, harnesses, and components will be used only for employee protection (as part of a personal fall arrest system or positioning device system) and not to hoist materials.

Warning Line Systems

Warning line systems and their use will comply with the following provisions:

The warning line will be erected around all sides of the roof work area.

When mechanical equipment is not being used, the warning line will be erected not less than 6 feet (1.8m) from the roof edge.

When the mechanical equipment is being used, the warning line will be erected not less than 6 feet (1.8m) from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than 10 feet (3.1m) from the roof edge which is perpendicular to the direction of mechanical equipment operation.

Points of access, materials handling areas, storage areas, and hoisting areas will be connected to the work area by an access path formed by two warning lines.

When the path to a point of access is not in use, a rope, wire, chain, or other barricade, equivalent in strength and height to the warning line, will be placed across the path at the point where the path intersects the warning line erected around the work area, or the path will be offset such that a person cannot walk directly into the work area.

Warning lines will consist of ropes, wires, or chains, and supporting stanchions erected as follows:

The rope, wire, or chain will be flagged at not more than 6 foot (1.8m) intervals with high visibility material

The rope, wire, or chain will be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches (.9m) from the walking/working surface and its

highest point is no more than 39 inches (1.0m) from the walking/working surface

After being erected, with the rope, wire, or chain attached, stanchions will be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion, 30 inches (.8m) above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge

The rope, wore, or chain will have a minimum tensile strength of 500 pounds (22.2kN), and after being attached to the stanchions, will be capable of supporting, without breaking

The line will be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over

No employee will be allowed in the area between a roof edge and a warning line unless the employee is performing roofing work in that area.
Mechanical equipment on roofs will be used or stored only in areas where employees are protected by a warning line system, guardrail system, or personal fall arrest system.

Controlled Access Zones

Controlled access zones and their use will conform to the following provisions:

When used to control access to areas where leading edge and other operations are taking place the controlled access zone will be defined by a control line or by any other means that restricts access.

When control lines are used, they will be erected not less than 6 feet (1.8m) nor more than 25 feet (7.7m) from the unprotected or leading edge, except when erecting precast concrete members.

When erecting precast concrete members, the control line will be erected not less than 6 feet (1.8m) nor more than 60 feet (18m) or half the length of the member being erected, whichever is less, from the leading edge.

The control line will extend along the entire length of the unprotected or leading edge and will be approximately parallel to the unprotected or leading edge.

The control line will be connected on each side to a guardrail system or wall.

When used to control access to areas where overhand bricklaying and related work are taking place:

The controlled access zone will be defined by a control line erected not less than 10 feet (3.1m) nor more than 15 feet (4.5m) from the working edge.

The control line will extend for a distance sufficient for the controlled access zone to enclose all employees performing overhand bricklaying and related work at the working edge and will be approximately parallel to the working edge.

Additional control lines will be erected at each end to enclose the controlled access zone.

Only employees engaged in overhand bricklaying or related work will be permitted in the controlled access zone.

Control lines will consist of ropes, wires, tapes, or equivalent materials, and supporting stanchions as follows:

Each line will be flagged or otherwise clearly marked at not more than 6 feet (1.8m) intervals with high visibility material.

Each line will be rigged and supported in such a way that its lowest point (including sag) is not less than 39 inches (1m) from the walking/working surface and its highest point is not more than 45 inches (1.3m)[50 inches (1.3m) when overhand bricklaying operations are being performed] from the walking/working surface.

Each line will have a minimum breaking strength of 200 pounds (.88kN).

On floors and roofs where guardrail systems are not in place prior to the beginning of overhand bricklaying operations, controlled access zones will be enlarged, as necessary, to enclose all points of access, material handling areas, and storage areas.

On floors and roofs where guardrail systems are in place, but need to be removed to allow overhand bricklaying work or leading edge work to take place, only that portion of the guardrail necessary to accomplish that day's work will be removed.

Safety Monitoring Systems

Safety monitoring systems and their use will comply with the following provisions:

Alin Machining Company dba Power Plant Services will designate a competent person to monitor the safety of other employees and will ensure that the safety monitor complies with the following:

The safety monitor will be competent to recognize fall hazards

The safety monitor will warn the employee when it appears that the employee is unaware of a fall hazard or is acting in an unsafe manner

The safety monitor will be on the same walking/working surface and within visual

sighting distance of the employee being monitored

The safety monitor will be close enough to communicate orally with the employee

The safety monitor will not have other responsibilities which could take the monitor's attention from the monitoring function

Mechanical equipment will not be used or stored in areas where safety monitoring systems are being used to monitor employees engaged in roofing operation on low slope roofs.

No employee, other than an employee engaged in roofing work (on low sloped roofs) or an employee covered by a fall protection plan, will be allowed in an area where an employee is being protected by a safety monitoring system.

Each employee working in a controlled access zone will be directed to comply promptly with fall hazard warnings from safety monitors.

Covers

Covers for holes in floors, roofs, and other walking/working surfaces will meet the following requirements:

Covers located in roadways and vehicular aisles will be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover.

All other covers will be capable of supporting, without failure, at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.

All covers will be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees.

All covers will be color coded or they will be marked with the word "HOLE" or "COVER" to provide warning of the hazard.

Protection From Falling Objects

Falling object protection will comply with the following provisions:

Toeboards, when used as falling object protection, will be erected along the edge of the overhead walking/working surface for a distance sufficient to protect employees below.

Toeboards will be capable of withstanding, without failure, a force of at least 50 pounds (222N) applied in any downward or outward direction at any point along the toeboard.

Toeboards will be a minimum of 3 1/2 inches (9cm) in vertical height from their top edge to the level of the walking/working surface. They will have no more than 1/4 inch (0,6cm) clearance above the walking/working surface. They will be solid or have openings not over 1 inch (2.5cm) in greatest dimension.

Where tools, equipment, or materials are piled higher than the top edge of a toeboard, paneling or screening will be erected from the walking/working surface or toeboard to the top of a guardrail system's top rail or midrail, for a distance sufficient to protect employees below.

Guardrail systems, when used as failing object protection, will have all openings small enough to prevent passage of potential failing objects.

During the performance of overhand bricklaying and related work:

No materials or equipment except masonry and mortar will be stored within 4 feet (1.2m) of the working edge.

Excess mortar, broken or scattered masonry units, and all other materials and debris will be kept clear from the work area by removal at regular intervals.

During the performance of roofing work:

Materials and equipment will not be stored within 6 feet (1.8m) of roof edge unless guardrails are erected at the edge.

Materials which are piled, grouped, or stacked near a roof edge will be stable and self-supporting.

Canopies, when used as failing object protection, will be strong enough to prevent collapse and to prevent penetration by nay objects which may fall onto the canopy.

41.13 Fall Protection Plan

This option is available only to employees engaged in leading edge work, precast concrete erection work, or residential construction work who can demonstrate that it is infeasible or it creates a greater hazard to use conventional fall protection equipment. The fall protection plan must conform to the following provisions.

- The fall protection plan will be prepared by a qualified person and developed specifically for the site where the leading edge work, precast concrete work, or residential construction work is being performed and the plan must be maintained up to

date.

- Any changes to the fall protection plan will be approved by a qualified person.

- A copy of the fall protection plan with all approved changes will be maintained at the job site.

- The implementation of the fall protection plan will be under the supervision of a competent person.

- The fall protection plan will document the reasons why the uses of conventional fall protection systems (guardrails systems, personal fall arrest systems, or safety nets systems) are infeasible or why their use would create a greater hazard.

- The fall protection plan will include a written discussion of other measures that will be taken to reduce or eliminate the fall hazard for workers who cannot be provided with protection from the conventional fall protection systems. For example, Alin Machining Company dba Power Plant Services will discuss the extent to which scaffolds, ladders, or vehicle mounted work platforms can be used to provide a safer working surface and thereby reduce the hazard of falling.

The fall protection plan will identify each location where conventional fall protection methods cannot be used. These locations will then be classified as controlled access zones.

Where no other alternative measure has been implemented, Alin Machining Company dba Power Plant Services will implement a safety monitoring system.

The fall protection plan must include a statement which provides the name or other method of identification for each employee who is designated to work in controlled access zones. No other employees may enter controlled access zones.

In the event an employee falls, or some other related, serious incident occurs (e.g., a near miss) the company will investigate the circumstances of the fall or other incident to determine if the fall protection plan needs to be changed (e.g., new practices, procedures, or training) and will implement those changes to prevent similar types of falls or incidents.

41.14 Rescue

Alin Machining Company dba Power Plant Services will have means available to promptly rescue an employee should a fall occur, since the suspended employee may not be able to reach a work level independently.

41.15 ANSI & ASTM Requirements

OSHA and the ANSI A10.14-1991 American National Standard for Construction and Demolition Operations recommend that fall arrest and restraint equipment be used in accordance with the manufacturer's instructions.

Fall protection equipment(safety belts, harnesses, lanyards, etc.) will meet the requirements of applicable ANSI, ASTM, or OSHA requirements. When we purchase new equipment and raw materials for use in fall protection systems, the applicable ANSI & ASTM requirements will be met.

41.15.a Selection and Equipment Use

The kind of personal fall arrest system selected should match the particular work situation, and any possible free fall distance should be kept to a minimum. Consideration should be given to the particular work environment.

For example, the presence of acids, dirt, moisture, oil, grease, etc., and their effect on the system, should be evaluated. Hot or cold environments may also have an adverse effect on the system. Wire rope should not be used where an electrical hazard is anticipated.

41.16 Training Requirements

Training Program

Alin Machining Company dba Power Plant Services will provide a training program for each employee who might be exposed to fall hazards. The program will enable each employee to recognize the hazards of failing and will train each employee in the procedures to be followed in order to minimize these hazards.

Alin Machining Company dba Power Plant Services will assure that each employee has been trained, as necessary, by a competent person qualified in the following areas:

- The nature of fall hazards in the work area

- The correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used

- The use and operation of guardrail system, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used

- The role of each employee in the safety monitoring system when this system is used

- The limitations on the use of mechanical equipment during the performance of roofing work on low sloped roofs

- The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection

- The role of employees in fall protection plans

- The standards contained in this subpart

Certification of Training

Alin Machining Company dba Power Plant Services will verify compliance with the above paragraph by preparing a written certification record. The written certification record will contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the supervisor. If Alin Machining Company dba Power Plant Services relies on training conducted by another company or completed prior to the effective date of this section, the certification record will indicate the date the company determined the prior training was adequate rather than the date of actual training.

The latest training certification will be maintained.

Retraining

When the supervisor has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by the above paragraph, Alin Machining Company dba Power Plant Services will retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:

- Changes in the workplace render previous training obsolete

- Changes in the types of fall protection equipment to be used render previous training obsolete

- Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill

41.17 Statement of Company Policy

Alin Machining Company dba Power Plant Services is dedicated to the protection of its employees from on-the-job injuries. All employees of Alin Machining Company dba Power Plant Services have the responsibility to work safely on the job. The purpose of

this plan is to supplement our standard safety policy by providing safety standards specifically designed to cover fall protection on this job and to ensure that each employee is trained and made aware of the safety provisions which are to be implemented by this plan prior to the start of erection.

This fall protection plan addresses the use of other than conventional fall protection at a number of areas on the project, as well as identifying specific activities that require non-conventional means of fall protection. These areas include:

- Connecting activity (point of erection).
- Leading edge work.
- Unprotected sides or edge.
- Grouting.
- Installation of floor sheathing and joists.
- Roof sheathing operations.
- Erecting exterior walls
- Setting and bracing of roof trusses and rafters

In these cases, conventional fall protection systems may not be the safest choice. This plan is designed to enable employees to recognize the fall hazards on this job and to establish the procedures that are to be followed in order to prevent falls to lower levels or through holes and openings in walking/working surfaces.

Each employee will be trained in these procedures and strictly adhere to them except when doing so would expose the employee to a greater hazard. If, in the employee's opinion, this is the case, the employee is to notify the foreman of the concern and the concern addressed before proceeding.

Safety policy and procedure on any one project cannot be administered, implemented, monitored and enforced by any one individual. The total objective of a safe, accident free work environment can only be accomplished by a dedicated, concerted effort by every individual involved with the project from management down to the last employee. Each employee must understand their value to Alin Machining Company dba Power Plant Services ; the costs of accidents, both monetary, physical, and emotional; the objective of the safety policy and procedures; the safety rules that apply to the safety policy and procedures; and what their individual role is in administering, implementing, monitoring, and compliance of their safety policy and procedures. This allows for a more personal approach to compliance through planning, training, understanding and cooperative effort, rather than by strict enforcement, if for any reason an unsafe act persists, strict enforcement will be implemented. It is the responsibility of Safety Director to implement this Fall Protection Plan. Safety Director is responsible for continual observational safety checks of their work operations and to enforce the safety policy and procedures. The crew supervisor or foreman is responsible for correcting any unsafe acts or conditions immediately.

It is the responsibility of the employee to understand and adhere to the procedures of

this plan and to follow the instruction of the crew supervisor or foreman. It is also the responsibility of the employee to bring to management's attention any unsafe or hazardous conditions or acts that may cause injury to either themselves or any other employees. Any changes to this Fall Protection Plan must be approved by Safety Director.

41.18 Fall Protection Systems for Precast / Prestress Structures

Where conventional fall protection is infeasible or creates a greater hazard at the leading edge and during initial connecting activity, we plan to do this work using a safety monitoring system and expose only a minimum number of employees for the time necessary to actually accomplish the job. The maximum number of workers to be monitored by one safety monitor is six (6). We are designating the following trained employees as designated erectors and they are permitted to enter the controlled access zones and work without the use of conventional fall protection.

Safety Monitor:

Designated Erector:

Designated Erector:

Designated Erector:

Designated Erector:

Designated Erector:

Designated Erector:

The safety monitor will be identified by wearing a_____hard hat. The designated erectors will be identified by one of the following methods:

- They will wear a _____ colored arm band
- They will wear a _____ colored hard hat
- They will wear a _____ colored vest

Only individuals with the appropriate experience, skills, and training will be authorized as designated erectors. All employees that will be working as designated erectors under the safety monitoring system will have been trained and instructed in the following areas:

- Recognition of the fall hazards in the work area (at the leading edge and when

making initial connection s--point of erection).

- Avoidance of fall hazards using established work practices which have been made known to the employees.

- Recognition of unsafe- practices or working conditions that could lead to a fall, such as windy conditions.

- The function, use, and operation of safety monitoring systems, guardrail systems, body belt/harness systems, control zones and other protection to be used.

- The correct procedure for erecting, maintaining, disassembling and inspecting the system(s) to be used.

- Knowledge of construction sequence or the erection plan.

A conference will take place prior to starting work involving all members of the erection, crew, crane crew and supervisors of any other concerned contractors. This conference will be conducted by the precast concrete erection supervisor in charge of the project. During the pre-work conference, erection procedures and sequences pertinent to this job will be thoroughly discussed and safety practices to be used throughout the project will be specified. Further, all personnel will be informed that the controlled access zones are off limits to all personnel other than those designated erectors specifically trained to work in that area.

Safety Monitoring System:

A safety monitoring system is a fall protection system in which a competent person is responsible for recognizing and warning employees of fall hazards. The duties of the safety monitor are to:

- Warn by voice when approaching the open edge in an unsafe manner.

- Warn by voice if there is a dangerous situation developing which cannot be seen by another person involved with product placement, such as a member getting out of control.

- Make the designated erectors aware they are in a dangerous area.

- Be competent in recognizing fall hazards.

- Warn employees when they appear to be unaware of a fall hazard or are acting in an unsafe manner.

- Be on the same walking/working surface as the monitored employees and within visual sighting distance of the monitored employees.

- Be close enough to communicate orally with the employees.

- Not allow other responsibilities to encumber monitoring. If the safety monitor becomes too encumbered with other responsibilities, the monitor will:

- Stop the erection process
- Turn over other responsibilities to a designated erector
- Turn over the safety monitoring function to another designated, competent person.

The safety monitoring system will not be used when the wind is strong enough to cause loads with large surface areas to swing out of radius, or result in loss of control of the load, or when weather conditions cause the walking/working surfaces to become icy or slippery.

Control Zone System:

A controlled access zone is an area designated and clearly marked, in which leading edge work may take place without the use of guardrail, safety net or personal fall arrest systems to protect the employees in the area. Control zone systems will comply with the following provisions:

- When used to control access to areas where leading edge and other operations are taking place the controlled access zone will be defined by a control line or by any other means that restricts access.

When control lines are used, they will be erected not less than 6 feet (1.8m) nor more than 60 feet (1 8m) or half the length of the member being erected, whichever is less, from the leading edge.

- The control line will extend along the entire length of the unprotected or leading edge and will be approximately parallel to the unprotected or leading edge.

- The control line will be connected on each side to a guardrail system or wall.

- Control lines will consist of ropes, wires, tapes, or equivalent materials, and supporting stanchions as follows:

- Each line will be flagged or otherwise clearly marked at not more than 6 foot (1.8m) intervals with high visibility material.

- Each line will be rigged and supported in such a way that its lowest point (including sag) is not less than 39 inches (1 m) from the walking/working surface and its highest point is not more than 45 inches (1.3m) from the walking/working surface.

- Each line will have a minimum breaking strength of 200 pounds (.88kN).

Holes:

All openings greater than 12 in. x 12 in. will have perimeter guarding or covering. All predetermined holes will have the plywood covers made in the precasters' yard and shipped with the member to the jobsite. Prior to cutting holes on the job, proper protection for the hole must be provided to protect the workers. Perimeter guarding or covers will not be removed without the approval of the erection foreman.

Precast concrete column erection through the existing deck required that many holes be provided through this deck. These are to be covered and protected. Except for the opening being currently used to erect a column, all opening protection is to be left undisturbed. The opening being uncovered to erect a column will become part of the point of erection and will be addressed as part of this fall protection plan. This uncovering is to be done at the erection foreman's direction and will only occur immediately prior to "feeding" the columns through the opening. Once the end of the column is through the slab opening, there will no longer exist a fall hazard at this location.

Implementation of Fall Protection Plan:

EXAMPLE: The structure being erected is a multistory total precast concrete building consisting of columns, beams, wall panels and hollow core slabs and double tee floor and roof members.

The following is a list of the products and erection situations for this job:

Columns:

For columns 10 ft to 36 ft long, employees disconnecting crane hooks from columns will work from a ladder and wear a body belt/harness with lanyard and be tied off when both hands are needed to disconnect. For tying off, a vertical lifeline will be connected to the lifting eye at the top of the column, prior to lifting, to be used with a manually operated or mobile rope grab. For columns too high for the use of a ladder, 36 ft and higher, an added cable will be used to reduce the height of the disconnecting point so that a ladder can be used. This cable will be left in place until a point in erection that it can be removed safely. In some cases, columns will be unhooked from the crane by using an erection tube or shackle with a pull pin which is released from the ground after the column is stabilized.

The column will be adequately connected and/or braced to safely support the weight of a ladder with an employee on it.

Inverted Tee Beams:

Employees erecting inverted tee beams, at a height of 6 to 40 ft, will erect the beam, make initial connections, and in alignment from a ladder. If the employee needs to reach over the side of the beam to bar or make an adjustment to the alignment of the beam, they will mount the beam and be tied off to the lifting device in the beam after ensuring the load has been stabilized on its bearing. To disconnect the crane from the beam an employee will stand a ladder against the beam. Because the use of ladders is not practical at heights above 40 ft, beams will be initially placed with the use of tag lines and their final alignment made by a person on a manlift or similar employee positioning systems.
Spandrel Beams:

Spandrel beams at the exterior of the building will be aligned as closely as possible with the use of tag lines with the final placement of the spandrel beam made from a ladder at the open end of the structure. A ladder will be used to make the initial connections and a ladder will be used to disconnect the crane. The other end of the beam will be placed by the designated erector from the double tee deck under the observation of the safety monitor.

The beams will be adequately connected and/or braced to safely support the weight of a ladder with an employee on it.

Floor and Roof Members:

During installation of the precast concrete floor and/or roof members, the work deck continuously increases in area as more and more units are being erected and positioned. Thus, the unprotected floor/roof perimeter is constantly modified with the leading edge changing location as each member is installed. The fall protection for workers at the leading edge will be assured by properly constructed and maintained control zone lines not more than 60 ft away from the leading edge supplemented by a safety monitoring system to ensure the safety of all designated erectors working within the area defined by the control zone lines.
The hollow core slabs erected on the masonry portion of the building will be erected and grouted using the safety monitoring system. Grout will be places in the space between the ends of the slab and face shell of the concrete masonry by dumping from a wheelbarrow. The grout in the keyways between the slabs will be dumped from a wheelbarrow and then spread with long handled tools, allowing the worker to stand erect facing toward the unprotected edge and back from any work deck edge.

Whenever possible, the designated erectors will approach the incoming member at the leading edge only after it is below waist height so that the member itself provides protection against falls.

Except for the situations described below, when the arriving floor or roof member is within 2 to 3 inches of its final position, the designated erectors can then proceed to

their position of erection at each end of the member under the control of the safety monitor. Crane hooks will be unhooked from double tee members by designated erectors under the direction and supervision of the safety monitor.

Designated erectors, while waiting for the next floor or roof member, will be constantly under the control of the safety monitor for fall protection and are directed to stay a minimum of six (6) feet from the edge. In the event a designated erector must move from one end of a member, which has just been placed at the leading edge, they must first move away from the leading edge a minimum of six (6) ft and then progress to the other and while maintaining the minimum distance of six (6) ft at all times.

Erection of double tees, where conditions require bearing of one end into a closed pocket and the other end on a beam ledge, restricting the tee legs from going directly into the pockets, require special considerations. The tee legs that are to bear in the closed pocket must hang lower than those at the beam bearing. The double tee will be "two-lined" in order to elevate one end higher than the other to allow for the low end to be ducked into the closed pocket using the following procedure.

