ACCIDENT PREVENTION PROGRAM

Updated: 6/05/24

SAFETY AND HEALTH POLICY

The purpose of this policy is to develop a high standard of safety throughout all operations of Tapani Inc. and to ensure that no employee or trade partner is required to work under any conditions, which are hazardous or unsanitary. Safety is a *Value* rather than a priority here at Tapani. We believe in acceptance and commitment to safety by choice rather than compliance.

Tapani's policy is that each employee has the right to derive personal satisfaction from their job and the prevention of occupational injury or illness is of such consequence to this belief that it will be considered a core value of this company.

It is our intention here at Tapani to initiate and maintain complete accident prevention and safety training programs. Each individual from top management to the working person is responsible for the safety and health of those persons in their charge and coworkers around them. By accepting mutual responsibility to operate safely, we will all contribute to the well being of our employees.

- **Leigh Tapani, President**

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INTRODUCTION

OVERVIEW

This program is designed to assist Tapani Inc. employees and trade partners in preventing accidents and injuries, or other undesirable situations. This program is intended to work in conjunction with all state and federal laws and regulations to help create a safe workplace.

PROCEDURES

This document contains guidelines for safety procedures. Forms are filed electronically but copies are provided in the Appendix for reference purposes. Supervisors are expected to integrate the procedures provided herein into the appropriate work activity, and employees are expected to apply them on the job.

DISSEMINATION

This program can be viewed at any time by employees or trade partners upon request.

REGULATIONS

Tapani, Accident Prevention Program is designed to meet the requirements of OSHA. OSHA's mission is to assure safe and healthful workplaces by setting and enforcing standards, and by providing training, outreach, education and assistance. Employers must also comply with the General Duty Clause of the OSH Act, which requires employers to keep their workplace free of serious recognized hazards.

Tapani's APP is available at the request of any employee.

RESPONSIBILITIES

Establishing and maintaining an effective safety and health communication system among workers, supervisors and management officials is a key element in a safety program. To this end, all personnel are responsible to assure that their messages are received and understood by the intended receiver. Specific safety and health responsibilities for company personnel are as follows:

MANAGEMENT OFFICIALS

Active participation in and support of safety and health programs is essential. Management officials will display their interest in safety and health matters at every opportunity. At least one manager (as

designated) will participate in the safety committee meetings, incident investigations and inspections. Each manager will establish realistic goals for implementing instructions for meeting the goals. Goals and implementing instructions shall be within the framework established by this document.

SUPERINTENDENTS & FOREMEN

Superintendents and Foremen are safety representatives of Tapani Inc. The safety and health of the employees (including subcontractors) they supervise is a primary responsibility of Superintendents and Foreman. To accomplish this obligation, supervisors will:

- Ensure that all safety and health rules, regulations, policies and procedures are understood and observed.
- Require the proper care and use of all required personal protective equipment.
- Identify and eliminate job hazards quickly through job safety analysis procedures.
- Inform and train employees on hazardous chemicals and/or procedures they may encounter.
- Conduct crew meetings the first five minutes of each work shift to discuss safety and health matters and review Daily Pre-task plan for the workday.
- Conduct walk-around safety inspections at the beginning of each job, and at least weekly thereafter.
- Train employees in the safe and efficient methods of accomplishing each task.
- Review incident trends and establish prevention measures.
- Attend safety meetings.
- Participate in incident investigations and inspections.
- Promote employee participation in the safety and health program.
- Actively follow the progress of injured workers and display an interest in their rapid recovery and return to work.

NEW EMPLOYEE ORIENTATION

The ongoing goal and commitment from management at Tapani Inc. is to make our work environment safe for all of its employees to work in.

- New Employee Orientation is normally scheduled soon after a person is hired.
- This training is normally performed in our main office conference room by the Safety Department and is a mandatory training for all employees.
- Green hard hats are given to all new employees who come to work at Tapani Inc. for a period of time until the Supervisor of that employee on the jobsite feels that the employee is adequately trained in all areas of safe workplace operations.

EMPLOYEE’S RESPONSIBILITIES

The number one asset at Tapani Inc. is our employees and we want them all to go home at night just as safe as when they arrived for work. It is every employee's job to observe these items of responsibility as well as job safety rules which apply to specific task assignments.

- Study and follow safety practices that apply to their work.
- Play an active role in creating a safe workplace; if you see an unsafe practice taking place, speak up.
- Comply with applicable safety rules.
- Make sure that your employees have the proper PPE on, at all times, while performing their tasks and daily work and take proper care of PPE and tools.
- Report to their supervisor any injury or occupational illness.
- Never remove, alter, damage or in any way interfere with the use of safeguards.