The double tee will be rigged with a standard four-way spreader off of the main load line; an additional choker will be attached to the married point of the two-legged spreader at the end of the tee that is to be elevated. The double tee will be hoisted with the main load line and swung into a position as close as possible to the tee's final bearing elevation. When the tee is in this position and stabilized, the whip line load block will be lowered to just above the tee deck. At this time, two erectors will walk out on the suspended tee deck at midspan of the tee member and pull the load block to the end of the tee to be elevated and attach the additional choker to the load block. The possibility of entanglement with the crane lines and other obstacles during this two lining process while raising and lowering the crane block on that second line could be hazardous to an encumbered employee. Therefore, the designated erectors will not tie off during any part of this process. While the designated erectors are on the double tee, the safety monitoring system will be used. After attaching the choker, the two erectors then step back on the previously erected tee deck and signal the crane operator to hoist the load with the whip line to the elevation that will allow for enough clearance to let the low end tee legs slide into the pockets when the main load line is lowered.

The erector, who is handling the lowered end of the tee at the closed pocket bearing, will step out on the suspended tee. An erection bar will then be placed between the end of the tee leg and the inside face of the pocketed spandrel member. The tee is barred away from the pocketed member to reduce the friction and lateral force against the pocketed member. As the tee is being lowered, the other erector remains on the tee which was previously erected to handle the other end. At this point the tee is slowly lowered by the crane to a point where the tee legs can freely slide into the pockets. The erector working the lowered end of the tee must keep pressure on the bar between the tee and the face of the pocketed spandrel member to very gradually let the tee legs slide into the pocket to its proper bearing dimension. The tee is then slowly lowered into its final erected position.

The designated erector should be allowed onto the suspended double tee, otherwise there is no control over the horizontal movement of the double tee and this movement could knock the spandrel off of its bearing or the column out of plumb. The control necessary to prevent hitting the spandrel can only be done safely from the top of the double tee being erected.

Load-bearing Wall Panels: The erection of the load-bearing wall panels on the elevated decks requires the use of a safety monitor and a controlled access zone that is a minimum of 25 ft and a maximum of 1/2 the length of the wall panels away from the unprotected edge, so that designated erectors can move freely and unencumbered when receiving the panels. Bracing, if required for stability, will be installed by ladder. After the braces are secured, the crane will be disconnected from the wall by using a ladder. The wall to wall connections will also be performed from a ladder.

Non-Load-bearing Panels (Cladding): The location of survey lines, panel layout and other installation prerequisites (prewelding, etc.) for Non-Load-bearing panels (cladding) will not commence until floor perimeter and floor openings have been protected. In some areas, it is necessary because of panel configuration to remove the perimeter protection as the cladding is being installed. Removal of perimeter protection will be performed on a bay to bay basis, just ahead of cladding erection to minimize temporarily unprotected floor edges. Those workers within 6 ft of the edge, receiving and positioning the cladding when the perimeter protection is removed will be tied off.

Detailing:

Employees exposed to falls of six (6) feet or more to lower levels, who are not actively engaged in leading edge work or connecting activity, such as welding, bolting, cutting, bracing, guying, patching, painting, or other operations, and who are working less than six (6) ft from an unprotected edge will be tied off at all times or guardrails will be installed. Employees engaged in these activities but who are more than six (6) ft from an unprotected edge as defined by the control zone lines, do not require fall protection but a warning line or control lines must be erected to remind employees they are approaching an area where fall protection is required.

41.19 Fall Protection Systems to be used for Residential Construction

Installation of roof trusses/rafters, exterior wall erection, roof sheathing, floor sheathing and joist/truss activities will be conducted by employees who are specifically trained to do this type of work and are trained to recognize the fall hazards. The nature of such work normally exposes the employee to the fall hazard for a short period of time. This Plan details how Alin Machining Company dba Power Plant Services minimizes these hazards.

Controlled Access Zones

When using the Plan to implement the fall protection options available, workers must be protected through limited access to high hazard locations. Before any non-conventional fall protection systems are used as part of the work plan, a Controlled Access Zone (CAZ) will be clearly defined by the competent person as an area where a recognized hazard exists. The demarcation of CAZ will be communicated by the competent person in a recognized manner, either through signs, wires, tapes, ropes or chains.

Alin Machining Company dba Power Plant Services will take the following steps to ensure that the CAZ is clearly marked or controlled by the competent person:

1. All access to the CAZ must be restricted to authorized entrants.

2. All workers who are permitted in the CAZ will be listed in the appropriate sections of the Plan (or be visibly identifiable by the competent person) prior to implementation.

3. The competent person will ensure that all protective elements of the CAZ be implemented prior to the beginning of work.

Installation Procedures for Roof Truss and Rafter Erection

During the erection and bracing of roof trusses/rafters, conventional fall protection may present a greater hazard to workers. Safety nets, guardrails and personal fall arrest systems will not provide adequate fall protection because the nets will cause the walls to collapse, while there are no suitable attachment or anchorage points for guardrails or personal fall arrest systems.

Jobs requiring workers to use a ladder for the entire installation process will cause a greater hazard because the worker must stand on the ladder with his back or side to the front of the ladder. While erecting the truss or rafter the worker will need both hands to maneuver the truss and therefore cannot hold onto the ladder. In addition, ladders cannot be adequately protected from movement while trusses are being maneuvered into place. Many workers may experience additional fatigue because of the increase in overhead work with heavy materials, which can also lead to a greater hazard.

Exterior scaffolds cannot be utilized on this job because the ground, after recent backfilling, cannot support the scaffolding. In most cases, the erection and dismantling of the scaffold would expose workers to a greater fall hazard than erection of the trusses/rafters.

On all walls eight feet or less, workers will install interior scaffolds along the interior wall below the location where the trusses/rafters will be erected. "Sawhorse" scaffolds constructed of 46 inch sawhorses; and 2 x 10 planks will often allow workers to be elevated high enough to allow for the erection of trusses and rafters without working on the top plate of the wall.

In structures that have walls higher than eight feet and where the use of scaffolds and ladders would create a greater hazard, safe working procedures will be utilized when working on the top plate and will be monitored by the crew supervisor. During all stages of truss/rafter erection the stability of the trusses/rafters will be ensured at all times.

Alin Machining Company dba Power Plant Services will take the following steps to protect workers who are exposed to fall hazards while working from the top plate installing trusses/rafters:

- Only the following trained workers will be allowed to work on the top plate during roof truss or rafter installation:

- Workers will have no other duties to perform during truss/rafter erection procedures.

- All trusses/rafters will be adequately braced before any worker can use the truss/rafter as a support.

- Workers will remain on the top plate using the previously stabilized truss/rafter as a support while other trusses/rafters are being erected.

- Workers will leave the area of the secured trusses only when it is necessary to secure another truss/rafter.

- The first two trusses/rafters will be set from ladders leaning on side walls at points where the walls can support the weight of the ladder.

- A worker will climb onto the interior top plate via a ladder to secure the peaks of the first two trusses/rafters being set.

The workers responsible for detaching trusses from cranes and/or securing trusses at the peaks traditionally are positioned at the peak of the trusses/rafters. There are also situations where workers securing rafters to ridge beams will be positioned on top of the ridge beam.

Alin Machining Company dba Power Plant Services will take the following steps to protect workers who are exposed to fall hazards while securing trusses/rafters at the peak of the trusses/ridge beam:

- Only the following trained workers will be allowed to work at the peak during roof truss or rafter installation:

- Once truss or rafter installation begins, workers not involved in that activity will not stand or walk below or adjacent to the roof opening or exterior walls in any area

where they could be struck by falling objects.

- Workers will have no other duties than securing/bracing the trusses/ridge beam.

- Workers positioned at the peaks or in the webs of trusses or on top of the ridge beam will work from a stable position, either by sitting on a "ridge seat" or other equivalent surface that provides additional stability or by positioning themselves in previously stabilized trusses/rafters and leaning into and reaching through the trusses/rafters.

- Workers will not remain on or in the peak/ridge any longer than necessary to safely complete the task.

Roof Sheathing Operations

Workers typically install roof sheathing after all trusses/rafters and any permanent truss bracing is in place. Roof structures are unstable until some sheathing is installed, so workers installing roof sheathing cannot be protected from fall hazards by conventional fall protection systems until it is determined that the roofing system can be used as an anchorage point. At that point, employees will be protected by a personal fall arrest system.

Trusses/rafters are subject to collapse if a worker falls while attached to a single truss with a belt/harness. Nets could also cause collapse, and there is no place to attach guardrails.

All workers will ensure that they have secure footing before they attempt to walk on the sheathing, including cleaning shoes/boots of mud or other slip hazards.

To minimize the time workers must be exposed to a fall hazard, materials will be staged to allow for the quickest installation of sheathing.

Alin Machining Company dba Power Plant Services will take the following steps to protect workers who are exposed to fall hazards while installing roof sheathing:

Once roof sheathing installation begins, workers not involved in that activity will not stand or walk below or adjacent to the roof opening or exterior walls in any area where they could be struck by falling objects.

The competent person will determine the limits of this area, which will be clearly communicated to workers prior to placement of the first piece of roof sheathing.

The competent person may order work on the roof to be suspended for brief periods as necessary to allow other workers to pass through such area when this would not create a greater hazard.

Only qualified workers will install roof sheathing.

The bottom row of roof sheathing may be installed by workers standing in truss webs.

After the bottom row of roof sheathing is installed, a slide guard extending the width of the roof will be securely attached to the roof. Slide guards are to be constructed of no less than nominal 4" height capable of limiting the uncontrolled slide or workers. Workers should install the slide guard while standing in truss webs and leaning over the sheathing.

Additional rows of roof sheathing may be installed by workers positioned on previously installed rows of sheathing. A slide guard can be used to assist workers in retaining their footing during successive sheathing operations.

Additional slide guards will be securely attached to the roof at intervals not to exceed 13 feet as successive rows of sheathing are installed. For roofs with pitches in excess of 9-in-12, slide guards will be installed at four foot intervals.

When wet weather (rain, snow, or sleet) are present, roof sheathing operations will be suspended unless safe footing can be assured for those workers installing sheathing.

When strong winds (above 40 miles per hour) are present, roof sheathing operations are to be suspended unless wind breakers are erected.

Installation of Floor Joists and Sheathing

During installation of floor sheath in g/joists (leading edge construction), the following steps will be taken to protect workers:

- Only the following trained workers will be allowed to install floor joists or sheathing:

- Materials for the operations will be conveniently stages to allow for easy access to workers.

- The first floor joists or trusses will be rolled into position and secured either from the ground, ladders or sawhorse scaffolds.

- Each successive floor joist or truss will be rolled into place and secured from a platform created from a sheet of plywood laid over the previously secured floor joists or trusses.

- Except for the first row of sheathing which will be installed from ladders or the ground, workers will work from the established deck.

- Any workers not assisting in the leading edge construction while leading edges still exist (e.g., cutting the decking for the installers) will not be permitted within six feet of the leading edge under construction.

Erection of Exterior Walls

During the construction and erection of exterior walls, Alin Machining Company dba Power Plant Services will take the following steps to protect workers:

- Only the following trained workers will be allowed to erect exterior walls:

- A painted line six feet from the perimeter will be clearly marked prior to any wall erection activities to warn of the approaching unprotected edge.

- Materials for operations will be conveniently staged to minimize fall hazards.

- Workers constructing exterior walls will complete as much cutting of materials and other preparation as possible away from the edge of the deck.

41.20 Enforcement

Constant awareness of and respect for fall hazards, and compliance with all safety rules are considered conditions of employment. The crew supervisor or foreman, as well as individuals in the Safety and Personnel Department, reserve the right to issue disciplinary warnings to employees, up to and including termination, for failure to follow the guidelines of this program.

41.21 Accident Investigations

Ail accidents that result in injury to workers, regardless of their nature, will be investigated and reported. It is an integral part of any safety program that documentation takes place as soon as possible so that the cause and means of prevention can be identified to prevent a reoccurrence.

In the event that an employee falls or there is some other related, serious incident occurring, this plan will be reviewed to determine if additional practices, procedures, or training need to be implemented to prevent similar types of falls or incidents from occurring.

41.22 Changes to Plan

Any changes to the plan will be approved by Safety Director. This plan will be reviewed by a qualified person as the job progresses to determine if additional practices,

procedures or training needs to be implemented by the competent person to improve or provide additional fall protection. Workers will be notified and trained, if necessary, in the new procedures. A copy of this plan and all approved changes will be maintained at the jobsite.

Chapter 42 - Hazard Communication - HAZCOM

42.1 Employee Information and Training

Alin Machining Company dba Power Plant Services provides employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Information and training is designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information is always available at Alin Machining Company dba Power Plant Services through labels and material safety data sheets. Training will be documented and recorded with the employee's name, the trainee's name, the date training was received, what they were trained on, etc. The training documents will be retained 3 years after.

42.1.a Information

Employees receive information including the following:

- The requirements of section .1.b of this chapter;
- Any operations in their work area where hazardous chemicals are present; and,
- The location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals and MSDS - material safety data sheets required by section .7 of this chapter.

Alin Machining Company dba Power Plant Services shall provide employees with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and material safety data sheets. Employees shall be informed of:

- The requirements of Alin Machining Company dba Power Plant Services 's policy;
- Any operations in their work area where hazardous chemicals are present; and,
- The location and availability of our written hazard communication program, including the required list(s) of hazardous chemicals, and material safety data sheets required by this section.

42.1.b Training

Employee training incorporates the following:

- Methods and observations that may be used to detect the presence or

release of a hazardous chemical in the work area (such as monitoring conducted by Alin Machining Company dba Power Plant Services , continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);

- The physical and health hazards of the chemicals in the work area;

- The measures employees can take to protect themselves from these hazards, including specific procedures Alin Machining Company dba Power Plant Services has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and,

- The details of the hazard communication program developed by Alin Machining Company dba Power Plant Services , including an explanation of the labeling system and the Material Safety Data Sheet, and how employees can obtain and use the appropriate hazard information.

Training Checklist to be used by all employees when possible exposure to any potentially hazardous material:

Read and understood the requirements. _____
Understand assigned responsibility for tasks. _____
Checked Master MSDS list for chemicals. _____
Obtained MSDS for each chemical. _____
Obtain copy of written program. _____
Understand emergency procedures _____
Have completed any additional training required _____
Established procedures to maintain current program. _____
Established procedures to evaluate effectiveness. _____

42.2 Written Hazard Communication Program

Alin Machining Company dba Power Plant Services will develop, implement, and maintain at each workplace a written hazard communication program. Alin Machining Company dba Power Plant Services 's Responsible Safety Officer is Safety Director, they are responsible for ensuring that the labels are maintained as required on the containers at the facility, and that newly purchased materials are checked for labels prior to use.

A description of the criteria for labels and other forms of warning, material safety data sheets, and employee information and training will be readily available to any company employee, and which includes the following:

- A list of the hazardous chemicals known to be present using an identity that is

referenced on the appropriate material safety data sheet (the list may be compiled for the workplace as a whole or for individual work areas); and,

- The methods Alin Machining Company dba Power Plant Services will use to inform employees of the hazards of non-routine tasks (for example, the cleaning of reactor vessels), and the hazards associated with chemicals contained in unlabeled pipes in their work areas. This will be performed in written format using the form “Hazards of Non-Routine Tasks.” It will be given to employees or workers prior to performing work and outlining the hazards and risks involved.

42.3 Multi-Employer Workplaces

Other Employers, including Alin Machining Company dba Power Plant Services who produce, use, or store hazardous chemicals at a workplace in such a way that the employees of other employers may be exposed (for example, employees of a construction contractor working on-site) are required by OSHA to additionally ensure that their hazard communication programs implemented the following:

- The methods of use to provide the other employer(s) on-site access to material safety data sheets for each hazardous chemical the other employer's employees may be exposed to while working;

- The methods to inform the other employer(s) of any precautionary measures that need to be taken to protect employees during the workplace's normal operating conditions and in foreseeable emergencies; and,

- The methods to inform the other employer(s) of the labeling system used in the workplace.

Alin Machining Company dba Power Plant Services will make their written hazard communication program available, upon request, to employees, their designated representatives, the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor and Director of the National Institute for Occupational Safety and Health, in accordance with the requirements of 29 CFR 1910.1020 (e).

Where employees must travel between workplaces during a work shift, i.e., their work is carried out at more than one geographical location, the written hazard communication program may be kept at the primary workplace facility.

42.4 Labels and Other Forms of Warning

Alin Machining Company dba Power Plant Services will not remove or deface existing labels on incoming containers of hazardous chemicals, unless the container is

immediately marked with the required information.

Alin Machining Company dba Power Plant Services may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information below to be on the label:

- Identity of the hazardous chemical(s);
- Signal Word
- Appropriate hazard warnings;
- Pictograms;
- Name and address of the chemical manufacturer, importer, or other responsible party.

The written materials shall be readily accessible to the employees in their work area throughout each work shift. Labels should be check weekly or as needed to make they are legible and in English, as well as any other language necessary.

42.5 Other Hazard Warnings

Appropriate hazard warnings, or alternatively, words, pictures, symbols, or combination thereof, which provide at least general information regarding the hazards of the chemicals, and which, in conjunction with the other information immediately available to employees under the hazard communication program, will provide employees with the specific information regarding the physical and health hazards of the hazardous chemical.

Control banding is a process in which **control** technology is applied to a chemical. The control banding approach focuses resources on exposure controls and describes how strictly a risk needs to be managed. The control banding process emphasizes the controls needed to prevent hazardous substances from causing harm to people at work. The greater the potential for harm, the greater the degree of control needed to manage the situation and make the risk 'acceptable.'

Example – Table 1

Table 1. Control bands for exposures to chemicals by inhalation

Band No.	Range of exposure concentrations	Hazard group	Control
1	>1 to 10 mg/m^3 dust >50 to 500 ppm vapor	Skin and eye irritants	Use good industrial hygiene practice and general ventilation.
2	>0.1 to 1 mg/m^3 dust >5 to 50 ppm vapor	Harmful on single exposure	Use local exhaust ventilation.
3	>0.01 to 0.1 mg/m^3	Severely irritating and corrosive	Enclose the process.

	dust >0.5 to 5 ppm vapor		
4	<0.01 mg/m^3 dust <0.5 ppm vapor	Very toxic on single exposure, reproductive hazard, sensitizer*	Seek expert advice.

*Exposure to any concentration of a sensitizer requires expert advice.

NFPA has over 300 codes worldwide which are for sale through their web site. These codes cover every conceivable topic including basic fire safety, the *National Electrical Code*, and life safety. These codes are developed and updated through an open process, ensuring their broad acceptance. Below is a list of Sample Labelings

Health Hazard	
4	Very short exposure could cause death or serious residual injury even though prompt medical attention was given.
3	Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.
2	Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
1	Exposure could cause irritation but only minor residual injury even if no treatment is given.
0	Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

Flammability	
4	Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.
3	Liquids and solids that can be ignited under almost all ambient conditions.
2	Must be moderately heated or exposed to relatively high temperature before ignition can occur.
1	Must be preheated before ignition can occur.
0	Materials that will not burn.

Instability[1]	
4	Readily capable of detonation or of explosive decomposition or reaction at normal temperatures and pressures.
3	Capable of detonation or explosive reaction, but requires a strong initiating source or must be heated under confinement before initiation, or reacts explosively with water.
2	Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.
1	Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.
0	Normally stable, even under fire exposure conditions, and are not reactive with water.

[1] Prior to 1996, this section was titled "Reactivity". The name was changed because many people did not understand the distinction between a "reactive hazard" and the "chemical reactivity" of the material. The numeric ratings and their meanings remain unchanged.

Special Hazards	
This section is used to denote special hazards. There are only three NFPA 704 **approved** symbols:	
OX	This denotes an oxidizer, a chemical which can greatly increase the rate of combustion/fire.
SA	This denotes gases which are simple asphyxiants. The only gases for which this symbol is permitted are nitrogen, helium, neon, argon, krypton, and xenon.. The use of this hazard symbol is optional.
W	Unusual reactivity with water. This indicates a potential hazard using water to fight a fire involving this material. When a compound is both water-reactive and an oxidizer, the W/bar symbol should go in this quadrant and the OX warning is placed immediately below the NFPA diamond.

Some organizations use other symbols, abbreviations, and words in the white Special Hazards section. NFPA 704 permits the use of additional symbols, but

they must be placed **outside** of the NFPA diamond. The following symbols are **not** compliant with NFPA 704, but we present them here in case you see them on an MSDS or container label.

ACID	This indicates that the material is an acid, a corrosive material that has a pH lower than 7.0
ALK	This denotes an alkaline material, also called a base. These caustic materials have a pH greater than 7.0
COR	This denotes a material that is corrosive (it could be either an acid or a base).
	This is a another symbol used for corrosive.
	The skull and crossbones is used to denote a poison or highly toxic material. See also: CHIP Danger symbols.
	The international symbol for radioactivity is used to denote radioactive hazards; radioactive materials are extremely hazardous when inhaled.
	Indicates an explosive material. This symbol is somewhat redundant because explosives are easily recognized by their Instability Rating.

The exact guidelines by which you can place a chemical in one of these four categories are available in the NFPA standard.

42.6 Non-English Hazard Communication

Alin Machining Company dba Power Plant Services shall ensure that labels and all other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift. If Alin Machining Company dba Power Plant Services has employees who speak other languages they shall add the information in their language to the material presented, as long as the information is presented in English as well. Non-English speaking employees shall have the information presented in their language as well.

42.7 Material Safety Data Sheets

Alin Machining Company dba Power Plant Services has a material safety data sheet in the workplace for each hazardous chemical which is used at that facility or jobsite.

Chemical manufacturers are responsible for developing MSDS. We as an Employer shall have a MSDS for each chemical used.

Alin Machining Company dba Power Plant Services **'s Material Safety Data Sheet – see Appendix**

Alin Machining Company dba Power Plant Services maintains in the workplace copies of the required material safety data sheets for each hazardous chemical, and ensures that it is readily accessible during each work shift to employees when they are in their work area(s). (Electronic access, microfiche, and other alternatives to maintaining paper copies of the material safety data sheets are permitted as long as no barriers to immediate employee access in each workplace are created by such options.)

Where employees must travel between workplaces during a work shift, i.e., their work is carried out at more than one geographical location, the material safety data sheets may be kept at the primary workplace facility. In this situation**, Alin Machining Company** dba Power Plant Services **shall ensure that employees can immediately obtain the required information in an emergency.**

Material safety data sheets may be kept in any form, including operating procedures, and may be designed to cover groups of hazardous chemicals in a work area where it may be more appropriate to address the hazards of a process rather than individual hazardous chemicals. However, Alin Machining Company dba Power Plant Services shall ensure that in all cases the required information is provided for each hazardous chemical, and is readily accessible during each work shift to employees when they are in their work area(s).

Material safety data sheets are also readily available, upon request, to designated representatives and to the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, in accordance with the requirements of 29 CFR 1910.1020(e). Director of the National Institute for Occupational Safety and Health will be given access to material safety data sheets in the same manner.

Prior to purchasing new products, they must be reviewed to determine whether or not they contain hazardous chemicals that may be dangerous and/or carcinogenic. This will be necessary in informing employees to how to handle these products as well as protect them from the dangers they pose. MSDS must be replaced when the manufacturer issues an updated MSDS Form to stay up to date, this must be recorded and documented in the company's MSDS list within 3 months after receiving.

42.8 Listing of Hazardous Chemicals

This Appendix contains a listing of toxic and reactive highly hazardous chemicals which

present a potential for a catastrophic event at or above the threshold quantity. The chemicals used by our company are highlighted or marked with an asterisk.

CHEMICAL NAME	CAS*	TQ**
Acetaldehyde	75-07-0	2500
Acrolein (2-Popenal)	107-02-8	150
Acrylyl Chlorde	814-68-6	250
Allyl Chlorid	107-05-1	1000
Allylamine	107-11-9	1000
Alkylaluminum	Varies	5000
Ammonia, Anhydrous	7664-41-7	10000
Ammonia solutions (greater than 44% ammonia by weight)	7664-41-7	15000
Ammonium Perchlorate	7790-98-9	7500
Ammonium Permanganate	7787-36-2	7500
Arsine (also called Arsenic Hydride)	7784-42-1	100
Bis(Chloromethyl) Ether	542-88-1	100
Boron Trichloride	10294-34-5	2500
Boron Trifluoride	7637-07-2	250
Bromine	7726-95-6	1500
Bromine Chloride	13863-41-7	1500
Bromine Pentafluoride	7789-30-2	2500
Bromine Trifluoride	7787-71-5	15000
3-Bromopropyne (also called Propargyl Bromide)	106-96-7	100
Butyl Hydroperoxide (Tertiary)	75-91-2	5000
Butyl Perbenzoate (Tertiary)	614-45-9	7500
Carbonyl Chloride (see Phosgene)	75-44-5	100
Carbonyl Fluoride	353-50-4	2500
Cellulose Nitrate (concentration greater than 12.6% nitrogen	9004-70-0	2500
Chlorine	7782-50-5	1500
Chlorine Dioxide	10049-04-4	1000
Chlorine Pentrafluoride	13637-63-3	1000
Chlorine Trifluoride	7790-91-2	1000
Chlorodiethylaluminum (also called Diethylaluminum Chloride)	96-10-6	5000

1-Chloro-2,4-Dinitrobenzene	97-00-7	5000
Chloromethyl Methyl Ether	107-30-2	500
Chloropicrin	76-06-2	500
Chloropicrin and Methyl Bromide mixture	None	1500
Chloropicrin and Methyl Chloride mixture	None	1500
Commune Hydroperoxide	80-15-9	5000
Cyanogen	460-19-5	2500
Cyanogen Chloride	506-77-4	500
Cyanuric Fluoride	675-14-9	100
Diacetyl Peroxide (concentration greater than 70%)	110-22-5	5000
Diazomethane	334-88-3	500
Dibenzoyl Peroxide	94-36-0	7500
Diborane	19287-45-7	100
Dibutyl Peroxide (Tertiary)	110-05-4	5000
Dichloro Acetylene	7572-29-4	250
Dichlorosilane	4109-96-0	2500
Diethylzinc	557-20-0	10000
Diisopropyl Peroxydicarbonate	105-64-6	7500
Dilauroyl Peroxide	105-74-8	7500
Dimethyldichlorosilane	75-78-5	1000
Dimethylhydrazine, 1,1-	57-14-7	1000
Dimethylamine, Anhydrous	124-40-3	2500
2,4-Dinitroaniline	97-02-9	5000
Ethyl Methyl Ketone Peroxide (also Methyl Ethyl Ketone Peroxide; concentration greater than 60%)	1338-23-4	5000
Ethyl Nitrite	109-95-5	5000
Ethylamine	75-04-7	7500
Ethylene Fluorohydrin	371-62-0	100
Ethylene Oxide	75-21-8	5000
Ethyleneimine	151-56-4	1000
Fluorine	7782-41-4	1000
Formaldehyde (Formalin)	50-00-0	1000
Furan	110-00-9	500
Hexafluoroacetone	684-16-2	5000
Hydrochloric Acid, Anhydrous	7647-01-0	5000
Hydrofluoric Acid, Anhydrous	7664-39-3	1000
Hydrogen Bromide	10035-10-6	5000
Hydrogen Chloride	7647-01-0	5000
Hydrogen Cyanide, Anhydrous	74-90-8	1000

Hydrogen Fluoride	7664-39-3	1000
Hydrogen Peroxide (52% by weight or greater)	7722-84-1	7500
Hydrogen Selenide	7783-07-5	150
Hydrogen Sulfide	7783-06-4	1500
Hydroxylamine	7803-49-8	2500
Iron, Pentacarbonyl	13463-40-6	250
Isopropylamine	75-31-0	5000
Ketene	463-51-4	100
Methacrylaldehyde	78-85-3	1000
Methacryloyl Chloride	920-46-7	150
Methacryloyloxyethyl Isocyanate	30674-80-7	100
Methyl Acrylonitrile	126-98-7	250
Methylamine, Anhydrous	74-89-5	1000
Methyl Bromide	74-83-9	2500
Methyl Chloride	74-87-3	15000
Methyl Chloroformate	79-22-1	500
Methyl Ethyl Ketone Peroxide (concentration greater than 60%)	1338-23-4	5000
Methyl Fluoroacetate	453-18-9	100
Methyl Fluorosulfate	421-20-5	100
Methyl Hydrazine	60-34-4	100
Methyl Iodide	74-88-4	7500
Methyl Isocyanate	624-83-9	250
Methyl Mercaptan	74-93-1	5000
Methyl Vinyl Ketone	79-84-4	100
Methyltrichlorosilane	75-79-6	500
Nickel Carbonly (Nickel Tetracarbonyl)	13463-39-3	150
Nitric Acid (94.5% by weight or greater)	7697-37-2	500
Nitric Oxide	10102-43-9	250
Nitroaniline (para Nitroaniline	100-01-6	5000
Nitromethane	75-52-5	2500
Nitrogen Dioxide	10102-44-0	250
Nitrogen Oxides (NO; NO(2); N2O4; N2O3)	10102-44-0	250
Nitrogen Tetroxide (also called Nitrogen Peroxide)	10544-72-6	250
Nitrogen Trifluoride	7783-54-2	5000
Nitrogen Trioxide	10544-73-7	250
Oleum (65% to 80% by weight; also called Fuming Sulfuric Acid)	8014-94-7	1000

Osmium Tetroxide	20816-12-0	100
Oxygen Difluoride (Fluorine Monoxide)	7783-41-7	100
Ozone	10028-15-6	100
Pentaborane	19624-22-7	100
Peracetic Acid (concentration greater 60% Acetic Acid; also called Peroxyacetic Acid)	79-21-0	1000
Perchloric Acid (concentration greater than 60% by weight)	7601-90-3	5000
Perchloromethyl Mercaptan	594-42-3	150
Perchloryl Fluoride	7616-94-6	5000
Peroxyacetic Acid (concentration greater than 60% Acetic Acid; also called Peracetic Acid)	79-21-0	1000
Phosgene (also called Carbonyl Chloride)	75-44-5	100
Phosphine (Hydrogen Phosphide)	7803-51-2	100
Phosphorus Oxychloride (also called Phosphoryl Chloride)	10025-87-3	1000
Phosphorus Trichloride	7719-12-2	1000
Phosphoryl Chloride (also called Phosphorus Oxychloride)	10025-87-3	1000
Propargyl Bromide	106-96-7	100
Propyl Nitrate	627-3-4	2500
Sarin	107-44-8	100
Selenium Hexafluoride	7783-79-1	1000
Stibine (Antimony Hydride)	7803-52-3	500
Sulfur Dioxide (liquid)	7446-09-5	1000
Sulfur Pentafluoride	5714-22-7	250
Sulfur Tetrafluoride	7783-60-0	250
Sulfur Trioxide (also called Sulfuric Anhydride)	7446-11-9	1000
Sulfuric Anhydride (also called Sulfur Trioxide)	7446-11-9	1000
Tellurium Hexafluoride	7783-80-4	250
Tetrafluoroethylene	116-14-3	5000
Tetrafluorohydrazine	10036-47-2	5000
Tetramethyl Lead	75-74-1	1000
Thionyl Chloride	7719-09-7	250
Trichloro (chloromethyl) Silane	1558-25-4	100
Trichloro (dichlorophenyl) Silane	27137-85-5	2500
Trichlorosilane	10025-78-2	5000

Trifluorochloroethylene	79-38-9	10000
Trimethyoxysilane	2487-90-3	1500

Footnote* Chemical Abstract Service Number
Footnote** Threshold Quantity in Pounds (Amount necessary to be covered by this standard.)

Chapter 43 - Heat Illness Prevention Program

43.1 General

These procedures provide the minimal steps applicable to most outdoor work situations and essential to reducing the incidence of heat related illnesses. in working environments with a higher risk for heat illnesses (e.g., during a heat wave, or with severe working or environmental conditions), it is Alin Machining Company dba Power Plant Services 's duty to exercise even greater caution and additional protective measures beyond what is listed in this document, as needed to protect employees. Additional protective measures include:

1. Increased employer vigilance for frequent water consumption and symptoms of heat illness for non-acclimatized employees or during the first 2 weeks on job, and for all employees during heat waves or prolonged high heat stress conditions provide a
2. Graduated work schedule and greater opportunities for cooled work breaks for first 2 weeks on job.

43.2 Provisions of Water

Water is a key preventive measure to minimize the risk of heat related illness.

Employees shall have access to potable drinking water that it **be fresh, pure, suitably cool, and provided to employees free of charge** and that meets all the requirements of the applicable sections. The water shall be located as close as practicable to the areas where employees are working, with exceptions when employers can demonastrate infeasibility.

Where it is not plumbed or otherwise continuously supplied, it shall be provided in sufficient quantity at the beginning of the work shift to provide a minimum of one quart per employee per hour for drinking for the entire shift. Employers may begin the shift with smaller quantities of water if they have effective procedures for replenishment during the shift as needed to allow employees to drink one quart or more per hour. The frequent drinking of water, as described in the below section titled "Training", shall be encouraged.

43.2.a Replenishment Procedures

1. The Supervisor will bring (or arrange for) at least 1-2 quarts per employee at the start of the shift. Alin Machining Company dba Power Plant Services will have a supply of water on the premises in 5 gallon water containers and will be replenished as needed at the discretion of the Jobsite Foreman.

2. The Supervisor monitors water containers every 30 minutes and encourage

employees to report to low water levels, warm or dirty water. The water containers will be checked more frequently when the temperature rises. Water containers will be refilled with cool water, when the water level within a container drops below 50 percent. Additional water containers (e.g. five gallon bottles) will be carried, to replace water as needed.

3. The Supervisor will remind employees to drink water prior to starting their shift and give reminders throughout the shift to drink water.

4. The Supervisor will hold tailgate meetings in the morning to remind workers about the importance of frequent water consumption.

1. Water containers will be placed close to or, where acceptable, in the immediate work area (given the working conditions and layout of the worksite), to encourage the frequent drinking of water. If field terrain prevents the water from being placed as close as possible to the workers, bottled water or personal water containers will be made available, so that workers can have drinking water readily accessible.

6. The Supervisor will retain employees in the shade or air conditioning to ensure safety during a heat wave if it is observed that any specific employees are not drinking enough water, taking shade breaks or acclimatizated to the heat.

7. Paper cone rims or bags of disposable cups and the necessary cup dispensers will be made available to workers and will be kept clean until used.

8. Ice will be carried in separate containers, so that when necessary, it will be added to the drinking water to keep it cool.

9. Water containers will be relocated to follow along with the crew, so drinking water will remain readily accessible.

11. Daily, workers will be reminded of the location of the water coolers and of the importance of drinking water frequently. When the temperature exceeds or is expected to exceed 79 degrees Fahrenheit, brief ‘tailgate’ meetings will be held each morning to review with employees the importance of drinking water, the number and schedule of water and rest breaks and the signs and symptoms of heat illness.

12. Audible devices (such as whistles or air horns) will be used to remind employees to drink water.

13. When the temperature equals or exceeds 95 degrees Fahrenheit, the Supervisor will follow the “High Heat Procures” section of this chapter under section 14 and during a heat wave, the number of water breaks will be dramatically increased, and workers will be reminded throughout the work shift to drink water in addition to the the “High-Heat Procures”.

14. During employee training and tailgate meetings, the importance of frequent drinking of water will be stressed.

43.3 Access To Shade

Access to rest and shade are important preventive steps to minimize the risk of heat related illness. Employees suffering from heat illness or believing a preventative recovery period is needed, the employee shall be provided access to an area with shade that is either open to the air or provided with ventilation or cooling for a period of no less than five minutes. Such access to shade shall be permitted at all times. Except for employers in the agricultural industry, cooling measures other than shade (e.g., use of misting machines) may be provided in lieu of shade if the employer can demonstrate that these measures are at least as effective as shade in allowing employees to cool.

1. Shade shall be present when the temperature exceeds 80 degrees Fahrenheit. When the outdoor temperature in the work area exceeds 80 degrees Fahrenheit, the employer shall have and maintain one or more areas with shade at all times while employees are present that are either open to the air or provided with ventilation or cooling. The amount of shade present shall be at least enough to accommodate the number of employees on recovery or rest periods and those onsite taking meal periods, so that they can sit in a normal posture fully in the shade without having to be in physical contact with each other. The shade shall be located as close as practicable to the areas where employees are working. Subject to the same specifications, the amount of shade present during meal periods shall be at least enough to accommodate the number of employees on the meal period who remain onsite.

2. When the temperature is at or below 80 degrees Fahrenheit, access to shade shall be available and provided promptly, when requested by an employee. Note: The interior of a vehicle may not be used to provide shade unless the vehicle is air-conditioned and the air conditioner is on.

3. Employees shall be allowed and encouraged to take a preventative cool-down rest in the shade when they feel the need to do so to protect themselves from overheating. Such access to shade shall be permitted at all times. An individual employee who takes a preventative cool-down rest

    (A) shall be monitored and asked if he or she is experiencing symptoms of heat illness;
    (B) shall be encouraged to remain in the shade; and
    (C) shall not be ordered back to work until any signs or symptoms of heat illness have abated, but in no event less than 5 minutes in addition to the time needed to access the shade.

4. If an employee exhibits signs or reports symptoms of heat illness while taking a preventative cool-down rest or during a preventative cool-down rest period, the employer shall provide appropriate first aid or emergency response according to subsection titled “Emergency Response Procedures” of this section.

5. Daily, workers will be informed of the location of the shade structures and will be encouraged to take a five minute cool-down rest in the shade.

6. Shade structures will be relocated to follow along with the crew and they will be placed as close as practical to the employees, so that access to shade is provided at all times.

7. In situations where trees or other vegetation are used to provide shade (such as in orchards), the thickness and shape of the shaded area will be evaluated, before assuming that sufficient shadow is being cast to protect employees.

8. In situations where it is not safe or feasible to provide access to shade (e.g., during high winds), a note will be made of these unsafe or unfeasible conditions, and of the steps that will be taken to provide shade upon request.

9. For non-agricultural employers, in situations where it is not safe or feasible to provide shade, a note will be made of these unsafe or unfeasible conditions, and of the steps that will be taken to provide alternative cooling measures but with equivalent protection as shade.

Other means:

1. Employees will have access to the office or construction trailer, or other building with air conditioning.

2. Vehicles with air conditioning are also acceptable for the purpose of providing shade.

43.4 Access To A Preventative Recovery Period

- Every morning there will be a short meeting to remind workers about the importance of rest breaks and the location of shade.

43.5 Signs & Symptoms Of Heat Illness Illnesses

What Are the Symptoms of Heat-Related Illnesses? There are three different levels of heat illness. Heat cramps, heat exhaustion and heat stroke. Learn and know the different signs and symptoms. Remember that HEAT STROKE is DEADLY.

A. Heat Cramp symptoms can include:

- Severe, sometimes disabling, cramps that typically begin suddenly in the hands, calves, or feet
- Hard, tense muscles

B. Heat Exhaustion symtoms can include:

- Fatigue
- Nausea
- Headache
- Excessive thirst
- Muscle aches and cramps
- Weakness
- Confusion or anxiety
- Drenching sweats, often accompanied by cold, clammy skin
- Slowed or weakened heartbeat
- Dizziness
- Fainting
- Agitation

Heat exhaustion requires immediate attention or it can turn into Heat Stroke. Heat Stroke is DEADLY.

C. Heat Stroke

- Remember – the Number 1 Symptom: FIRE RED HOT DRY SKIN
- Heat stroke can occur suddenly, without any symptoms of heat exhaustion. If a person is experiencing any symptoms of heat exhaustion or heat stroke, GET MEDICAL CARE IMMEDIATELY. Any delay could be fatal. Seek emergency medical care for anyone who has been in the heat and who has the following symptoms:
    - Confusion, anxiety, or loss of consciousness
    - Very rapid or dramatically slowed heartbeat
    - Rapid rise in body temperature that reaches 104 degrees to 106 degrees F
    - Either drenching sweats accompanied by cold, clammy skin (which may indicate heat exhaustion) or a marked decrease in sweating accompanied by hot, flushed, dry skin (which may indicate heat stroke)
    - Convulsions
    - Any other heat-related symptom that is not alleviated by moving to a shady or air-conditioned area and administering fluids and salts
- Other Heat stroke symptoms can include:
    - Nausea and vomiting
    - Headache
    - Dizziness or vertigo
    - Fatigue
    - Hot, flushed, dry skin
    - Rapid heart rate
    - Decreased sweating

- Shortness of breath
- Decreased urination
- Blood in urine or stool
- Increased body temperature (104 degrees to 106 degrees F)
- Confusion, delirium, or loss of consciousness
- Convulsions

43.6 Procedure For Responding To Symptoms Of Possible Heat Illness

1. Each employee will be informed that emergency medical services will be provided should they become necessary.

2. Procedures for contacting emergency medical services are posted at the jobsite.

3. If necessary employees will be transported to a point where they can be reached by an emergency medical service provider. Procedures will be posted at the jobsite.

4. Clear and precise directions to the work site can and will be provided as needed to emergency responders. Directions will be posted at the jobsite.

43.7 Procedures To Reduce The Risk Of Heat-Related Illness And Respond To Symptoms Of Possible Heat Illness

This section will outline the Procedures To Reduce The Risk Of Heat-Related Illness And Respond To Symptoms Of Possible Heat Illness, And To Ensure That Emergency Medical Services Are Provided Without Delay

1. Prior to working outdoors, employees will be trained and be familiar with the Company procedures.

2. Every morning workers will be reminded about the worksite address and the location of the nearest emergency medical provider.

3. Working hours may be modified to work during the cooler hours of the day.

4. When a modified or shorter work shift is not possible, more water and rest breaks will be provided.

5. All employees will be alert to the presence of heat related symptoms.

1. Supervisors will carry cell phones or other means of communication, to ensure that

emergency services can be called, and check that these are functional at the worksite prior to each shift.

These procedures shall be in place to control the effects of environmental factors that can contribute to heat related illness. The most common environmental factors are air temperature, humidity, radiant heat sources and air circulation.

43.8 Training On Heat Related Illness

Employee training shall consists of the following topics and shall be provided to all supervisory and non-supervisory employees. Training is critical to know how to respond to possible heat related illness and to assist with obtaining emergency assistance without delay.

1. All employees will receive heat illness prevention training prior to working outdoors, particularly newly hired employees.
2. Supervisors will be trained prior to being assigned to supervise outdoor workers.
3. Training will be provided in a language and method that is understood by the employee.
4. On hot days, and during a heat wave, supervisors will hold short meetings to review this important information with workers.
5. All newly hired workers will be assigned a buddy or experienced coworker to ensure that they understood the training and follow the company procedures.
6. Refresher training will be provided as needed or when it is observed that employees are not following company procedures or are not drinking sufficient water.

Further Training shall consists of the following:

(A) The environmental and personal risk factors for heat illness;

(B) The employer's procedures for complying with the requirements of this standard;

(C) The importance of frequent consumption of small quantities of water, up to 4 cups per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties;

(D) The importance of acclimatization;

(E) The different types of heat illness and the common signs and symptoms of heat illness;

(F) The importance to employees of immediately reporting to the employer, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves, or in co-workers;

43.9 Definitions

"Acclimatization" means temporary adaptation of the body to work in the heat that occurs gradually when a person is exposed to it. Acclimatization peaks in most people within four to fourteen days of regular work for at least two hours per day in the heat.

"Heat Illness" means a serious medical condition resulting from the body's inability to cope with a particular heat load, and includes heat cramps, heat exhaustion, heat syncope and heat stroke.

"Environmental risk factors for heat illness" means working conditions that create the possibility that heat illness could occur, including air temperature, relative humidity, radiant heat from the sun and other sources, conductive heat sources such as the ground, air movement, workload severity and duration, protective clothing and personal protective equipment worn by employees.