Employee input is a valuable tool to achieve productivity safely, thus employees are encouraged to make suggestions regarding their work procedures directly to their supervisors or the company Safety Director.

- Ask your employer to correct the hazard, or to assign other work;
- Tell your employer that you won't perform the work unless and until the hazard is corrected; and
- Remain at the worksite until ordered to leave by your employer

Safety/Supervisors will provide the root cause analysis to the stop work action and identify any potential opportunities for improvement. Safety will publish the incident details regarding the stop work action to all Supervisors and employees outlining the issue, corrective action and lessons learned.

WORKER'S RIGHT TO REFUSE

Construction and industrial sites present many hazards to employees when they are performing work-related activities. The purpose of Tapani's Program is to provide employees and contract workers with the responsibility and obligation to stop work when a perceived unsafe condition or behavior may result in an unwanted event. Employees have the right and responsibility not to perform tasks or activities they feel pose undue risk to themselves, co-workers, or the environment.
Stop work actions take precedence over all other priorities and procedures. It is Tapani's policy that:

- Employees have the authority and obligation to stop any task or operation where concerns or questions regarding the control of health and safety risks exist.
- No work will resume until all Stop Work issues and concerns have been adequately addressed.
- Any form of retribution or intimidation directed at any employee for exercising their authority to stop work will not be tolerated.

JOB COMPETENCY PROGRAM

A Job Competency Program for Health and Safety is designed to ensure that employees possess the necessary skills, knowledge, and attitudes to perform their jobs safely and effectively. This program is particularly crucial in industries where there are potential risks and hazards to health and safety. Here's a general outline of what a Job Competency Program for Health and Safety might include:

IDENTIFICATION OF KEY COMPETENCIES

- Define the specific competencies required for health and safety in your organization.
- Identify relevant regulations, standards, and best practices that employees should be aware of.

TRAINING AND EDUCATION

- Develop training modules covering essential health and safety topics.
- Use various training methods such as workshops, e-learning, simulations, and on-the-job training.
- Ensure that employees understand emergency procedures, first aid, and the proper use of safety equipment.

ASSESSMENT AND EVALUATION

- Implement assessment tools to measure employees' understanding of health and safety concepts.
- Conduct regular evaluations to identify areas for improvement and ensure ongoing compliance.

CERTIFICATION

- Establish a certification process for employees who successfully complete the health and safety training.
- Certifications can serve as proof of competency and may be required for certain job roles.

INTEGRATION WITH JOB ROLES

- Align health and safety competencies with specific job roles within the organization.
- Ensure that employees understand how these competencies apply to their daily tasks and responsibilities.

CONTINUOUS IMPROVEMENT

- Implement mechanisms for continuous improvement, such as feedback loops and regular reviews of incidents or near misses.
- Update the program based on changes in regulations, technology, or industry best practices.

COMMUNICATION

- Develop clear communication channels for health and safety information within the organization.
- Encourage open communication about safety concerns and incidents.

LEADERSHIP INVOLVEMENT

- Engage leadership in promoting and supporting the health and safety program.
- Leaders should lead by example and actively participate in training and compliance efforts.

DOCUMENTATION AND RECORD-KEEPING

- Maintain detailed records of employee training, certifications, and ongoing competency assessments.
- Document any incidents or near misses and the actions taken to address them.

REGULATORY COMPLIANCE

- Stay updated on relevant health and safety regulations and ensure the program complies with legal requirements.

EMPLOYEE INVOLVEMENT

- Involve employees in the development and improvement of the health and safety program.
- Encourage a culture of responsibility and accountability for individual and collective safety.

FEEDBACK MECHANISMS

- Establish mechanisms for employees to provide feedback on the effectiveness of the program.
- Use feedback to make necessary adjustments and improvements.

A robust Job Competency Program for Health and Safety contributes to a safer work environment, reduces the risk of accidents, and ensures that employees are well-prepared to handle potential hazards.