"Personal risk factors for heat illness" means factors such as an individual's age, degree of acclimatization, health, water consumption, alcohol consumption, caffeine consumption, and use of prescription medications that affect the body's water retention or other physiological responses to heat.

"Preventative recovery period" means a period of time to recover from the heat in order to prevent heat illness.

"Shade" means blockage of direct sunlight. Canopies, umbrellas and other temporary structures or devices may be used to provide shade. One indicator that blockage is sufficient is when objects do not cast a shadow in the area of blocked sunlight. Shade is not adequate when heat in the area of shade defeats the purpose of shade, which is to allow the body to cool. For example, a car sitting in the sun does not provide acceptable shade to a person inside it, unless the car is running with air conditioning.

43.10 Training On Environmental And Personal Risk Factors

This section shall cover training on environmental and personal risk factors, the employer's procedures, consumption of water, importance of acclimatization, signs and symptoms of heat related illness, the employer's reporting procedures and procedures for contacting emergency medical services. The topics covered in this chapter shall cover the following:

(A) The environmental and personal risk factors for heat illness;

(B) The employer's procedures for complying with the requirements of this standard;

(C) The importance of frequent consumption of small quantities of water, up to 4 cups per hour, when the work environment is hot and employees are likely to be sweating more than usual in the performance of their duties;

(D) The importance of acclimatization;

(E) The different types of heat illness and the common signs and symptoms of heat illness;

(F) The importance to employees of immediately reporting to the employer, directly or through the employee's supervisor, symptoms or signs of heat illness in themselves, or in co-workers;

(G) The employer's procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided should they become necessary;

(H) The employer's procedures for contacting emergency medical services, and if necessary, for transporting employees to a point where they can be reached by an emergency medical service provider;

(I) The employer's procedures for ensuring that, in the event of emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders.

Physical factors that contribute to heat related illness should be taken into consideration before performing a task. The most common physical factors that can contribute to heat related illness are type of work, level of physical activity and duration, and clothing color, weight and breathe ability.

43.11 Supervisors Training

Supervisors will be trained in our company’s procedures to prevent heat illness, the company’s procedures when an employee exhibits symptoms of heat illness, and the company’s emergency response procedure as outline in this chapter for Heat Illness.

The Supervisors shall be trained as follows:

(A) The procedures the supervisor is to follow to implement the applicable procedures to prevent heat illness.
(B) The procedures the supervisor is to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures.

Supervisors with Alin Machining Company dba Power Plant Services will ensure personal factors that contribute to heat related illness are taken into consideration before assigning a task where there is the possibility of a heat-related illness occurring. The most common personal factors that can contribute to heat related illness are as followed; age, weight/fitness, drug/alcohol use, prior heat-related illness, etc.

43.12 Program / Procedures Availability

Our Company's Heat Illness Program and Procedures shall be in writing and shall be made available to employees.

Chapter 44 - Injury and Illness Prevention Program (IIPP) - CalOSHA

44.1 Person Who Is Responsible For The Program

The ‘Responsible Safety Officer’ or ‘RSO’, Safety Director as noted on the cover of this Safety Manual is the person who is in charge of the entire safety program for Alin Machining Company dba Power Plant Services . Safety Director as identified as the ‘RSO’ has the responsibility, authority, and overall accountability for the safety program.

In accordance with Alin Machining Company dba Power Plant Services 's safety and injury prevention program, Safety Director has been designated as the Responsible Safety Officer, and has responsibility and authority to do the following in the name of Alin Machining Company dba Power Plant Services :

1. Develop and implement rules of safe practices for each function within the company.
2. Develop and implement safe operating rules for use of electrical and mechanical equipment consistent with manufacturer's recommendations and specifications.
3. Develop and implement a system to encourage employees to report unsafe conditions immediately.
4. Conduct a thorough investigation of each accident, whether or not it results in an injury, to determine the cause of the accident and to prevent recurrence. In cases of a known injury accident, the investigation shall proceed only after consultation with Alin Machining Company dba Power Plant Services attorneys, who shall direct the investigation (the product of which investigation shall be considered the work product of the attorney).
5. Instruct supervisors in safety responsibilities.
6. Develop and implement a program of employee safety education.
7. Conduct scheduled and unscheduled inspections to identify and correct unsafe working conditions. Special attention shall be given to notice of serious concealed dangers.
8. Maintain records of training, periodic inspections, corrective actions and investigations as required by law. The Responsible Safety Officer for Alin Machining Company dba Power Plant Services is Safety Director. Alin Machining Company dba Power Plant Services will inform every person of the name of the Responsible Safety Officer and post his or her name and telephone/office number on the bulletin board where all other safety information is routinely maintained.

44.2 Employee Compliance

As the employer, Alin Machining Company dba Power Plant Services will ensure that every employee will comply with safe and healthy work practices by incentives, training, re-training programs and disciplinary programs.

44.2.a Training And Instruction

All workers, including managers and supervisors, shall have training and instruction on general and job-specific safety, health practices, identification and evaluation of workplace hazards. The training program is available to all employees in general safety and healthy work practices and for their specific job assignments. All training shall be documented.

Training and instruction shall be provided as follows:

- When the IIP Program is first established;
- To all new workers, except for construction workers who are provided training through a OSHA approved construction industry occupational safety and health training program;
- To all workers given new job assignments for which training has not previously provided;
- Whenever new substances, processes, procedures or equipment are introduced to the workplace and represent a new hazard;
- Whenever the company is made aware of a new or previously unrecognized hazard;
- To supervisors to familiarize them with the safety and health hazards to which workers under their immediate direction and control may be exposed; and
- To all workers with respect to hazards specific to each employee's job assignment.
- Workplace safety and health practices for all industries include, but are not limited to, the following:

    - Explanation of the company's IIP Program, emergency action plan and fire prevention plan, and measures for reporting any unsafe conditions, work practices, injuries and when additional instruction is needed.
    - Use of appropriate clothing, including gloves, footwear, and personal protective equipment.
    - Information about chemical hazards to which employees could be exposed and other hazard communication program information.
    - Availability of toilet, hand-washing and drinking water facilities.
    - Provisions for medical services and first aid including emergency procedures.
    - In addition, we provide specific instructions to all workers regarding hazards unique to their job assignment, to the extent that such information was not already covered in other training.

Alin Machining Company dba Power Plant Services maintains a safety and health program conforming to the best practices of our field. To be successful, such a program must embody proper attitudes towards injury and illness prevention on the part of supervisors and employees. It requires the cooperation in all safety and health matters, not only of the company and employee, but also between the employee and all co-workers. Only through such a cooperative effort can a safety program in the best

interest of all be established and preserved. Safety is no accident; think safety and the job will be safer.

For further details on our Employee Compliance programs refer to our 'OSHA Health and Safety Program.'

44.2.b Safety Contest Awards / Accident Free Workplace

To recognize the importance of safety, Alin Machining Company dba Power Plant Services may award a safety bonus based upon any or all of the following criteria:

1. No time-loss accidents.
2. Successfully passed periodic workplace safety inspections.
3. Active participation in Company safety discussions.
4. Active participation in safety suggestion program.
5. Other factors indicating a concern for safety.

The award and time period if and when implemented, will be announced in regular safety meetings or posted with the regular safety communications.

44.3 System Of Communication

Alin Machining Company dba Power Plant Services will ensure that there is an adequate system in place to communicate to affected employees on safety and health matters. We have safety meetings every month or sooner with all employees, if not all employees are able to be present then we will have another session to cover the same material for the employees who missed or were not able to attend the other meeting. We also have tool box talks or tailgate safety meetings every day or at the start of each new job or work procedure. We also have written communications and safety postings in the main office and on each jobsite. For further information on training and instruction, see the subsection immediately above.

44.4 Reporting Safety Hazards Anonymously

From time to time an employee may encounter a situation where he or she may feel threatened in reporting a safety hazard or unsafe working condition. If this situation arises the following are ways for an employee to report the situation anonymously. This is our policy on ''Anonymous Safety Hazard Reporting'':

- Please give your written safety hazard or safety suggestions to your supervisor at any time or during the safety meetings on the form named ''Employee's Safety Suggestion'' or form ''G'' in the packet of safety forms. This form is also available at the ''Employee Safety Suggestion Box''. Your name and any personal information can be left off of the form.

- This form - ‘‘Employee’s Safety Suggestion’’ can also be filled out and placed in the ‘‘Employee Safety Suggestion Box’’. Your name and any personal information can be left off of the form.

- An employee can also fill out this ‘‘Employee’s Safety Suggestion’’ form and can also be filled out and placed in the U.S. Mail and mailed to:

  Alin Machining Company dba Power Plant Services
  Attn: Safety Director
  “cadd”
  “cadd2”

  Your name and any personal information can be left off of the form.

44.5 Workplace Safety Inspections

In addition to the examination of records, work place safety inspections will occur daily or at a minimum of every 30 days, when conditions change, or when a new process or procedure is implemented. During these safety inspections all obtained information will be documented. Furthermore, there will be a review of the injury and illness prevention policy and Alin Machining Company dba Power Plant Services code of safe work practices.

44.6 Hazard Identification & Abatement

This written safety and health plan sets out a system for identifying workplace hazards and correcting them in a timely fashion. This process is implemented in order to correct any identified hazards from inspections, accident investigations, anonymous reporting, employee safety suggestions and system hazard identifications. Please review it carefully with your supervisor. Remember, safety is everyone's responsibility. Hazards must be corrected in order of priority based on severity in a expeditiously manner.

44.7 Training Documentation Requirements

Alin Machining Company dba Power Plant Services maintains records of employee training, hazard identification and abatement, and accident investigation. Records shall be kept to document safety and health training for each employee by name or other identifier, training date, types of training and training providers.

Chapter 45 - Cranes

45.1 Purpose

Overhead cranes, hoists, and rigging equipment are used by Alin Machining Company dba Power Plant Services employees for lifting and moving materials. In order to maintain a safe workplace for its employees and comply with new regulations, only qualified individuals shall operate these devices. This program outlines the procedures for safe operations and the training requirements regarding overhead cranes, hoists and rigging equipment.

45.2 Scope

This chapter applies to all Alin Machining Company dba Power Plant Services employees who operate overhead cranes, hoists, and rigging equipment in the scope of their job duties and assignments. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers Alin Machining Company dba Power Plant Services employees and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

45.3 Definitions

A/D director (Assembly/Disassembly director) means an individual who meets this subpart's requirements for an A/D director, irrespective of the person's formal job title or whether the person is non-management or management personnel.

Articulating crane means a crane whose boom consists of a series of folding, pin connected structural members, typically manipulated to extend or retract by power from hydraulic cylinders.

Assembly/Disassembly means the assembly and/or disassembly of equipment covered under this standard. With regard to tower cranes, "erecting and climbing" replaces the term "assembly," and "dismantling" replaces the term "disassembly." Regardless of whether the crane is initially erected to its full height or is climbed in stages, the process of increasing the height of the crane is an erection process.

Assist crane means a crane used to assist in assembling or disassembling a crane.

Attachments means any device that expands the range of tasks that can be done by the equipment. Examples include, but are not limited to: an auger, drill, magnet, pile-driver, and boom-attached personnel platform.

Audible signal means a signal made by a distinct sound or series of sounds. Examples include, but are not limited to, sounds made by a bell, horn, or whistle.

Blocking (also referred to as "cribbing") is wood or other material used to support

equipment or a component and distribute loads to the ground. It is typically used to support lattice boom sections during assembly/ disassembly and under outrigger and stabilizer floats.

Boatswain's chair means a single-point adjustable suspension scaffold consisting of a seat or sling (which may be incorporated into a full body harness) designed to support one employee in a sitting position.

Bogie means "travel bogie," which is defined below.

Boom (equipment other than tower crane) means an inclined spar, strut, or other long structural member which supports the upper hoisting tackle on a crane or derrick. Typically, the length and vertical angle of the boom can be varied to achieve increased height or height and reach when lifting loads. Booms can usually be grouped into general categories of hydraulically extendible, cantilevered type, latticed section, cable supported type or articulating type.

Boom (tower cranes): On tower cranes, if the "boom" (i.e., principal horizontal structure) is fixed, it is referred to as a jib; if it is moveable up and down, it is referred to as a boom.

Boom angle indicator means a device which measures the angle of the boom relative to horizontal.

Boom hoist limiting device includes boom hoist disengaging device, boom hoist shutoff, boom hoist disconnect, boom hoist hydraulic relief, boom hoist kick-outs, automatic boom stop device, or derricking limiter. This type of device disengages boom hoist power when the boom reaches a predetermined operating angle. It also sets brakes or closes valves to prevent the boom from lowering after power is disengaged.

Boom length indicator indicates the length of the permanent part of the boom (such as ruled markings on the boom) or, as in some computerized systems, the length of the boom with extensions/attachments.

Boom stop includes boom stops, (belly straps with struts/standoff), telescoping boom stops, attachment boom stops, and backstops. These devices restrict the boom from moving above a certain maximum angle and toppling over backward.

Boom suspension system means a system of pendants, running ropes, sheaves, and other hardware which supports the boom tip and controls the boom angle.

Builder means the builder/constructor of equipment.

Center of gravity: The center of gravity of any object is the point in the object around which its weight is evenly distributed. If you could put a support under that point, you could balance the object on the support.

Certified welder means a welder who meets nationally recognized certification requirements applicable to the task being performed.

Climbing means the process in which a tower crane is raised to a new working height, either by adding additional tower sections to the top of the crane (top climbing), or by a system in which the entire crane is raised inside the structure (inside climbing).

Come-a-long means a mechanical device typically consisting of a chain or cable attached at each end that is used to facilitate movement of materials through leverage.

Competent person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Controlled load lowering means lowering a load by means of a mechanical hoist drum device that allows a hoisted load to be lowered with maximum control using the gear train or hydraulic components of the hoist mechanism. Controlled load lowering requires the use of the hoist drive motor, rather than the load hoist brake, to lower the load.

Controlling entity means an employer that is a prime contractor, general contractor, construction manager or any other legal entity which has the overall responsibility for the construction of the project – its planning, quality and completion.

Counterweight means a weight used to supplement the weight of equipment in providing stability for lifting loads by counterbalancing those loads.

Crane/derrick includes all equipment covered by this subpart.

Crawler crane means equipment that has a type of base mounting which incorporates a continuous belt of sprocket driven track.

Crossover points means locations on a wire rope which is spooled on a drum where one layer of rope climbs up on and crosses over the previous layer. This takes place at each flange of the drum as the rope is spooled onto the drum, reaches the flange, and begins to wrap back in the opposite direction.

Dedicated channel means a line of communication assigned by the employer who controls the communication system to only one signal person and crane/derrick or to a coordinated group of cranes/derricks/signal person(s).

Dedicated pile-driver is a machine that is designed to function exclusively as a pile driver. These machines typically have the ability to both hoist the material that will be pile-driven and to pile-drive that material.

Dedicated spotter (power lines): To be considered a dedicated spotter, the requirements of § 1926.1428 (Signal person qualifications) must be met and his/her sole responsibility is to watch the separation between the power line and: the equipment, load line and load (including rigging and lifting accessories), and ensure through communication with the operator that the applicable minimum approach distance is not breached.

Directly under the load means a part or all of an employee is directly beneath the load.

Dismantling includes partial dismantling (such as dismantling to shorten a boom or substitute a different component).

Drum rotation indicator means a device on a crane or hoist which indicates in which direction and at what relative speed a particular hoist drum is turning.
Electrical contact occurs when a person, object, or equipment makes contact or comes in close proximity with an energized conductor or equipment that allows the passage of current.

Employer-made equipment means floating cranes/derricks designed and built by an employer for the employer's own use.

Encroachment is where any part of the crane, load line or load (including rigging and lifting accessories) breaches a minimum clearance distance that this subpart requires to be maintained from a power line.

Equipment means equipment covered by this subpart.

Equipment criteria means instructions, recommendations, limitations and specifications.

Fall protection equipment means guardrail systems, safety net systems, personal fall arrest systems, positioning device systems or fall restraint systems.

Fall restraint system means a fall protection system that prevents the user from falling any distance. The system is comprised of either a body belt or body harness, along with an anchorage, connectors and other necessary equipment. The other components typically include a lanyard, and may also include a lifeline and other devices.

Fall zone means the area (including but not limited to the area directly beneath the load) in which it is reasonably foreseeable that partially or completely suspended materials could fall in the event of an accident.

Flange points are points of contact between rope and drum flange where the rope changes layers.

Floating cranes/derricks means equipment designed by the manufacturer (or employer)

for marine use by permanent attachment to a barge, pontoons, vessel or other means of flotation.

For example means "one example, although there are others."

Free fall (of the load line) means that only the brake is used to regulate the descent of the load line (the drive mechanism is not used to drive the load down faster or retard its lowering).

Free surface effect is the uncontrolled transverse movement of liquids in compartments which reduce a vessel's transverse stability.

Hoist means a mechanical device for lifting and lowering loads by winding a line onto or off a drum.

Hoisting is the act of raising, lowering or otherwise moving a load in the air with equipment covered by this standard. As used in this standard, "hoisting" can be done by means other than wire rope/ hoist drum equipment.

Include/including means "including, but not limited to."

Insulating link/device means an insulating device listed, labeled, or accepted by a Nationally Recognized Testing Laboratory in accordance with 29 CFR 1910.7.

Jib stop (also referred to as a jib backstop), is the same type of device as a boom stop but is for a fixed or luffing jib.

Land crane/derrick is equipment not originally designed by the manufacturer for marine use by permanent attachment to barges, pontoons, vessels, or other means of floatation.

List means the angle of inclination about the longitudinal axis of a barge, pontoons, vessel or other means of floatation.

Load refers to the object(s) being hoisted and/or the weight of the object(s); both uses refer to the object(s) and the load-attaching equipment, such as, the load block, ropes, slings, shackles, and any other ancillary attachment.

Load moment (or rated capacity) indicator means a system which aids the equipment operator by sensing (directly or indirectly) the overturning moment on the equipment, i.e., load multiplied by radius. It compares this lifting condition to the equipment's rated capacity, and indicates to the operator the percentage of capacity at which the equipment is working. Lights, bells, or buzzers may be incorporated as a warning of an approaching overload condition.

Load moment (or rated capacity) limiter means a system which aids the equipment

operator by sensing (directly or indirectly) the overturning moment on the equipment, i.e., load multiplied by radius. It compares this lifting condition to the equipment's rated capacity, and when the rated capacity is reached, it shuts off power to those equipment functions which can increase the severity of loading on the equipment, e.g., hoisting, telescoping out, or luffing out. Typically, those functions which decrease the severity of loading on the equipment remain operational, e.g., lowering, telescoping in, or luffing in.

Locomotive crane means a crane mounted on a base or car equipped for travel on a railroad track.

Luffing jib limiting device is similar to a boom hoist limiting device, except that it limits the movement of the luffing jib.

Marine hoisted personnel transfer device means a device, such as a "transfer net," that is designed to protect the employees being hoisted during a marine transfer and to facilitate rapid entry into and exit from the device. Such devices do not include boatswain's chairs when hoisted by equipment covered by this standard.

Marine worksite means a construction worksite located in, on or above the water.

Mobile crane means a lifting device incorporating a cable suspended latticed boom or hydraulic telescopic boom designed to be moved between operating locations by transport over the road.

Moving point-to-point means the times during which an employee is in the process of going to or from a work station.

Multi-purpose machine means a machine that is designed to be configured in various ways, at least one of which allows it to hoist (by means of a winch or hook) and horizontally move a suspended load. For example, a machine that can rotate and can be configured with removable forks/tongs (for use as a forklift) or with a winch pack, jib (with a hook at the end) or jib used in conjunction with a winch. When configured with the forks/tongs, it is not covered by this subpart. When configured with a winch pack, jib (with a hook at the end) or jib used in conjunction with a winch, it is covered by this subpart.

Nationally recognized accrediting agency is an organization that, due to its independence and expertise, is widely recognized as competent to accredit testing organizations. Examples of such accrediting agencies include, but are not limited to, the National Commission for Certifying Agencies and the American National Standards Institute.

Nonconductive means that, because of the nature and condition of the materials used, and the conditions of use (including environmental conditions and condition of the material), the object in question has the property of not becoming energized (that is, it has high dielectric properties offering a high resistance to the passage of current under

the conditions of use).

Operational aids are devices that assist the operator in the safe operation of the crane by providing information or automatically taking control of a crane function. These include, but are not limited to, the devices listed in § 1926.1416 ("listed operational aids").

Operational controls means levers, switches, pedals and other devices for controlling equipment operation.

Operator means a person who is operating the equipment.

Overhead and gantry cranes includes overhead/bridge cranes, semigantry, cantilever gantry, wall cranes, storage bridge cranes, launching gantry cranes, and similar equipment, irrespective of whether it travels on tracks, wheels, or other means.

Paragraph refers to a paragraph in the same section of this subpart that the word "paragraph" is used, unless otherwise specified.

Pendants includes both wire and bar types. Wire type: a fixed length of wire rope with mechanical fittings at both ends for pinning segments of wire rope together. Bar type: instead of wire rope, a bar is used. Pendants are typically used in a latticed boom crane system to easily change the length of the boom suspension system without completely changing the rope on the drum when the boom length is increased or decreased.

Personal fall arrest system means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body harness and may include a lanyard, deceleration device, lifeline, or suitable combination of these.

Portal crane is a type of crane consisting of a rotating upperstructure, hoist machinery, and boom mounted on top of a structural gantry which may be fixed in one location or have travel capability. The gantry legs or columns usually have portal openings in between to allow passage of traffic beneath the gantry.

Power lines means electric transmission and distribution lines.

Procedures include, but are not limited to: instructions, diagrams, recommendations, warnings, specifications, protocols and limitations.

Proximity alarm is a device that provides a warning of proximity to a power line and that has been listed, labeled, or accepted by a Nationally Recognized Testing Laboratory in accordance with 29 CFR 1910.7.

Qualified evaluator (not a third party) means a person employed by the signal person's employer who has demonstrated that he/she is competent in accurately assessing whether individuals meet the Qualification Requirements in this subpart for a signal

person.

Qualified evaluator (third party) means an entity that, due to its independence and expertise, has demonstrated that it is competent in accurately assessing whether individuals meet the Qualification Requirements in this subpart for a signal person.

Qualified person means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrated the ability to solve/resolve problems relating to the subject matter, the work, or the project.

Qualified rigger is a rigger who meets the criteria for a qualified person.

Range control limit device is a device that can be set by an equipment operator to limit movement of the boom or jib tip to a plane or multiple planes.

Range control warning device is a device that can be set by an equipment operator to warn that the boom or jib tip is at a plane or multiple planes.

Rated capacity means the maximum working load permitted by the manufacturer under specified working conditions. Such working conditions typically include a specific combination of factors such as equipment configuration, radii, boom length, and other parameters of use.

Rated capacity indicator: See load moment indicator.

Rated capacity limiter: See load moment limiter.

Repetitive pickup points refer to, when operating on a short cycle operation, the rope being used on a single layer and being spooled repetitively over a short portion of the drum.

Running wire rope means a wire rope that moves over sheaves or drums.

Runway means a firm, level surface designed, prepared and designated as a path of travel for the weight and configuration of the crane being used to lift and travel with the crane suspended platform. An existing surface may be used as long as it meets these criteria.

Section means a section of this subpart, unless otherwise specified.

Sideboom crane means a track-type or wheel-type tractor having a boom mounted on the side of the tractor, used for lifting, lowering or transporting a load suspended on the load hook. The boom or hook can be lifted or lowered in a vertical direction only.

Special hazard warnings means warnings of site-specific hazards (for example,

proximity of power lines).

Stability (flotation device) means the tendency of a barge, pontoons, vessel or other means of flotation to return to an upright position after having been inclined by an external force.

Standard Method means the protocol in Appendix A of this subpart for hand signals.

Such as means "such as, but not limited to."

Superstructure: See Upperworks.

Tagline means a rope (usually fiber) attached to a lifted load for purposes of controlling load spinning and pendular motions or used to stabilize a bucket or magnet during material handling operations.

Tender means an individual responsible for monitoring and communicating with a diver.

Tilt up or tilt down operation means raising/lowering a load from the horizontal to vertical or vertical to horizontal.

Tower crane is a type of lifting structure which utilizes a vertical mast or tower to support a working boom (jib) in an elevated position. Loads are suspended from the working boom. While the working boom may be of the fixed type (horizontal or angled) or have luffing capability, it can always rotate to swing loads, either by rotating on the top of the tower (top slewing) or by the rotation of the tower (bottom slewing). The tower base may be fixed in one location or ballasted and moveable between locations. Mobile cranes that are configured with luffing jib and/or tower attachments are not considered tower cranes under this section.

Travel bogie (tower cranes) is an assembly of two or more axles arranged to permit vertical wheel displacement and equalize the loading on the wheels.

Trim means angle of inclination about the transverse axis of a barge, pontoons, vessel or other means of floatation.

Two blocking means a condition in which a component that is uppermost on the hoist line such as the load block, hook block, overhaul ball, or similar component, comes in contact with the boom tip, fixed upper block or similar component. This binds the system and continued application of power can cause failure of the hoist rope or other component.

Unavailable procedures means procedures that are no longer available from the manufacturer, or have never been available, from the manufacturer.

Upperstructure: See Upperworks.

Upperworks means the revolving frame of equipment on which the operating machinery (and many cases the engine) are mounted along with the operator's cab. The counterweight is typically supported on the rear of the upperstructure and the boom or other front end attachment is mounted on the front.

Up to means "up to and including."

Wire rope means a flexible rope constructed by laying steel wires into various patterns of multi-wired strands around a core system to produce a helically wound rope.

45.4 What is Not Defined as a Crane

- Forklifts, Track Loaders, Excavators (Track Hoe/Backhoe), Concrete Pump Trucks w/boom
- Power Shovels, Digger Derricks, Tow Trucks, Vehicle Mounted Work Platforms
- Self-propelled Elevating Work Platforms, Stacker Cranes, Mechanic's Trucks With Hoisting Devices
- Come-A-Longs and Chain Falls, Gin Poles For Communication Tower Work
- Tree Trimming and tree removal work
- Anchor handling with a vessel or barge using an affixed A-frame

45.5 Key Responsibilities

45.5.a Managers and Supervisors

- Are responsible to ensure that employees and contractors are trained and qualified on the proper operations and have been trained in crane and hoist safety.
- Shall ensure modifications or additions that may affect the capacity or safe operation of the equipment must not be made without written approval from the manufacturer or approval from a registered professional engineer. The manufacturer must approve all modifications/additions in writing. A registered professional engineer must be qualified with respect to the equipment involved and must ensure the original safety factor of the equipment is not reduced.
- Shall ensure all manufacturer procedures applicable to the operational function of equipment must be complied with. All manufacturer procedures applicable to the operational functions of equipment, including its use with attachments, must be complied with.
- Are responsible to see that all provisions of this program are followed and that crane inspections are performed and the equipment is in safe operating condition.
- Are responsible for identifying hazard areas by marking the boundaries of the crane swing radius with warning lines, railings or similar barriers or other safety

measures to be used when the equipment has the potential to strike and injure an employee or pinch/crush an employee against any other object.

45.5.b Employees

- Employee operators are responsible to follow the requirements of this program and report any damage or needed repairs immediately to their supervisor.
- Operators must meet the physical qualifications, pass a physical, a written examination, understand and be able to use a load chart as well as calculate loads for the crane type operated.
- Employees designated as crane operators are responsible for the entire lift. In addition, crane operators are responsible to:
    - Make the required inspections,
    - Ensure that the crane is maintained,
    - Ensure that all personnel working in the area around the crane are kept clear of all hazards related to crane operations.
    - Determine the weights, and correct rigging required for loads to be lifted.

45.6 Crane Operator Certification/Qualification

Operators must be determined to be qualified before they are permitted to operate any crane. Only those employees qualified by training or experience shall be allowed to operate equipment and machinery.

Within 4 years of November 8th 2012 Alin Machining Company dba Power Plant Services must ensure operators must be qualified/certified by one of the following methods:

Certification by an Accredited Crane Operator Testing Organization

- Accredited by a nationally recognized accrediting agency
- Certification is portable
- Valid for five years
- Program must be reviewed by a nationally recognized accrediting agency every three years

Qualification by an Audited Employer Program

- Developed or approved by an auditor certified by an accredited crane operator testing organization
- Auditor is not an employee of Alin Machining Company dba Power Plant Services
- Tests should be administered per nationally recognized test administration standards
- Program shall be audited within the first three months, then once every three years
- Qualification is not portable and valid for five years

Qualification by the U.S. Military

Licensing by a Government Entity

- Must meet or exceed requirements of the OSHA standard
- Valid only within the jurisdiction of the government entity
- Valid for time specified by the government entity, but no longer than five years

45.6.a Certification/Qualification Criteria

Pass written test that include:

- Controls and operational performance
- Ability to calculate the load/capacity
- Procedures for power line contact
- Site preparation
- Ability to read manuals/charts relevant to the equipment being operated

Pass practical examination

Ability to perform a pre-shift inspection

Operational and maneuvering skills

Application of load chart information

Application of safe shut down and securing procedures

45.6.b Administrative Criteria

- Alin Machining Company dba Power Plant Services must revoke operator's certification if they have reason to believe the employee is not qualified to operate.
- The current training records must be on file during the operator's employment.

45.7 Rigger Qualifications

Riggers assemble, rig, hook and unhook, guide, and disassemble crane equipment and materials. Riggers must meet the requirements of a qualified person. A qualified rigger is a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, successfully demonstrates the ability to resolve problems relating to the subject matter, the work, or the project.

Riggers must be trained in all the requirements of the regulations that apply to their respective roles. For example, riggers must be trained and qualified to perform assembly and disassembly operations when their job tasks require them to perform such operations.

45.8 Signal Person Qualification

All signal persons must be qualified to give signals. In order to be qualified, the signal person must:

- Know and understand the type of signals used; if hand signals are used, the signal person must know and understand the Standard Method for hand signals.
- Be competent in the application of the type of signals used.
- Have a basic understanding of equipment operation and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisting loads.
- Know and understand the regulatory requirements for signals (29 CFR 1926.1419 to 1926.1422) and the signal person qualifications (29 CFR 1926.1428).
- Demonstrate that he or she meets the qualification requirements for signalers through an oral or written test and through a practical test.

45.8.a Signal Person Evaluations

The qualification of signal persons must be evaluated and documented by either:

- A third party qualified evaluator, *or*
- The employer's qualified evaluator (i.e., an employee competent in accurately assessing whether the signaler has met the qualification requirements)

45.8.b Signal Person Refresher Training

If subsequent actions by the signal person indicate that the individual does not meet the Qualification Requirements, Alin Machining Company dba Power Plant Services must not allow the individual to continue working as a signal person until retraining is provided and a reassessment is made that confirms that the individual meets the Qualification Requirements.

45.8.c Documentation of Signaler Qualification

Alin Machining Company dba Power Plant Services must make the documentation for whichever option is used available at the site while the signal person is employed by Alin Machining Company dba Power Plant Services . The documentation must specify each type of signaling (e.g. hand signals, radio signals) for which the signal person meets the requirements of the rule.

45.9 Authority to Stop Operations

The operator has the authority to stop and refuse to handle loads whenever there is a safety concern. Whenever there is a safety concern, the operator must have the authority to stop and refuse to handle loads until a qualified person has determined that safety has been assured.

45.10 Ground Conditions

Cranes must not be used unless ground conditions are able to support the equipment and any supporting materials per the manufacturer's specifications. Alin Machining

Company dba Power Plant Services (controlling entity) will ensure that equipment must not be assembled or used unless ground conditions are firm, drained and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met.

Alin Machining Company dba Power Plant Services will locate all hazards that are identified in all available documents and inform the crane user of them.

45.11 Overhead Power Lines in Crane Operations

- No part of crane, line or load may be able to reach within 20 feet of a power line during setup. Exceptions: de-energized and grounded power lines or use of a dedicated spotter or proximity alarms.
- Assembly/disassembly below power lines is prohibited, unless line is de-energized and grounded.
- All power lines are presumed to be energized unless confirmed to be de-energized by the utility owner/operator and visibly grounded at the worksite.
- All power lines presumed to be un-insulated.
- Employees shall understand limitations of insulating links, proximity alarms and range control devices, if used.
- Dedicated spotters shall be trained.
- There must be at least one electrocution hazard warning sticker conspicuously placed in the cab of the crane.

45.12 Power Lines

A pre-operation hazard assessment will be performed to identify the work zone and determine if any part of the equipment could reach closer than 20 feet to a power line. The work zone shall be identified by demarcating boundaries such as flag and range limiting devices, or defining the work zone as 360 degrees around the equipment up to the maximum working radius. The hazard assessment must determine if any part of the equipment could get closer than 20 feet to a power line.

Measures must be taken if it is determined that any part of the equipment, load line or load could get closer than 20 feet to a power line. If it is determined that any part of the equipment, load line or load could get closer than 20 feet to a power line then at least one of the following measures must be taken:

- Ensure the power lines have been deenergized and visibly grounded
- Ensure no part of the equipment, load line or load gets closer than 20 feet to the power line
- Determine the line's voltage and minimum approach distance permitted in Table A (below).

Voltage (kV)	Minimum Clearance Distance(feet)
Up to 50	10
50 to 200	15
200 to 350	20
350 to 500	25
500 to 750	35
750 to 1000	45
Over 1000	As established by the line owner

Some special requirements for working below power lines include training of operators and crew on:

- Procedures to follow after power line contact
- Danger of a potential energized zone
- Operator's emergency procedures
- Safest means to evacuate equipment
- Need for employees to avoid approach
- Safe clearance from power lines

45.13 Required Equipment

45.13.a Mandatory Safety Devices Equipment

All safety devices must be in proper working order before operation begins. Safety devices are required to be on all equipment and must be in proper working order before operations begin. If any of the devices are not in proper working order the equipment must be taken out of service and operations must not resume until the device is working properly again. The following is mandatory equipment:

- Crane level indicator
- Boom stops
- Jib stops
- Locks for foot pedal brakes
- Horns
- Integral check valves for hydraulic outriggers
- Rail clamps and stops for equipment on rails

The following required equipment must be in service except where specified temporary alternative measures are met:

- Boom hoist limiting device
- Luffing jib limiting device
- Anti two-block device (cranes manufactured after 2/28/92) Exception: lattice booms used for dragline, clam shell, scrap magnet, drop ball, marine operations and pile driving work

- Boom angle or radius indicator
- Jib angle indicator (luffing jibs)
- Boom length indicator (telescopic booms)
- Load weighing devices (load moment indicators, rated capacity indicators or rated capacity limiters –cranes manufactured after 3/29/03
- Outrigger position indicators (cranes manufactured after 1/1/08)
- Hoist drum rotation indicator (if drum is not visible to operator)

An accessible fire extinguisher of 5BC rating, or higher, shall be available at all operator stations or cabs of equipment.

Procedures applicable to the operation of the equipment must be readily available in the cab at all times. The operator shall have access to procedures applicable to the operation of the equipment. Procedures include rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions and operator's manual.

If the crane has more than one hoisting unit, each hoist shall have its rated load marked on it or its load block and this marking shall be clearly legible from the ground floor.

Whenever internal combustion engine powered equipment exhausts in enclosed spaces, test shall be made and recorded to see that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres.

45.14 Material Hoists, Personnel Hoists and Elevators

45.14.a General Requirements

Hoist Specifications

All material hoists must conform to the requirements of ANSI/ASME A10.5-1969, Safety Requirements for Material Hoists. Note: ANSI/ASME have updated this standard; however, OSHA allows Alin Machining Company dba Power Plant Services to follow the updated consensus standard without penalty when it provides equal or greater employee protection.

Alin Machining Company dba Power Plant Services must comply with the manufacturer's specifications and limitations for the operation of all hoists and elevators. Where manufacturer's specifications are not available, a professional engineer competent in the field must determine the limitations assigned to the equipment.

Rated load capacities, recommended operating speeds, and special hazard warnings or instructions must be posted on cars and platforms.

Wire Rope

Hoisting ropes must be installed in accordance with the wire rope manufacturer's recommendations. Wire rope must be removed from service when any of the following conditions exists:

- In hoisting ropes, six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay
- Abrasion, scrubbing, flattening, or peening, causing loss of more than one-third of the original diameter of the outside wires
- Evidence of any heat damage resulting from a torch or any damage caused by contact with electrical wires
- Reduction from nominal diameter of more than three sixty-fourths in. for diameters up to and including three-fourths in.; one-sixteenth in. for diameters seven-eighths to 11/8.in.; and three thirty-seconds in. for diameters one and one-quarter in. to one and one-half.in.

45.15 Prohibited Operations

The installation of live booms on hoists and the use of endless belt-type man lifts are prohibited.

The manufacturer's instructions, procedures and prohibitions must be followed and complied with when assembling and/or disassembling equipment.

45.15.a Material Hoists

Operating rules must be established and posted at the operator's station of the hoist. Such rules must include signal system and allowable line speed for various loads. Rules and notices must be posted on the car frame or crosshead in a conspicuous location, including the statement "No Riders Allowed." No person must be allowed to ride on material hoists except for the purposes of inspection and maintenance.

45.16 Protective Gates, Bars, and Coverings

All entrances of the hoistways must be protected by substantial gates or bars, which must guard the full width of the landing entrance. All hoistway entrance bars and gates must be painted with diagonal contrasting colors, such as black and yellow stripes.

Bars must be not less than 2- by 4-in. wooden bars or the equivalent, located 2 ft. from the hoistway line. Bars must be located neither less than 36 in. nor more than 42 in. above the floor. Gates or bars protecting the entrances to hoistways must be equipped with a latching device.

Overhead protective covering of 2-in. planking, 3/4-inch plywood, or other solid material of equivalent strength must be provided on the top of every material hoist cage or platform.

The operator's station of a hoisting machine must be provided with overhead protection equivalent to tight planking not less than 2 in. thick. The support for the overhead protection must be of equal strength.

Hoist Towers
All material hoist towers must be designed by a licensed professional engineer. Hoist towers may be used with or without an enclosure on all sides. Whichever alternative is chosen, the following applicable conditions must be met:

- When a hoist tower is enclosed, it must be enclosed on all sides for its entire height with a screen enclosure of 1/2-in. mesh, No. 18 U.S. gauge wire or equivalent, except for landing access.
- When a hoist tower is not enclosed, the hoist platform or car must be totally enclosed (caged) on all sides for the full height between the floor and the overhead protective covering with 1/2-in. mesh of No. 14 U.S. gauge wire or equivalent. The hoist platform enclosure must include the required gates for loading and unloading. A 6-ft-high enclosure must be provided on the unused sides of the hoist tower at ground level.

Car-arresting devices must be installed to function in case of rope failure.

45.16.a Personnel Hoists

Specifications
All personnel hoists used by employees must be constructed of materials and components that meet the specifications for materials, construction, safety devices, assembly, and structural integrity as stated in the ANSI/ASME A10.4-1963, Safety Requirements for Workmen's Hoists. ANSI/ASME have updated this standard; however, OSHA allows Alin Machining Company dba Power Plant Services to follow the updated consensus standard without penalty when it provides equal or greater employee protection.

Hoist Towers
Hoist towers outside the structure must be enclosed for the full height on the side or sides used for entrance and exit to the structure. At the lowest landing, the enclosure on the sides not used for exit or entrance to the structure must be enclosed to a height of at least 10 ft. Other sides of the tower adjacent to floors or scaffold platforms must be enclosed to a height of 10 ft. above the level of such floors or scaffolds. Towers inside of structures must be enclosed on all four sides throughout the full height. Towers must be anchored to the structure at intervals not exceeding 25 ft. In addition to tie-ins, a series of guys must be installed. Where tie-ins are not practical, the tower must be anchored by means of guys made of wire rope at least one-half in. in diameter, securely fastened to anchorage to ensure stability.

Hoistway Doors and Gates
Hoistway doors or gates must be not less than 6 ft. 6 in. high and must be provided with mechanical locks that cannot be operated from the landing side, and must be

accessible only to persons on the car. A door or gate must be provided at each entrance to the car, which must protect the full width and height of the car entrance. Doors or gates must be provided with electrical contacts that do not allow movement of the hoist when door or gate is open.

Cars
Cars must be permanently enclosed on all sides and the top, except sides used for entrance and exit that have car gates or doors. Safeties must be capable of stopping and holding the car and rated load when traveling at governor tripping speed. Cars must be provided with a capacity and data plate secured in a conspicuous place on the car or crosshead. An emergency stop switch must be provided in the car and marked "Stop."

Covering
Overhead protective covering of 2-in. planking, 3/4-in. plywood, or other solid material or equivalent strength must be provided on the top of every personnel hoist.

Engine Prohibition
Internal combustion engines must not be permitted for direct drive.

Stopping Device
Normal and final terminal stopping devices must be provided.

Ropes
The minimum number of hoisting ropes used must be three for traction hoists and two for drum-type hoists. The minimum diameter of hoisting and counterweight wire ropes must be1/2 in. Following are the minimum safety factors for suspension wire ropes:

Rope speed (feet per minute)	Minimum factor of safety
50	7.60
75	7.75
100	7.95
125	8.10
150	8.25
600	10.70

See the chart at 29 CFR 1926.552(c)(14) for additional safety factors.

Personnel Hoists Used in Bridge Tower Construction
Such hoists must be approved by a registered professional engineer and erected under the supervision of a qualified engineer competent in this field.

When a hoist tower is not enclosed, the hoist platform or car must be totally enclosed (caged) on all sides for the full height between the floor and the overhead protective covering with 3/4-in. mesh of No. 14 U.S. gauge wire or equivalent. The hoist platform enclosure must include the required gates for loading and unloading.

These hoists must be inspected and maintained on a weekly basis. Whenever the hoisting equipment is exposed to winds exceeding 35 miles per hour, it must be inspected and put in operable condition before reuse.

Wire rope must be taken out of service when any of the following conditions exist:

- In running ropes, six randomly distributed broken wires in one lay or three broken wires in one strand in one lay
- Wear of one-third the original diameter of outside individual wires
- Kinking, crushing, bird caging, or any other damage resulting in distortion of the rope structure
- Evidence of any heat damage from any cause
- Reductions from nominal diameter of more than three sixty-fourths in. for diameters to and including three-fourths in., one-sixteenth in. for diameters seven-eights in. to 11/8 in. inclusive, three thirty-seconds in. for diameters 11/4 to 11/2 in. inclusive
- In standing ropes, more than two broken wires in one lay in sections beyond end connections or more than one broken wire at an end connection.

Elevators

Permanent elevators under the care and custody of Alin Machining Company dba Power Plant Services and used by employees for work covered by this Act must comply with the requirements of ANSI/ASME A17.1-1965 with addenda A17.1a-1967, A17.1b-1968, A17.1c-1969, A17.1d-1970, and inspected in accordance with A17.2-1960 with addenda A17.2a-1965 and A17.2b-1967. ANSI/ASME have updated these standards; however, OSHA allows Alin Machining Company dba Power Plant Services to follow the updated consensus standards without penalty when they provide equal or greater employee protection.

45.17 Base-Mounted Dum Hoists

45.17.a Specifications

All base-mounted drum hoists in use must meet the applicable requirements for design, construction, installation, testing, inspection, maintenance, and operations, as prescribed by the manufacturer.

Alin Machining Company dba Power Plant Services must ensure that exposed moving parts such as gears, projecting screws, setscrews, chain, cables, chain sprockets, and reciprocating or rotating parts that constitute a hazard are guarded.