SAFETY MANAGEMENT PLAN

PURPOSE

The subcontractor shall have a comprehensive written safety and health program. All employees shall understand basic elements of this program prior to assignment to the project. The subcontractor's safety plan, depending on scope of their work should address the following elements:

- Safety Policy
- Control Measures
- Safety Inspections/Audits
- Disciplinary Program
- Training Policy
- Project Site Employee Orientation Program
- Recordkeeping Policy
- Accident/Exposure and investigations policy
- Emergency Action Plan
- Site-Specific medical Emergency plan
- Hazard Communication Program
- Written Trenching and Shoring Plan (if applicable)
- Written 100% Fall Protection Plan (if applicable)
- Personal Protective Equipment
- Fire/Explosive or Toxic Release

Post-job performance reviews should be conducted for subcontractors. A combination of factors may be considered including, but not limited to, housekeeping, cost, safety and quality of work.

SUBCONTRACTORS TRAINING REQUIREMENTS

Tapani shall conduct a project specific safety orientation for all subcontractor personnel who work on the project before the personnel are allowed to perform any work. OUR GOAL IS ZERO INJURIES IN THE WORKPLACE SUBCONTRACTOR INCIDENT REPORTING The subcontractor's foreman or superintendent must ensure that all incidents and near misses are reported to Tapani as soon as possible, but in no case more than four hours of the occurrence. The subcontractor's foreman or superintendent will follow up any verbal report with a copy of the subcontractor's incident report. Included with this report shall be any monitoring or corrective action plans. Copies of all incidents reported, including near misses, must be maintained on site.

SUBCONTRACTORS PRE QUALIFICATIONS

Project procurement procedures require that all subcontractors submit pre qualification documentation for evaluation. Subcontractors will be pre-qualified by reviewing their safety programs, safety training documents, and safety statistics. The Project Manager conducts the safety prequalification evaluation.

SUBCONTRACTOR RESPONSIBILITIES

When subcontractors are working on Tapani sites, they are subject to the same safety requirements and standards as Tapani crews. When a subcontractor arrives on site it is required that the competent person at the site talk with them about Tapani safety requirements and standards, such as PPE requirements.

If there are any potentially hazardous items of work that the subcontractor will be working on that were identified in the Task Hazard Analysis, visit with the subcontractor about their plan for performing the work and how they plan to perform the work in a way that reduces the risk of safety incidents. It is also recommended that subcontractors provide their APP. Subcontractors shall be included in pre-job meetings and JSAs/hazard assessments, pre-job meetings and/or tailgate meetings.

All contract employers must respect the confidentiality of trade secret information when the process safety information is released to them.

PROCESS MANAGEMENT - CONTRACTOR RESPONSIBILITIES

PURPOSE

The purpose of Process Safety Management (PSM) is to prevent or minimize consequences of catastrophic releases of toxic, reactive, flammable or explosive chemicals in various industries such as refineries. The requirements of a Process Safety Management Program are outlined in 29 CFR 1910.119. Tapani. employees will perform work at job sites that are covered by this standard. Therefore, the purpose of this written program is to ensure our employees are trained in the practices necessary to conduct their work at PSM covered work sites and to ensure they abide by the safe work practices of the employers that hire us to perform various jobs.

GENERAL

Contractors under the Process Safety Management program are those who are involved in the installation or maintenance of equipment and systems at a facility that has one of the following:

- A process which involves a chemical at or above the specified threshold quantities listed in Appendix A to 29 CFR 1910.119.
- A process which involves a flammable liquid or gas (as defined in 1910.1200) on site in one location, in a quantity of 10,000 pounds (4535.9 kg) or more except for:

- Hydrocarbon fuels used solely for workplace consumption as a fuel (e.g., propane used for comfort heating, gasoline for vehicle refueling), if such fuels are not a part of a process containing another highly hazardous chemical covered by this standard;
- Flammable liquids stored in atmospheric tanks or transferred which are kept below their normal boiling point without benefit of chilling or refrigeration.

As contractors covered under the PSM Program, we will be provided necessary formation concerning the hazardous process, equipment, and procedures of the particular job site our employees are working at.

SPECIFIC REQUIREMENTS

Pre-Work Review

Prior to allowing Tapani. employees to commence work in a process covered under PSM, the following requirements must be completed by the PSM Company we will be doing work for:

- Obtain and evaluate information regarding Tapani's safety performance and programs (written documentation required).
- Inform Tapani Site Foremen or other designated Tapani employee of the known potential fire, explosion, or toxic release hazards related to the work area and processes of the Company.
- Explain the applicable provisions of the emergency action plan to Tapani employees.
- Provide the Site Foreman with copies of local safety programs, safety and emergency procedures and a copy of the PSM program.
- Complete all the requirements of the Company's Contractors Liability Agreement. Inform Tapani. that a periodic performance evaluation will be conducted to ensure our employees are fulfilling our obligations.
- Inform Tapani that a contract employee injury and illness log related to our work in process areas must be maintained on site for the duration of the contract work.