All controls used during the normal operation cycle must be located within easy reach of the operator's station.

45.17.b Electric Motor-Operated Hoists

Electric motor-operated hoists must be provided with:

- A device to disconnect all motors from the line upon power failure and not permit any motor to be restarted until the controller handle is brought to the "off" position
- Where applicable, an over-speed preventive device
- A means whereby remotely operated hoists stop when any control is ineffective

45.18 Overhead Hoists

All overhead hoists in use must meet the applicable requirements for construction, design, installation, testing, inspection, maintenance, and operation, as prescribed by the manufacturer.

The safe working load of the overhead hoist, as determined by the manufacturer, must be indicated on the hoist, and this safe working load must not be exceeded.

The supporting structure to which the hoist is attached must have a safe working load equal to that of the hoist. The support must be arranged so as to provide for free movement of the hoist and must not restrict the hoist from lining itself up with the load.

The hoist must be installed only in locations that will permit the operator to stand clear of the load at all times.

Air hoists must be connected to an air supply of sufficient capacity and pressure to safely operate the hoist. All air hoses supplying air must be positively connected to prevent disconnected during use.

45.19 Conveyors

45.19.a Specifications

All conveyors in use must meet the applicable requirements for design, construction, inspection, testing, maintenance, and operation, as prescribed in the ANSI/ASME B20.1-1957, Safety Code for Conveyors, Cableways, and Related Equipment. ANSI/ASME have updated this standard; however, OSHA allows Alin Machining Company dba Power Plant Services to follow updated consensus standards without penalty when they provide equal or greater employee protection.

Means for stopping the motor or engine must be provided at the operator's station. Conveyor systems must be equipped with an audible warning signal to be sounded immediately before starting up the conveyor. If the operator's station is at a remote point, similar provisions for stopping the motor or engine must be provided at the motor or engine location.

Emergency stop switches must be arranged so that the conveyor cannot be started again until the actuating stop switch has been reset to running or "on" position.

45.19.b Guards

Screw conveyors must be guarded to prevent employee contact with turning flights. Where a conveyor passes over work areas, aisles, or thoroughfares, suitable guards must be provided to protect employees required to work below the conveyors.

45.19.c Marking and Lockout/Tagout

All crossovers, aisles, and passageways must be conspicuously marked by suitable signs (see 29 CFR 1926.200). Conveyors must be locked out, or otherwise rendered inoperable, and tagged out with a "Do Not Operate" tag during repairs and when operation is hazardous to employees performing maintenance work.

45.20 Rigging Practices

Major incidents involving rigging operations are caused by:

- the failure of equipment from overloading, incorrect assembly or disassembly, or lack of proper maintenance;
- dropped or falling loads, usually as a result of the misuse or malfunction of hoisting lines and rigging; and
- lack of safeguards, especially in proximity to high-voltage lines. Training is key in minimizing the risk of incidents

An important element of the Alin Machining Company dba Power Plant Services material handling program is proper rigging practices. Rigging of loads must be done with relative precision and performed by trained, experienced personnel. To ensure that safe practices are followed, a competent and qualified person must direct the assembly/disassembly of equipment. The assembly/disassembly of equipment must be directed by a competent and qualified person to see that:

- Rigging equipment that has the necessary capacity to do the job is available.
- Rigging equipment is in a safe working condition.
- Loads are rigged correctly.
- Safety of the rigging crew and other potentially exposed personnel is maintained.

45.20.a Rigging and Sling Inspections and Safety Requirements

- Inspections will be conducted by a qualified/competent person.
- Only select rigging equipment that is in good condition.
- All rigging equipment shall be inspected annually; defective equipment is to be removed from service and destroyed to prevent inadvertent reuse.
- The load capacity limits shall be stamped or affixed to all rigging components.
- All devices (e.g. slings, fastenings, hooks, etc.) shall be visually inspected prior to use and removed from service for being defective or damaged, and for any of the following conditions:
    - Nylon slings with:
        - Abnormal wear.

        - Torn stitching.
        - Broken or cut fibers.
        - Discoloration or deterioration.
    - Wire rope slings (see Wire Rope Inspection) with:
        - Kinking, crushing, bird caging, or other distortions.
        - Evidence of heat damage.
        - Cracks, deformation, or worn end attachments.
        - Six randomly broken wires in a single rope lay.
        - Three broken wires in one strand of rope.
        - Hooks opened more than 15% at the throat.
        - Hooks twisted sideways more than 10 degrees from the plane of the unbent hook.
    - Alloy steel chain slings with:
        - Cracked, bent, or elongated links or components.
        - Cracked hooks.
        - Shackles, eye bolts, turnbuckles, or other components that are damaged or deformed.

45.20.b Rigging a Load

- Determine the weight of the load - do not guess.
- Determine the proper size for slings and components.
- Do not use manila rope for rigging.
- Ensure that shackle pins and shouldered eyebolts are installed in accordance with the manufacturer's recommendations.
- Ensure that ordinary (shoulderless) eyebolts are threaded in at least 1.5 times the bolt diameter.
- Use safety hoist rings (swivel eyes) as a preferred substitute for eye bolts wherever possible.
- Pad sharp edges to protect slings.
- Remember that machinery foundations or angle-iron edges may not feel sharp to the touch but could cut into rigging when under several tons of load.
- Wood, tire rubber, or other pliable materials may be suitable for padding.
- Do not use slings, eyebolts, shackles, or hooks that have been cut, welded, or brazed.
- Install wire-rope clips with the base only on the live end and the U-bolt only on the dead end.
- Follow the manufacturer's recommendations for the spacing for each specific wire size.
- Determine the center of gravity and balance the load before moving it.
- Initially lift the load only a few inches to test the rigging and balance.

45.20.c Sling Guidelines

Slings are made of numerous types of material, construction, combinations and various types of hitches. The sling manufacturer will be consulted when a questions arises concerning sling rating, use, care and/or inspections.

Slings will be inspected and tested in accordance with the Wire Rope Technical Board, Web Sling Association, and National Association of Chain Manufacturers, whichever is applicable.

Visually check all slings prior to use. A Qualified Operator, Inspector or Rigger will perform these inspections.

Sling inspection is based on the following:

- Sling usage.
- Severity of service conditions.
- Type of lifts being made.
- Experience based on service life of slings used in similar applications.

Wrought iron chains in constant use shall be annealed or normalized at intervals not exceeding six months when recommended by the manufacturer. The chain manufacturer shall be consulted for recommended procedures for annealing or normalizing. Annealing and normalizing will be done in accordance with the manufacturer's specified procedures, no other procedure will be utilized. Alloy chains shall never be annealed.

45.20.d Safe Operating Practices

Whenever any sling is used, the following practices shall be observed:

- Slings that are damaged or defective shall not be used.
- Slings shall not be shortened with knots or bolts or other makeshift devices.
- Sling legs shall not be kinked.
- Slings shall not be loaded in excess of their rated capacities.
- Slings used in a basket hitch shall have the loads balanced to prevent slippage.
- Slings shall be securely attached to their loads.
- Sligns shall be set to avoid slippage.
- Slings shall be padded or protected from the sharp edges of their loads.
- Suspended loads shall be kept clear of all obstructions.
- All employees shall be kept clear of loads about to be lifted and of suspended loads.
- Hands or fingers shall not be placed between the sling and its load while the sling is being tightened around the load.
- Shock loading is prohibited.
- A sling shall not be pulled from under a load when the load is resting on the sling.
- Slings without legible and permanently affixed identification markings will not be used.

45.20.e Inspections

Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by Alin Machining Company dba Power Plant Services . Additional inspections shall be performed during sling use, where service conditions warrant. Damaged or defective slings shall be immediately removed from service.

45.20.f Sling Identification

45.20.f.1 Alloy Steel Chain

Alloy steel chain slings shall have permanently affixed durable identification markings stating size, grade, rated capacity, safe working load, and reach.

45.20.f.2 Wire Rope Slings

Wire rope slings shall not be used with loads in excess of the rated capacities. Slings not included in these tables shall be used only in accordance with the manufacturer's recommendations.

45.20.f.3 Metal Mesh Slings

Each metal mesh sling shall have permanently affixed to it a durable marking that states the rated capacity for vertical basket hitch and choker hitch loadings.

Metal mesh slings shall not be used to lift loads in excess of their rated capacities. Slings not included in this table shall be used only in accordance with the manufacturer's recommendations.

45.20.f.4 Natural and Synthetic Fiber Rope Slings

Fiber rope slings made from conventional three strand construction fiber rope shall not be used with loads in excess of the rated capacities.

45.20.f.5 Synthetic Web Slings

Each sling shall be marked or coded to show the rated capacities for each type of hitch and type of synthetic web material.

Synthetic web slings shall not be used with loads in excess of the rated capacities. Slings shall be used only in accordance with the manufacturer's recommendations.

45.20.f.6 Shackles

Each shackle shall have permanently affixed durable identification markings stating size, grade, rated capacity, and safe working load.

45.20.f.7 Hooks

The manufacturer’s recommendations shall be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks. All hooks for which no applicable manufacturer’s recommendations are available

shall be tested to twice the intended safe working load before they are initially put into use. Hooks with cracks or having more than 15 percent in excess of normal throat opening or more than 10% twist from the plane of the unbent hook will be removed from service and discarded. Repairs by welding or reshaping are not authorized by Alin Machining Company dba Power Plant Services . All discarded hooks will be replaced.

45.20.f.8 Proof Coil Steel Chain/Hardware Chain

Proof coil steel chain/hardware chain/ or other chains not recommended for slinging or hoisting by the manufacturer, will not be sured for hoisting purposes.

45.20.f.9 Custom Designs

Special custom design grabs, hooks, clamps, or other lifting accessories for such units as modular panels, prefabricated structures and similar materials, shall be marked to indicate the safe working loads and shall be proof-tested to 125 percent of the rated load prior to use.

45.20.g B. Slings Usage Guidelines

Suitable protection should be provided between the sling and sharp surfaces of the load to be lifted. Slings should be store properly when not in use and should never be choked in the splice. Sharp kinks or knots should not be permitted in wire rope slings. Loads should not be lifted with one leg of a multi-leg sling until the unused legs are secured.

45.20.h C. Wire Rope Guidelinse

Wire rope is a structural component of the crane that requires periodic replacement. Loss of strength occurs due to wear, abuse and other forms of deterioration. The Qualified Inspector determines whether replacement is necessary.

Wire rope inspection program is part of the required PM program and is based on the following:

- Crane type.
- Crane usage.
- Crane maintenance history.
- Wire rope manufacturer’s recommendations.
- Crane manufacturer’s recommendations.
- Visual inspections of the wire rope by the Qualified Operators or Qualified Inspector during pre-use and monthly inspections.
- Quarterly and annual Inspections by the Qualified Inspector.

Areas affecting rope performance and rope life will be checked when rope is replaced or when quarterly and annual inspections are performed.

45.20.i D. Wire Rope Replacement

The following guidelines will be followed to determine continued use or retirement of the wire rope:

- Rope conditions found during inspection.
- Inspection records will be kept such that a rope replacement time interval can be determined.
- Inspection records on observed wire rope deterioration.
- Worn out wire rope will be identified as unfit for use and removed from service.

45.20.j E. Wire Rope Maintenance

Wire rope should be handled with care. The following guidelines should be followed to maintain the wire rope in optimum condition:

1. Store and handle wire rope carefully to prevent damage and deterioration.
2. Unreeling or uncoiling of rope will be done as recommended by the rope manufacturers.
3. When unreeling or uncoiling wire rope, attention will be given to avoid the introduction of kinks or twists into the rope. Wire rope in the boom hoist and load hoist systems will be installed and reeved as recommended by the crane and/or wire rope manufacturer.
4. Prior to cutting a wire rope, seize the rope at either side of the cut to prevent unlaying of the strands.
5. Do not contaminate, nick, scrape or sharply bend the wire rope.
6. Wedge socketing or terminating of the wire rope will be performed or supervised by a Qualified Operator or a Qualified Inspector.
7. Wire rope clips will be installed in accordance with wire rope or clip manufacturer's recommendations.
8. Malleable wire rope clips will not be used.
9. Drop forged clips are acceptable.
10. The saddle portion of the clip will be applied to the live rope segment and the Ubolt to the dead or shortened end segment.
11. Wire rope clip nuts will be tightened after initial use of the wire rope and periodically checked for proper torque.
12. Wedge-type sockets will be properly installed.
13. Maintain the wire rope in a well-lubricated condition to minimize internal and external corrosion or friction. Apply lubricant to wire rope as rope passes over a sheave.
14. Field applied lubricant must be compatible with the lubricant applied by the manufacturer.
15. Used oil will not be used as a lubricant because of possible contamination.
16. Obtain a wire rope manufacturer's test certificate when purchasing new wire rope. These tests will include an actual break test certificate. Certificates will be kept on file at the platform.

45.20.k F. Wire Rope Sling Replacement

If there is any question relative to the integrity of a sling, the sling will be properly disposed of. The following lists some of the reasons for replacing a sling:

1. In single part slings constructed of 6x19 class and 6x37 class wire rope in singlepart slings, ten (10) randomly distributed broken wires in one lay length or

five (5) broken wires in one strand in one lay length. For other constructions, refer to the Wire Rope Sling Users Manual.
2. Severe localized abrasion or scraping.
3. Kinking, crushing, birdcaging or any other damage resulting in distortion of the rope strand, wires, core configuration, eyes and splices.
4. Evidence of heat damage or exposure to severe heat.
5. Cracked, deformed or worn-end attachments.
6. Hooks that have been opened more the 15% of the normal throat opening or twisted more than 10 degrees from the plane of the unbent hook.
7. Severe corrosion of the rope or end attachments.
8. Reduction in rope diameter.
9. Loss of certification tag.
10. All wire rope slings will be certified on an annual basis, not to exceed 12 months, or removed from service.

45.20.l G. Wire Rope Slings Proof Loading and Labeling

All slings should be properly labeled and tested as follows:

1. All slings will be proof loaded by the manufacturer.
2. All slings will be labeled showing sling manufacturer and the pertinent working limits, proof test certification number, length, diameter and date of proof test.
3. Slings constructed of materials other than wire rope will be inspected and tested in accordance with the sling manufacturer and industry recommendations.
4. All wire rope slings will be certified on an annual basis, not to exceed 12 months, or removed from service.

45.21 Inspections

Following assembly and erection of hoists, and before being put in service, an inspection and test of all functions and safety devices must be made under the supervision of a competent person.

A similar inspection and test are required following major alteration of an existing installation.

All hoists must be inspected and tested at not more than 3-month intervals. Alin Machining Company dba Power Plant Services must prepare a certification record, which includes the date the inspection and test of all functions and safety devices was performed; the signature of the person who performed the inspection and test; and a serial number, or other identifier, for the hoist that was inspected and tested. The most recent certification record must be maintained on file.

Cranes shall be inspected on the following schedule:

- After Modification
- After Repair Or Adjustment
- Post Assembly
- Each Shift

- Monthly
- Annual Comprehensive

Additional inspections will occur for the following situations:

Severe Service

- Shock load, corrosive atmosphere, etc.
- Inspect exposed items/conditions
- Document

Not In Regular Use

- Idle more than three months
- Monthly inspection must be performed
- Document

Cranes and hoists that have been overloaded shall be inspected prior to being returned to service. The inspection and testing requirements are included.

Initial inspection and test shall be performed by a qualified third party.

- Prior to initial use all new and altered cranes shall be inspected and tested to ensure compliance with the provisions of 29 CFR1910.179 and ABSI B30.2.
- Only after determining, by this inspection, testing and proper documentation, that the crane is in safe operating condition, shall it be put into service.

Alin Machining Company dba Power Plant Services shall designate a competent person who shall inspect all machinery and equipment prior to each use, and during use, to make sure it is in safe operating condition. Any deficiencies shall be repaired, or defective parts replaced, before continued use. Daily pre-use inspections shall be performed by the crane operator (designated as Alin Machining Company dba Power Plant Services 's designated competent person) prior to beginning shift and through observation during normal operation. Daily inspections shall include:

- Any deficiencies shall be repaired, or defective parts replaced, before continued use.
- All functional operating mechanisms for maladjustment interfering with proper operation.
- Deterioration or leakage in lines, tanks, valves, drain pumps, and other parts of air or hydraulic systems.
- Hooks, if deformations or cracks are found the hook shall be tagged out of service until tested and repalced by qualified personnel.
- Hoist chains, including end connections, for excessive wear, twist, distorted links interfering with proper function, or stretch beyond manufacturer's recommendations.

45.21.a Severe Service Inspection

Severe service inspections shall be conducted to inspect exposed items and conditions resulting from a shock load, corrosive atmosphere, etc. Inspections shall be documented.

45.21.b Not in Regular Use Inspection

If equipment is idle for more than three months a monthly inspection shall be performed before being placed in service. The same criteria for monthly inspections shall be followed.

45.21.c Monthly Inspection

Monthly inspections of equipment by a competent person are documented. Equipment must be inspected monthly by a competent person and documented. Documentation must include the following:

- Items checked,
- Results of inspection, and
- Name and signature of the inspector.

Documentation must be retained for 3 months. Documented monthly inspection not required if the daily inspection is documented and records are retained for 3 months.

If safety hazards are found during inspections, the equipment in question shall be tagged out and not used until repairs are made. Any deficiencies constituting a safety hazard shall cause the equipment to be tagged out of service until repairs are made.

45.21.d Annual Inspection

A thorough, annual inspection and functioning testing of the hoisting machinery shall be documented made by a qualified person, or by a government or private agency recognized by the U.S. Department of Labor using the detail inspection criteria per regulation. Alin Machining Company dba Power Plant Services shall maintain a record of the dates and results of inspections for each hoisting machine and piece of equipment and kept on file for 12 months or until the next annual inspection.

45.21.e Wire Rope Inspection

Wire rope will be inspected on the following schedule:

- Shift Inspection – Before each shift.
- Monthly Inspection - All wire ropes, including running ropes and the inspection shall be documented.
- Annual Inspection – At least every 12 months, unless not feasible due to set up. This will be a more detailed inspection including wire rope that is normally hidden during daily or monthly inspections and the inspection shall be documented.

A Alin Machining Company dba Power Plant Services competent person will conduct visual inspections before each shift, monthly and annually for wire rope and categorize deficiencies in:

Category I Deficiencies

- Significant distortion of the wire rope structure such as kinking, crushing, un-stranding, bird caging, signs of core failure, or steel core protrusion between the outer strands.
- Significant corrosion.
- Electric arc (from a source other than power lines) or heat damage.
- Improperly applied end connections.
- Significantly corroded, cracked, bent, or worn end connections (such as from severe service).

If a Category I deficiency is identified, an immediate determination shall be made by the qualified person as to replacement of the wire rope, or if the deficiency is localized, the wire rope may be severed at the bad spot and may be continued to be used.

Category II Deficiencies

Visible broken wires as follows:

- In running wire ropes: six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay.
- In rotation resistant ropes: two randomly distributed broken wires in six rope diameters or four randomly distributed broken wires in 30 rope diameters.
- In pendants or standing wire rope more than two broken wires in one rope lay located in rope beyond end connections and / or one or more broken wire in a rope lay located at an end connection.

If a category II deficiency is identified an immediate determination shall be made by the qualified person as to, based on manufacturer recommendations, either remove or monitor the wire rope for continued deterioration.

The qualified person determines when to replace the wire rope (no more than 30 days after the deficiency is identified).

A qualified person assesses the deficiency in light of the load and other conditions of use and determines it is safe for continued use.

A qualified person establishes the parameters of use.

All workers who conduct shift inspections are notified.

The qualified person’s findings and procedures are documented.

Category III Deficiencies

- Electrical contact to power line
- Core protrusion or other distortion indicating core failure in rotation resistant wire rope
- Broken strand

If a category III deficiency is identified, operations involving use of the wire rope shall be prohibited until the:

- Wire rope is replaced (ALWAYS with power line contact).
- Deficiency is localized and problem corrected.

45.21.f Operational Procedures

Only qualified personnel shall operate cranes and equipment covered by this program. Operators shall comply with the following safety rules while operating cranes and hoists:

- Employees shall not be exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres when internal combustion engine powered equipment is used. Tests shall be conducted and documented.
- Do not engage in any practice that will divert your attention while operating the crane.
- Respond to signals only from the person who is directing the lift or any appointed signal person.
- Obey a stop signal at all times, no matter who gives it.
- Do not move a load over people.
- People shall not be placed in jeopardy by being under a suspended load.
- Do not work under a suspended load unless the load is supported by blocks, jacks, or a solid footing that will safely support the entire weight.
- Have a crane or hoist operator remain at the controls or lock open and tag the main electrical disconnect switch.
- Ensure that the rated load capacity of a crane's bridge, individual hoist, or any sling or fitting is not exceeded.
- Know the weight of the object being lifted.
- Check that all controls are in the OFF position before closing the main line disconnect switch.
- If spring-loaded reels are provided to lift pendants clear off the work area, ease the pendant up into the stop to prevent damaging the wire.
- Avoid side pulls. These can cause the hoist rope to slip out of the drum groove, damaging the rope or destabilizing the crane or hoist.
- To prevent shock loading, avoid sudden stops or starts. Shock loading can occur when a suspended load is accelerated or decelerated, and can overload the crane or hoist. When completing an upward or downward motion, ease the load slowly to a stop.

45.21.f.1 Visual Inspection

A visual inspection of the equipment will be conducted by a competent person prior to each shift. A competent person must conduct a visual inspection of equipment prior to each shift. The inspection must consist of observation for apparent deficiencies. Some of the inspection items include control mechanisms, pressurized lines, hooks and latches, wire rope, electrical apparatus, tires (when used), and ground conditions. The designated competent person operator shall do the following steps before making lifts with any crane or hoist:

- Test the upper-limit switch and slowly raise the unloaded hook block until the limit switch trips.
- Visually inspect the hook, load lines, trolley, and bridge as much as possible from the operator's station; in most instances, this will be the floor of the building.
- If provided, test the lower-limit switch.
- Test all direction and speed controls for both bridge and trolley travel.
- Test all bridge and trolley limit switches, where provided, if operation will bring the equipment in close proximity to the limit switches
- Test the pendant emergency stop.
- Test the hoist brake to verify there is no drift without a load.
- If provided, test the bridge movement alarm.
- Lock out and tag for repair any crane or hoist that fails any of the above tests.
- Any deficiencies shall be repaired, or defective parts replaced, before continued use.

45.21.g Moving a Load

- Center the hook over the load to keep the cables from slipping out of the drum grooves and overlapping, and to prevent the load from swinging when it is lifted.
- Inspect the drum to verify that the cable is in the grooves.
- Use a tag line when loads must traverse long distances or must otherwise be controlled.
- Manila rope may be used for tag lines.
- Plan and check the travel path to avoid personnel and obstructions.
- Lift the load only high enough to clear the tallest obstruction in the travel path.
- Start and stop slowly.
- Land the load when the move is finished.
- Choose a safe landing area.
- Never leave suspended loads unattended
- In an emergency where the crane or hoist has become inoperative, if a load must be left suspended, barricade and post signs in the surrounding area, under the load, and on all four sides.
- Lock open and tag the crane or hoist's main electrical disconnect switch.

45.21.h Parking a Crane or Hoist

- Remove all slings and accessories from the hook.
- Return the rigging device to the designated storage racks.
- Place the emergency stop switch (or push button) in the OFF position.

Cranes or hoists shall not be loaded beyond their rated capacity for normal operations.

Any crane or hoist suspected of having been overloaded shall be removed from service by locking open and tagging the main disconnect switch. Overloaded cranes shall be inspected, repaired, load tested, and approved for use before being returned to service.

45.22 Fall Protection

Anyone conducting non-assembly/disassembly work, maintenance or repair on cranes or hoists at heights greater than 6 ft (1.8 m) shall use fall protection. Fall protection includes safety harnesses that are fitted with a lifeline and securely attached to a structural member of the crane or building. Anchorages must be any substantial part of the boom or to any substantial piece on the equipment (using correct fall protection equipment). A fall arrest system is permitted to be anchored to the crane/derrick's hook or other part of the load line where the following requirements are met:

- A qualified person has determined the set-up and rated capacity meets or exceeds the anchorage requirements
- The operator is aware it is being used for this purpose

Exceptions to using fall protection involving non-assembly/disassembly work:

- While at a work station or going to and from a work station.
- When walking point to point along a horizontal lattice boom that has been lowered to the ground and supported.
- In the cab or on the deck

Fall protection must be used when working over 15 feet during the assembly/disassembly process, except when the employee is:

- At or near the draw-works
- In the cab, or on the deck

45.23 Signalling

A signal person must be provided if the operator's view is obstructed, if site specific safety concerns require it or if the operator determines that it is necessary. A signal person must be provided for the following situations:

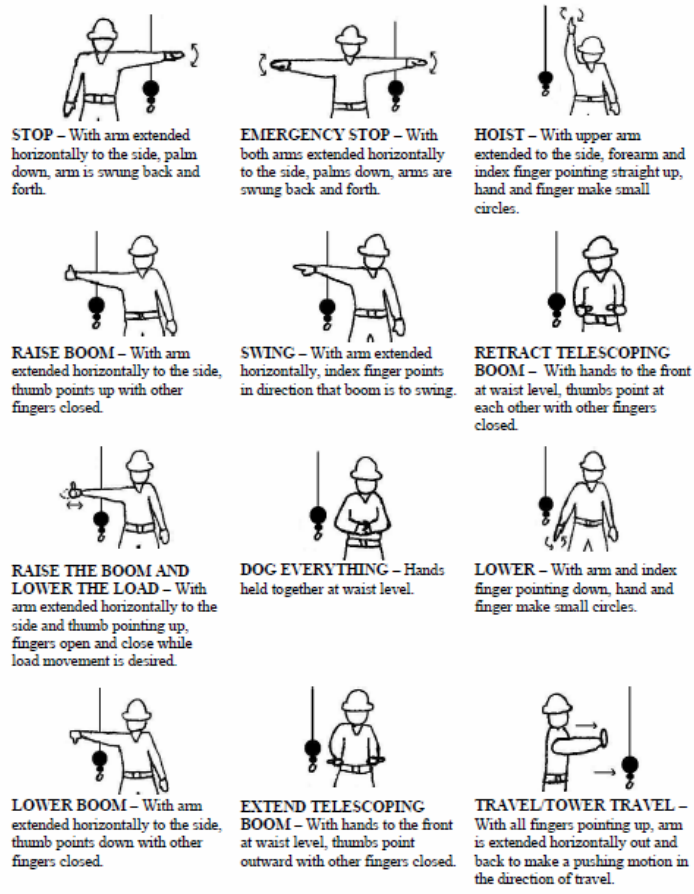
- The point of operation is not in full view of the operator
- The view is obstructed when the equipment is traveling
- The operator or the person handling the load determines it is necessary due to site specific concerns.

Signals to the operator shall be in accordance with the standard hand signals prescribed by the applicable ANSI standard for the type of crane in use unless voice communications equipment (telephone, radio, or equivalent) is used.

- Signalers must be qualified.
- Signals shall be discernible or audible at all times.
- Some special operations may require addition to or modification of the basic signals.

- For all such cases, these special signals shall be agreed upon and thoroughly understood by both the person giving the signals and the operator, and shall not be in conflict with the standard signals.

STANDARD HAND SIGNALS



STOP – With arm extended horizontally to the side, palm down, arm is swung back and forth.

EMERGENCY STOP – With both arms extended horizontally to the side, palms down, arms are swung back and forth.

HOIST – With upper arm extended to the side, forearm and index finger pointing straight up, hand and finger make small circles.

RAISE BOOM – With arm extended horizontally to the side, thumb points up with other fingers closed.

SWING – With arm extended horizontally, index finger points in direction that boom is to swing.

RETRACT TELESCOPING BOOM – With hands to the front at waist level, thumbs point at each other with other fingers closed.

RAISE THE BOOM AND LOWER THE LOAD – With arm extended horizontally to the side and thumb pointing up, fingers open and close while load movement is desired.

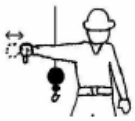
DOG EVERYTHING – Hands held together at waist level.

LOWER – With arm and index finger pointing down, hand and finger make small circles.

LOWER BOOM – With arm extended horizontally to the side, thumb points down with other fingers closed.

EXTEND TELESCOPING BOOM – With hands to the front at waist level, thumbs point outward with other fingers closed.

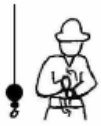
TRAVEL/TOWER TRAVEL – With all fingers pointing up, arm is extended horizontally out and back to make a pushing motion in the direction of travel.



LOWER THE BOOM AND RAISE THE LOAD – With arm extended horizontally to the side and thumb pointing down, fingers open and close while load movement is desired.

MOVE SLOWLY – A hand is placed in front of the hand that is giving the action signal.

USE AUXILIARY HOIST (whipline) – With arm bent at elbow and forearm vertical, elbow is tapped with other hand. Then regular signal is used to indicate desired action.



CRAWLER CRANE TRAVEL, BOTH TRACKS – Rotate fists around each other in front of body; direction of rotation away from body indicates travel forward; rotation towards body indicates travel backward.

USE MAIN HOIST – A hand taps on top of the head. Then regular signal is given to indicate desired action.

CRAWLER CRANE TRAVEL, ONE TRACK – Indicate track to be locked by raising fist on that side. Rotate other fist in front of body in direction that other track is to travel.

TROLLEY TRAVEL – With palm up, fingers closed and thumb pointing in direction of motion, hand is jerked horizontally in direction trolley is to travel.

45.24 Training

Mandatory training is required for:

- Overhead power lines
- Signal persons
- Competent/qualified persons
- Operators
- Crush/pinch points
- Tag-out

45.24.a Administrative Requirements

Training Costs

Alin Machining Company dba Power Plant Services must provide all training required under the crane and derrick rules at no cost to the employee.

Refresher Training

Alin Machining Company dba Power Plant Services must provide refresher training in relevant topics for each employee when there is an indication that retraining is necessary on the basis of Alin Machining Company dba Power Plant Services actions or an evaluation of the employee's knowledge.

Training Evaluation
Alin Machining Company dba Power Plant Services must evaluate each employee who has been trained in crane and derrick operations to verify that he or she understands the information provided in training. The rule allows Alin Machining Company dba Power Plant Services to determine the most appropriate method of evaluation.

Note: The crane operator training applies only in states that do not have their own licensing and certification requirements. All other training and qualification requirements apply to all personnel.

45.25 Crane Operator Training

Alin Machining Company dba Power Plant Services must comply with federal requirements to train crane operators employed by them. During the certification phase-in period (i.e., November 2012 to November 2014) in states without operator licensing laws, Alin Machining Company dba Power Plant Services must ensure that crane and derrick operators covered by the rules are competent to operate the equipment safely. Where an employee assigned to operate machinery does not have the required knowledge or ability to operate the equipment safely, Alin Machining Company dba Power Plant Services must train that employee before operating the equipment. Alin Machining Company dba Power Plant Services must ensure that each operator is evaluated to confirm that he or she understands the information provided in the training.

Operator-in-training requirement effective November 10, 2014
The rules for operator-in-training (e.g., prequalification/certification training, operator's trainer monitoring, multiple-lift rigging operations) in states without operator licensing rules are applicable on November 10, 2014. Until that date, operators must comply with the minimum training requirements required under the transition period from November 8, 2012 to November 10, 2014.

45.25.a Minimum Training Requirements
Before operating crane equipment, each crane operator must be trained to know how to safely operate the specific type of equipment he or she will operate, including all of the following:

- Safe practices for testing the boom hoist brake on friction equipment and all other equipment with a boom (see 29 CFR 1926.1430(c)(4)(i) for the specific safe practices);
- The manufacturer's emergency procedures for stopping unintended equipment movement, where available;
- The controls and operational/performance characteristics;
- Use of, and the ability to calculate (manually or with a calculator), load and capacity information on a variety of configurations of the equipment;
- Procedures to prevent and respond to power line contact;
- Technical knowledge similar to the subject matter criteria listed in Appendix C of the regulation applicable to the specific equipment (such as general technical

information about wire ropes and rigging devices, site information, operations for carrying loads and multicrane lifts, and use of load charts);
- Technical knowledge applicable to the suitability of the supporting ground and surface to handle expected loads, to site hazards, and to site access;
- The applicable manuals, consensus standards, and other materials incorporated into the regulation.

The operator must be able to read and locate relevant information in the equipment manual and other materials containing information about the safe operation of equipment.

45.25.b Operator Skills Demonstration

Alin Machining Company dba Power Plant Services must ensure that the operator has demonstrated the skills necessary for safe operation of the equipment, including:

- The ability to recognize, from visual and auditory observation, the items listed in the regulation for shift inspection (29 CFR 1926.1412(d));
- Operational and maneuvering skills;
- Application of load chart information;
- Application of safe shutdown and securing procedures.

45.25.c Overhead Power Line Training

In cases where crane equipment is expected to come closer to live power lines than the minimum clearance distance permitted under the rules for power line safety Alin Machining Company dba Power Plant Services must train each crane operator and crew member assigned to work with equipment the procedures to be followed in the event of electrical contact with a power line. Such training must include:

- Information regarding the danger of electrocution from the operator simultaneously touching the equipment and the ground.
- The importance to the operator's safety of remaining inside the cab except where there is an imminent danger of fire, explosion, or other emergency that necessitates leaving the cab.
- The safest means of evacuating from equipment that may be energized.
- The danger of the potentially energized zone around the equipment (step potential).
- The need for crew in the area to avoid approaching or touching the equipment and the load.
- Safe clearance distance from power lines.
- Power lines are presumed to be energized unless the utility owner/operator confirms that the power line has been and continues to be deenergized and visibly grounded at the worksite.
- Power lines are presumed to be uninsulated unless the utility owner/operator or a registered engineer who is a qualified person with respect to electrical power transmission and distribution confirms that a line is insulated.
- The limitations of an insulating link/device, proximity alarm, and range control (and similar) device, if used.
- The procedures to be followed to properly ground equipment and the limitations of grounding.

Employees working as dedicated spotters must be trained to enable them to effectively perform their task, including training on the applicable requirements of this section.

45.25.d Tag Out and Start-up Procedures Training

Each operator must be trained in the tagout and start-up procedures specified in the rule for crane and derrick equipment that is out of service (see Operation rule at 29 CFR 1926.1417(f) and (g)).

45.25.e Operators of Derricks, Sideboom Cranes and equipment with a maximum manufacturer-rated hoisting/lifting capacity of 2,000 lb. or less

Such operators are exempt from the detailed training requirements for other cranes. However, before operating such equipment, they must be trained in the safe operation of the type of equipment they will be operating.

45.26 Assembly Inspection

When the assembly has been completed, the equipment must be inspected by the A/D Director or by a qualified person prior to the use of the equipment to ensure that the equipment is configured in accordance with the manufacturer equipment criteria. If these criteria are unavailable, the employer's qualified person, with the assistance of a registered professional engineer if necessary, must develop the appropriate configuration criteria and ensure that these criteria are met. Equipment must not be used if they do not follow the manufacturer equipment criteria or configuration criteria.

45.27 Assembly/Disassembly Capacity Limits

Alin Machining Company dba Power Plant Services will ensure that during all phases of assembly/disassembly, rated capacity limits for loads imposed on the equipment, equipment components(including rigging), lifting lugs and equipment accessories, will not be exceeded for the equipment being assembled/disassembled.

45.28 Assembly/Disassembly (A/D) Director

The A/D director is a person who supervises equipment assembly and disassembly operations and must understand the applicable A/D procedures. The A/D director must review A/D procedures prior to every assembly/disassembly of new or unfamiliar equipment, the review can be bypassed if the A/D director understands the procedures and has applied them to the same type and configuration of equipment.

The A/D director must meet the criteria for a competent and qualified person under the following conditions:

- Where the assembly and disassembly is performed by only one person, that person is considered the A/D director and must meet the training criteria for both a competent person and a qualified person;

- Where the A/D director is assisted by one or more qualified persons, he or she must meet the criteria for a competent person and is not required to be a qualified person.

The A/D director will be responsible for ensuring the crew members understand all of the following:

- Their tasks.
- The hazards associate with their tasks, as well as the hazardous positions and locations that they need to avoid.
- That before a crew member is to go to a location out of view of the operator and is either in, on, or under the equipment, or near the equipment that could result in injury by the movement of the equipment or load, the crew member **MUST** inform the operator and supervisor prior to going to that location. The operator must not move the equipment until that crew member informs the operator that he/she has relocated to a safe position.

The A/D director must verify all capacities of any equipment used, including rigging, lifting lugs, etc. The A/D director must address and inform others of hazards associated with the operation and take the necessary precautions, including the following areas of concern:

- Site and ground conditions, site and ground conditions must be able to support the equipment during assembly/disassembly.
- Blocking material, blocking material must be the correct size, amount, and condition. The blocking must be stacked so as to sustain the loads and maintain stability.
- Proper location of blocking, when used to support lattice booms or components, blocking must be placed appropriately to protect the structural integrity of the equipment, and prevent dangerous movement and collapse.
- Verifying assist crane loads, when using an assist crane, the loads that will be imposed on the assist crane at each phase of assembly/disassembly must be verified as being within its rated capacity.
- Boom & jib pick points, the point(s) of attachment of rigging to a boom (or boom sections, jib, or jib sections) must be suitable for preventing structural damage and facilitating safe handling of these components.
- Center of gravity, the center of gravity of the load must be identified if necessary for the method used for maintaining stability. Where there is insufficient information to accurately identify the center of gravity, measures designed to prevent unintended dangerous movement resulting from an inaccurate identification of the center of gravity must be used.
- Stability upon pin removal, the boom sections, boom suspension systems (such as gantry A-frames and jib struts), and components must be rigged or supported to maintain stability upon the removal of the pins.
- Snagging, suspension ropes and pendants must not be allowed to catch on the boom or jib connection pins or cotter pins (including keepers and locking pins).

- Struck by counterweights, steps must be taken to prevent unintended movement from counterweights that are inadequately supported or are being hoisted.
- Boom hoist brake failure, each time reliance is to be placed on the boom hoist brake to prevent boom movement during assembly/disassembly, the brake must be tested prior to such reliance to determine if it is sufficient to prevent boom movement. If it is not sufficient, a boom hoist pawl, other locking device/back-up braking device, or another method of preventing dangerous movement of the boom (such as blocking or using an assist crane) from a boom hoist brake failure must be used.
- Loss of backward stability, Backward stability must be assured before swinging the upperworks, travel, and when attaching or removing equipment components.
- Wind speed and weather, the effect of wind speed and weather on the equipment must be taken into account.

45.29 Authorized Personnel Training

Each employee assigned to work on or near the equipment (i.e., authorized personnel) must be trained to:

- Recognize swing radius hazards;
- Recognize struck-by and pinch/crush hazard areas posed by the rotating superstructure;
- Keep clear of holes and crush/pinch points.

45.30 Competent Person Training

The competent person (i.e., one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them) must be trained in any additional requirements of his or her role and responsibility under the new rules. For example, a competent person assigned to conduct a visual inspection of equipment during each shift the equipment is used must be trained in the required elements of a shift inspection.

45.31 Crew Member Training

45.31.a Assembly and Disassembly Operations

Before commencing assembly/disassembly operations, the A/D director must ensure that the crew members understand all of the following:

- Their tasks and the hazards associated with their tasks;
- The hazardous positions and locations that they need to avoid.

45.31.b Work Near Power Lines

Crew members assigned to work with crane and derrick equipment must receive the

same overhead power line training as required for crane operators, regardless of the distance from the power lines. See the Crane Operator Training subsection for more information.

45.31.c Working out of View

Before a crew member is to go to a location out of view of the operator and is either in, on, or under the equipment, or near the equipment that could result in injury by the movement of the equipment or load, the crew member **MUST** inform the operator and supervisor prior to going to that location. The operator must not move the equipment until that crew member informs the operator that he/she has relocated to a safe position using a prearranged system of communication.

45.32 Dedicated Spotter

The dedicated spotter must meet the qualifications for a signal person and complete the training requirements for crew member.

The dedicated spotter's sole responsibility is to watch the separation between power lines and the crane or derrick equipment, load line and load (including rigging and lifting accessories) and ensure through communication with the operator that the applicable minimum approach distance is not breached.

45.33 Maintenance and Repair Employee Qualifications and Training

Maintenance and repair personnel must be trained to operate the equipment under limited conditions necessary to perform the maintenance or repair. The operation is limited to those functions necessary to perform maintenance, inspect the equipment or verify its performance. Such personnel may operate the equipment under the direct supervision of a qualified or certified crane operator, or if they are familiar with the operation, limitations, characteristics, and hazards associated with the type of equipment.

45.33.a Qualified Person

A maintenance and repair employee must be a qualified person (i.e., a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, successfully demonstrates the ability to solve/resolve problems relating to the subject matter, the work, or the project). Maintenance and repair workers are not considered "operators" and are therefore not required to be trained in all of the areas required for crane operators.

45.33.b Tagout and Start-up Procedures Training

Each maintenance and repair person must be trained in tagout and start-up procedures specified in the rule (see Operation rule at 29 CFR 1926.1417(f) and 29 CFR 1926.1417(g)).

45.34 Qualified Person

Qualified person is an employee by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, successfully demonstrates the ability to solve/resolve problems relating to the subject matter, the work, or the project. Riggers and signalers are examples of personnel that must meet the requirements for qualified person.

Alin Machining Company dba Power Plant Services must train each qualified person regarding the requirements of the crane and derrick regulations applicable to their respective roles.

45.35 Fall Protection Training

Alin Machining Company dba Power Plant Services must train each employee who may be exposed to fall hazards while on or hoisted by crane equipment on all of the fall protection requirements in the rule (29 CFR 1926.1423(a) to 1926.1423(j)), and the applicable criteria and practices in the fall protection rule for construction at 29 CFR 1926.502.

45.36 Training Recap Table

Personnel	Activity or Equipment	Training Requirement
All personnel	Work with cranes and derricks	Hazards and procedures to keep clear of holes and crush/pinch points
All personnel	Exposed to fall hazards while on or hoisted by equipment	Fall protection
All personnel on floating cranes/cranes on barges	Floating cranes/derricks and cranes/derricks on barges	Understand hazard warning signs and markings
Assembly/Disassembly (A/D) Director	Supervise assembly and disassembly operations	Meet criteria of a competent person and qualified person
Authorized personnel	Work in areas near rotating crane/derrick superstructure	How to recognize struck-by and pinch/crush hazards
Competent Person	All, including shift and monthly inspections	Applicable to respective role
Crew member	Assembly and disassembly operations	Understand tasks, hazards, positions/ areas to avoid
Crew member	Work near power lines	Power line safety information and procedures
Dedicated Spotter	Work near power lines	Qualify as a signal person
Dedicated Spotter	Work near power lines	Power line safety information and procedures
Maintenance and Repair Personnel	Operate equipment	Qualify to operate
Maintenance and Repair Personnel	Equipment out of service	Tagout and start-up procedures
Operator	Derricks, sidebooms, small hoist/lift capacity cranes (2,000 lbs.	Know how to safely operate equipment (no specific training

Personnel	Activity or Equipment	Training Requirement
	or less) only	requirements)
Operator	Friction equipment	Test the boom hoist brake
Operator	Unintended equipment movement	Know manufacturer's emergency procedures
Operator	Operate specific type of crane (other than derricks, sidebooms, cranes of 2,000 lb or less capacity)	Know how to safely operate, inspect, calculate load, shut down, and secure
Operator	Work near power lines, and within minimum power line clearance	Power line safety and procedures in the event of electrical contact
Operator	Crane/Derrick equipment out of service	Tagout and start-up procedures
Qualified Person	All, including annual inspections	Applicable to respective role; possess a recognized degree, certificate, or professional standing, or have extensive knowledge, training, and experience.
Rigger	Assemble, rig, disassemble equipment and materials	Same as for qualified person
Signal Person	Communicate with operator of crane/derrick with greater than 2,000 lb. lift capacity	Qualify as a signal person with written or verbal test, retrain if needed
Signal Person	Communicate with operator of crane/derrick with lift capacity of 2,000 lb. or less	Proper use of signals applicable to the use of the equipment

CRANES AND DERRICKS IN CONSTRUCTION
PRE-SHIFT INSPECTION BY A COMPETENT PERSON
29 CFR 1926.1412-1413

CRANE: _____ DATE: _____
INSPECTOR: _____

Check the box next to each item after it has passed inspection. Note any deficiencies or other observations that could pose a risk of injury or property damage.

EQUIPMENT TYPE: _____

EQUIPMENT MODEL: _____

MANUFACTURER: _____

SERIAL NUMBER: _____

Circle One		Item or Function Inspected	Notes
Yes	No	Control mechanisms for maladjustments interfering with proper operation	
Yes	No	Control and drive mechanisms for apparent excessive wear of components and contamination by lubricants, water or other foreign matter	
Yes	No	Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those which flex in normal operation	
Yes	No	Hydraulic system for proper fluid level	
Yes	No	Hooks and latches for deformation, cracks, excessive wear, or damage such as from chemicals or heat	
Yes	No	Wire rope reeving for compliance with the manufacturer's specifications	
		Wire Rope Category I	
Yes	No	Significant distortion of the wire rope structure such as kinking, crushing, unstranding, birdcaging, signs of core failure or steel core protrusion between the outer strands	
Yes	No	Significant corrosion	
Yes	No	Electric arc damage (from a source other than power lines) or heat damage	
Yes	No	Improperly applied end connections	
Yes	No	Significantly corroded, cracked, bent, or worn end connections (such as from severe service).	
		Wire Rope Category II	
Yes	No	Visible broken wires, as follows:	

Circle One		Item or Function Inspected	Notes
Yes	No	In running wire ropes: Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay, where a rope lay is the length along the rope in which one strand makes a complete revolution around the rope.	
Yes	No	In rotation resistant ropes: Two randomly distributed broken wires in six rope diameters or four randomly distributed broken wires in 30 rope diameters.	
Yes	No	In pendants or standing wire ropes: More than two broken wires in one rope lay located in rope beyond end connections and/or more than one broken wire in a rope lay located at an end connection	
Yes	No	A diameter reduction of more than 5% from nominal diameter.	
		Wire Rope Category III	
Yes	No	In rotation resistant wire rope, core protrusion or other distortion indicating core failure.	
Yes	No	Prior electrical contact with a power line.	
Yes	No	A broken strand.	
		Wire Rope Critical Review Items	
Yes	No	The competent person must give particular attention to all of the following:	
Yes	No	Rotation resistant wire rope in use	
Yes	No	Wire rope being used for boom hoists and luffing hoists, particularly at reverse bends.	
Yes	No	Wire rope at flange points, crossover points and repetitive pickup points on drums.	
Yes	No	Wire rope at or near terminal ends.	
Yes	No	Wire rope in contact with saddles, equalizer sheaves or other sheaves where rope travel is limited.	
Yes	No	Electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation	
Yes	No	Tires (when in use) for proper inflation and condition	
Yes	No	Ground conditions around the equipment for proper support, including ground settling under and around outriggers/stabilizers and supporting foundations, ground water accumulation, or similar conditions	
Yes	No	The equipment for level position within the tolerances specified by the equipment manufacturer's recommendations, both before each shift and after each move and setup.	
Yes	No	Operator cab windows for significant cracks, breaks, or other deficiencies that would hamper the	

Circle One		Item or Function Inspected	Notes
		operator's view.	
Yes	No	Rails, rail stops, rail clamps and supporting surfaces when the equipment has rail traveling.	
Yes	No	Safety devices and operational aids for proper operation	

SIGNATURE OF INSPECTOR _____

DATE _____

Chapter 46 - Scaffolds

46.1 Training Requirements

Alin Machining Company dba Power Plant Services ’s Scaffolding Safety Trainer is The Competent Person, who is currently undergoing or is qualified as an OSHA Standard - ’competent person’. Their training has made them knowledgeable about the requirements of our program and will be able to train and instruct Alin Machining Company dba Power Plant Services ’s employees on scaffolding safety and hazard identification.

Every employee who performs work while on a scaffold must complete Alin Machining Company dba Power Plant Services ’s training course. The trainer is a ‘competent person’ and well qualified with the subject matter to recognize the hazards associated with the type of scaffold being used and understands the procedures to control and / or minimize those hazards.

Our training program includes the following areas, as applicable:

- The nature of any electrical hazards, fall hazards and falling object hazards in the work area;
- The correct procedures for dealing with electrical hazards and for erecting, maintaining, and disassembling the fall protection systems and falling object protection systems being used;
- The proper use of the scaffold, and the proper handling of materials on the scaffold;
- The maximum intended load and the load-carrying capacities of the scaffolds used; and
- Any other pertinent requirements of this subpart.

When Alin Machining Company dba Power Plant Services has reason to believe that an employee lacks the skill or understanding needed for safe work involving the erection, use or dismantling of scaffolds, each such employee shall be retrain so that the requisite proficiency is regained.

Retraining is required in at least the following situations:

1) Where changes at the worksite present a hazard about which an employee has not been previously trained; or
2) Where changes in the types of scaffolds, fall protection, falling object protection, or other equipment present a hazard about which an employee has not been previously trained; or

3) Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the requisite proficiency.

46.2 Competent Person

Alin Machining Company dba Power Plant Services 's 'competent person', The Competent Person has acquired the experience, knowledge and training to allow them to be:

1. One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them;

2. A competent person will be knowledgeable about the requirements of this standard and have sufficient training or knowledge to identify and correct hazards encountered in scaffold work; and

3. Will have had specific training in and be knowledgeable regarding the structural integrity of scaffolds and the procedures needed to maintain them.

4. By definition, the competent person must have the authority to take prompt corrective measures to abate potentially hazardous work site conditions.

5. A competent person is also required to inspect the scaffold and its components for visible defects before each work shift and after any occurrence which could affect the scaffold's structural integrity. The inspections will be done periodically to ensure scaffolds are safe before and during use.

46.3 Tags

46.3.a Use

Tags shall be used as a means to prevent accidental injury or illness to employees who are exposed to hazardous or potentially hazardous conditions, equipment or operations which are out of the ordinary, unexpected or not readily apparent. Tags shall be used until such time as the identified hazard is eliminated or the hazardous operation is completed. Tags need not be used where signs, guarding or other positive means of protection are being used.

46.3.b General Tag Criteria

All required tags shall meet the following criteria:

- Tags shall contain a signal word and a major message.

- The signal word shall be either ‘Danger,’ ‘Caution’
- The major message shall indicate the specific hazardous condition or the instruction to be communicated to the employee.
- The signal word shall be readable at a minimum distance of five feet (1.52 m) or such greater distance as warranted by the hazard.
- The tag's major message shall be presented in either pictographs, written text or both.
- The signal word and the major message shall be understandable to all employees who may be exposed to the identified hazard.
- All employees shall be informed as to the meaning of the various tags used throughout the workplace and what special precautions are necessary.
- Tags shall be affixed as close as safely possible to their respective hazards by a positive means such as string, wire, or adhesive that prevents their loss or unintentional removal.

46.3.c Danger Tags

Danger tags shall be used in major hazard situations where an immediate hazard presents a threat of death or serious injury to employees. Danger tags shall be used only in these situations.

46.3.d Caution Tags

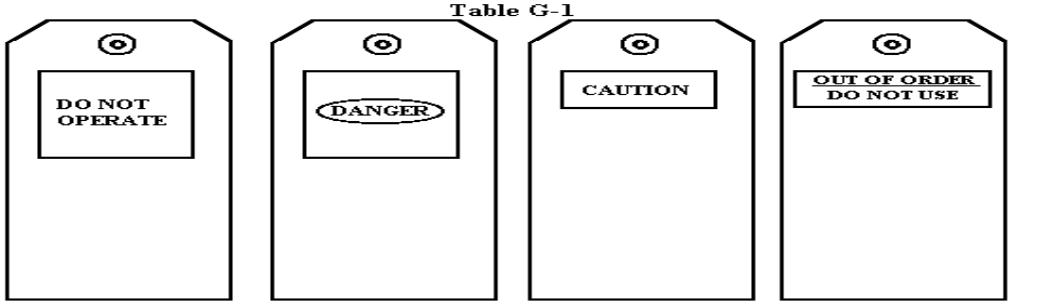
Caution tags shall be used in minor hazard situations where a non-immediate or potential hazard or unsafe practice presents a lesser threat of employee injury. Caution tags shall be used only in these situations.

46.3.e Warning Tags

Warning tags may be used to represent a hazard level between ‘Caution’ and ‘Danger,’ instead of the required ‘Caution’ tag, provided that they have a signal word of ‘Warning,’ an appropriate major message.

Example of Common Tags

Table G-1



White tag - White letters on a red square	White tag - White letters on red oval with a black square	Yellow tag - Yellow letters on a black back-ground	White tag - White letters on a black back-ground

Basic Stock (Background)	Safety Colors (Ink)	Copy Specification (Letters)
White	Red	Do Not Operate
White	Black and Red	Danger
Yellow	Black	Caution
White	Black	Out of Order Do Not Use

46.4 Modifications

Only qualified and competent personnel are allowed to modify scaffolding systems. Non-qualified personnel may create more hazards. Disciplinary action for non-qualified modifications may be taken.

46.5 Load Ratings and Defined Requirements

A. "All scaffolds shall be erected in accordance with the provisions of Article 21 of the Construction Safety Orders."

B. Load Rating

1) The design working load of ladder stands shall be calculated on the basis of one or more 200-pound persons together with 50 pounds of equipment each.

2) The design load of all scaffolds shall be calculated on the basis of:

(a) Light -Designed and constructed to carry a working load of 25 pounds per square foot.

(a) Medium -Designed and constructed to carry a working load of 50 pounds per square foot.

(c) Heavy -Designed and constructed to carry a working load of 75 pounds

per square foot.

3) All ladder stands and scaffolds shall be capable of supporting at least 4 times the design working load.

C. Materials. The materials used in mobile ladder stands and scaffolds shall be selected to safely support the design working load and shall be maintained to protect against corrosion and deterioration.

D. Fasteners. Nails, bolts, or other fasteners used in the construction of ladders, scaffolds, and towers shall be of adequate size and in sufficient numbers at each connection to develop the designed strength of the unit. Nails shall be driven full length. (All nails shall be immediately withdrawn from dismantled lumber.)

E. Workmanship. All exposed surfaces shall be free from sharp edges, burrs, or other laceration hazards.

F. Work Levels.

1) The maximum work level height shall not exceed 3 times the least base dimension below the platform. Where the basic mobile unit does not meet this requirement, outrigger frames shall be employed to achieve this least base dimension, or provisions shall be made to guy or brace the unit against tipping.

2) The minimum platform width for any work level shall not be less than 20 inches for mobile scaffolds (towers). Ladder stands shall have a minimum step width of 16 inches.

3) The supporting structure for the work level shall be rigidly braced, using cross bracing or diagonal bracing with rigid platforms at each work level.

4) The steps of ladder stands shall be slip-resistant.

5) The work level platform of scaffolds (towers) shall be the full width of the scaffold, except for necessary openings. Work platforms shall be secured in place. All scaffold platforms shall meet the requirements of the Construction Safety Orders, Section 1637.

6) All scaffold work levels 6 feet or higher above the ground or floor shall have a toeboard at locations where persons are required to work or pass under the scaffold. (See Section 3210.)

7) All scaffold work levels 30 inches or higher above the ground or floor shall have guardrail protection that meets the requirements of Section 3209 and 3210.

8) A climbing ladder or stairway shall be provided for proper access and egress,

and shall be affixed or built into the scaffold and so located that its use will not have a tendency to tip the scaffold. A landing platform shall be provided at intervals not to exceed 30 feet.

G. Wheels or Casters.

1) Wheels or casters shall be properly designed for strength and dimensions to support 4 times the design working load.

2) All scaffold wheels, casters and swivels shall be provided with a positive locking device, or other effective means to prevent movement of the scaffold.

3) Ladder stands shall have at least 2 locking casters or other means of locking the unit in position. If only 2 casters are used, they shall be of the directional type and if 4 casters are used, at least 2 of the 4 shall be of the swivel type.

4) Locking devices shall be kept in the locked position when workers are climbing or working on scaffolds and ladder stands.

5) Where leveling of the elevated work platform is required, screw jacks or other similar means for adjusting the height shall be provided in the base section of each mobile unit. The screw jack shall extend into its leg tube at least 1/3 its length, but in no case shall the exposed portion of the screw jack exceed 12 inches.

Chapter 47 - Mechanical Guarding

47.1 Introduction and Standards

Mechanical guarding must encompass both the power transmission parts of all mechanical equipment and the points of operation on production machines. Guards must be provided where rotational motion, nip points, and cutting, shearing, punching, and forming mechanisms can cause injury to personnel or damage to tools and equipment. Mechanical guards must be designed or otherwise procured to meet the following specifications: The guard must provide positive protection equal to that specified in ANSI B15.1. The guard must be considered a permanent part of the machine or equipment, capable of being easily or quickly removed or replaced. The guard must not interfere with efficient operation or maintenance of the machine or give discomfort to the operator. The guard must not weaken the machine structure. The guard must be designed for a specific job and a specific machine. The guard must be durable, resistant to fire and corrosion, and easily repaired. The guard must not present hazards, such as rough edges, splinters, pinch points, shear points, or sharp corners. Methods of guarding that must be considered include the following: Enclosing the operation (preferred) Interlocking devices Moving barriers Removal devices Remote control Two-handed tripping devices Electronic safety devices Machines designed for fixed locations must be securely anchored to the floor or bench to prevent walking or tipping. Employees may operate machinery only when properly trained and authorized to do so. Proper clothing and protective devices must be worn when specified by the supervisor or shop foreman. ELECTRICAL TAG OUT PROCEDURE: When you have to do maintenance work on a machine, take these four steps to protect yourself and your co-workers from injury: 1. De-energize the machine if possible. Positively disconnect the machine from the power source. If there is more than one source of power, then disconnect them all. 2. If possible, lock out all disconnect switches. You must be given a lock and a key for each disconnect before you begin working on the machine. 3. Tag all disconnect switches. Use the yellow or Red safety tags which state in large letters -- "Danger.Do Not Operate," or "Danger--Do Not Energize" and gives the name of the individual who locked out the equipment, date and time. The tag must also state "DO NOT REMOVE THIS TAG" (except the person who placed the tag may remove it only after the machinery maintenance has been completed. 4. Test the equipment to insure it is de-energized before working on it. First, attempt to operate the equipment by turning on normally. Next check all electrical lines and exposed areas with test equipment or a "lamp". Finally, short to ground any exposed connections using insulated grounding sticks. This test must be done even if the electrical connection is physically broken, such as pulling out a plug, because of the chance of discharging components. A TAG OUT ONLY PROCEDURE MAY BE USED IF THE MACHINE CAN NOT BE LOCKED OUT. IF THE MACHINE IS SUPPLIED ELECTRICAL POWER FROM A SINGLE SOURCE, WHICH IS UNDER THE EXCLUSIVE CONTROL OF A TRAINED AND QUALIFIED REPAIR PERSON AT ALL TIMES AND THERE ARE NOT ANY OTHER PERSONS IN THE REPAIR AREA WHO COULD BE HARMED BY THE ACCIDENTAL ENERGIZING OF THE MACHINERY, THEN TAG OUT MAY BE USED INSTEAD OF LOCK OUT/TAG OUT. RE-ENERGIZING: Many accidents occur at the moment of re-energizing. If the machinery is to be re-energized, all persons must be kept at a safe distance away from the machinery. The re-energization can be performed only by a

person who either performed the lock-out/tag out, a person acting under the immediate and direct commands of the original lock-out/tag out person, or, in the event of a shift change, or other unavailability of the original person, then the original shall, before leaving, appoint a surrogate original person and show him or her all steps taken to lock-out/tag out the equipment.

Chapter 48 - Ammonia Awareness

Ammonia is a chemical compound containing the elements nitrogen and hydrogen and is present naturally in our atmosphere. Ammonia is often used for agricultural purposes, refrigeration, and a cleaner when dissolved in water. The toxicity of Ammonia varies through the route in which anyone may be exposed to the various forms, such as breathing or contact with the skin.

Eighty percent of ammonia produced in the world is used for agricultural application where it serves as a fertilizer delivered by bubbling into irrigation water or by direct injection into the soil. Less than two percent is used for refrigeration. Other uses for ammonia include the manufacture of dyes, drugs, synthetic fibers, plastics, explosives, and as a component in cleaning materials. Over a million employees and customers of the ammonia industry use it daily, creating a serious potential for accidental release and injury.

48.1 Ammonia Exposure

If a worker is or may be exposed to ammonia during operations and work practices, Alin Machining Company dba Power Plant Services must address the possible ways they may be exposed, and be instructed in the characteristics of ammonia. Workers that may be exposed to ammonia conduct their work;

- In or near industrial ammonia-based refrigeration facilities, machinery rooms, equipment, and or piping.
- In Petroleum Refineries
- With agricultural fertilizer, or conduct their work near the fertilizer.

48.1.a Ammonia Characteristics

Ammonia is a clear, colorless liquid or gas, free from visible impurities. Ammonia can be a liquid while under pressure, while under normal conditions it is a gas with a characteristic pungent and suffocating odor.

48.2 Ammonia Hazard Awareness

Ammonia is toxic and can be a hazard to human health if inhaled at high concentrations. When Ammonia gas is inhaled, effects can range from irritation of the nose and throat that results in runny nose and coughing to severe respiratory injuries like chest pain and severe breathing difficulties, with the possibility of it being fatal if the concentration is high enough. Ammonia is corrosive and will result in a chemical type burn. Ammonia quickly absorbs moisture and will migrate to moist areas of the body like the eyes, nose, throat, and moist skin areas, and will cause harm. If the skin is exposed to liquid ammonia it will result in frostbite and corrosive burns due to its temperature of -28 degrees Fahrenheit at atmospheric pressure. Blistering, tissue death and gangrene may also develop in severe cases. Ammonia gas can irritate, burn, and cause tearing in the eye. If eyes come into direct contact with liquefied gas it can

cause frostbite and corrosive injury to the eye. This may result in severe eye damage, Permanent eye damage, or even blindness.

48.3 Personal Protective Equipment

Alin Machining Company dba Power Plant Services will enforce employees and workers exposed to Ammonia to use the proper equipment to protect themselves from the possibility of skin contact with liquid ammonia or any aqueous solutions of ammonia containing more than 10% of ammonia. Alin Machining Company dba Power Plant Services will also enforce protection from the inhalation of high concentrations of ammonia gas. Employees and workers will be required to use the following protective equipment and clothing:

- A full-face respirator with ammonia cartridges and prefilters
- Lined rubber gloves
- A heavy, long-sleeved shirt
- Long pants
- Boots made of a nonabsorbent material(not leather or canvas)
- A chemical resistant apron

48.4 Emergency Plan

Alin Machining Company dba Power Plant Services will make employees and workers aware of its provisions and plans in case of emergency. Employees and workers will be informed of where ammonia is used and be informed of the safety rules of facilities specific to each site.

Alin Machining Company dba Power Plant Services will address the potential hazards of ammonia releases and of the steps that can be taken to prevent such releases. Employees and workers will be expected to be prepared and respond appropriately if releases do occur. Employees and workers will also be made aware of;

- The potential for leaks of liquefied ammonia, or gas leaks into occupied areas and other areas not associated with the plant room such as ceiling spaces and switchboard areas.
- The prevention of resources and equipment from being exposed to the plant room atmosphere.
- The condition of resources and equipment and how to keep them properly maintained.
- The importance of emergency ventilation and lighting in an emergency situation.
- Emergency shutdown procedures.
- How to safely identify leaks.
- The use, limitations and maintenance of handheld ammonia detectors.
- The required personal protective equipment.
- The provision of appropriate safety equipment.
- The buddy system, especially when accessing confined or enclosed areas containing ammonia equipment.
- The response procedures in place and the responsibilities assigned.

Chapter 49 - Forms

SAFETY TRAINING RECORDKEEPING AND DOCUMENTATION FORM

SAFETY TRAINING LOG

I CERTIFY THAT THE EMPLOYEES LISTED BELOW RECEIVED SAFETY TRAINING IN THE SUBJECT(S) AS INDICATED FOR ALIN Machining Company dba Power Plant Services **.**

LOCATION_____ **DATE**_____

TRAINING SUBJECT (S):_____

IF PERFORMED: TITLE (S) OF FILM (S), VIDEO (S) OR SLIDE PRESENTATION (S) SHOWN TO EMPLOYEES:

_____

ATTACHED IS AN OUTLINE OF THE SPECIFIC ITEMS DISCUSSED IN THIS TRAINING PROGRAM, ALONG WITH HANDOUTS, IF ANY. ISNetWorld does not require that these attachments be submitted for the T-RAVS.

INSTRUCTOR'S NAME (PLEASE PRINT) _____

INSTRUCTOR'S SIGNATURE _____

DATE_____

INSTRUCTOR'S INITIAL	EMPLOYEE NAME (PLEASE PRINT)	EMPLOYEE SIGNATURE

_____ _____ _____

_____ _____ _____

COPIES TO: OFFICE (ORIGINAL) SITE FILE RESPONSIBLE SAFETY OFFICER

Revision Date	Effective Date	Significant Changes	Supercedes
121515	12/15/15	Added Chapter 47 – Mechanical Guarding Added Chapter 48 – Ammonia Awareness	Revision 082115