Tapani will provide information to the Contract Employer relating to any unique hazards presented by our employee's work or any hazards found by our employees.

TRAINING

Prior to the start of any work at a facility covered under the PSM standard, Tapani will assure that each employee is trained in the work practices necessary to safely perform his or her job. Tapani will provide the following documentation to each PSM covered facility that we will be performing work at:

- Our safety program information and other documentation required by the Company's Contractors Liability and Safety Agreement.

- Certification that we have informed our employees of potential fire, explosion, or toxic release hazards that may exist at or near their work area at the facility, and that we have explained the Company's Emergency Action Plan to our employees.
- Material Safety Data Sheets will be used to discuss process safety information for the particular site we will be working at.
- Training documentation concerning training provided to our employees to ensure they understand the safe work practices necessary to safely perform tasks.
- Certification that we have explained the Hot Works Permit Program of the Company we are working for and other permits the Company uses that will be needed during their time on company property.
- Agreement to advise the Company we are working for of any unique hazards presented by our work and found during our work.
- Certification that materials, parts and equipment to be installed meet industry and engineering standards for the application used.

Tapani will assure that our employees have been instructed in known potential fire, explosion, or toxic release hazards related to his/her job. The Site Foreman will be responsible for ensuring that each employee has received and understood the required training. Training will be documented and will consist of the employee's name, the date of training, and the means used to verify that the employee understood the training.

SAFE WORK PRACTICES

Tapani employees will be required to abide by PSM employer's safety work practices during operations such as lockout/tagout, confined space entry, opening process equipment or piping, and controls over entrance to the facility. Safe work practices will be covered during site-specific training courses. Training will be documented.

HOT WORK

Before cutting or welding is permitted at a work site, the area must be inspected by the individual responsible for authorizing cutting and welding operations at the Company we are performing work for. Tapani employees will not be allowed to perform hot work until a hot work permit is obtained from the employer's designated representative. The permit shall document that provisions of CFR 1910.252 (a) have been met. See the Hot Work written program for more information about safe work practices.

INCIDENT INVESTIGATIONS

Employees must immediately report all accidents, injuries and near misses to their Site Foreman, who will then notify the correct Company individuals. An incident investigation must be initiated within 48 hours. Resolutions and corrective actions must be documented and maintained for five years.

TRADE SECRETS

Tapani employees must respect the confidentiality of trade secret information when any Process Safety Information is released to them.

SAFETY BULLETIN BOARD

PURPOSE

To increase employee safety awareness and convey the company's safety message. The Safety Bulletin Board for Tapani Inc. is located in the Battle Ground office. Safety bulletin boards are also located in jobsite offices.

THE FOLLOWING ITEMS ARE REQUIRED TO BE POSTED AT JOB SITES

- Annually post state required Labor Law posters
- Emergency Telephone Numbers.

THE FOLLOWING ITEMS ARE REQUIRED TO BE POSTED AT MAIN OFFICE

- Annually post state required Labor Law posters
- Emergency Telephone Numbers
- Citation and Notice If a citation and notice is received, it must be posted until all violations are abated.
- OSHA 300 Summary, February 1 thru April 30 of each year

SAFETY DISCIPLINARY POLICY

Tapani Inc. believes that a Safety and Health Accident Prevention Program is unenforceable without some type of disciplinary policy. Our company believes that in order to maintain a safe and healthful workplace, the employee must be cognizant and aware of all Company, State, and Federal safety and health regulations as they apply to the specific job duties required.

Depending on the severity of the incident, listed below are some processes that can be used. Root Cause Analysis (RCA) and/or Accident Investigation may be initiated by Tapani Leadership to help identify and correct issues.
Safety violations include (a) not following verbal or written safety procedures, (b) guidelines or rules, (c) horse play, (d) failure to wear or abuse of selected PPE, and (e) substance abuse.

- First time violations should be discussed orally between company supervision and the employee. This will be done as soon as possible after the incident. A Letter of Employee Documentation (LED) should accompany this verbal counseling and will be entered into the employee's personnel folder. This does not have to be signed.
- Second offenses should be followed up, using LED form with employee signature. A copy of this written documentation will be entered into the employee's personnel folder.
- Third offenses may result in time off or possible termination, depending on the seriousness of the violation.

PROCEDURE FOR ILLNESS OR INJURY ON THE JOB

LEAD PERSON TAKES CHARGE

When an employee is injured, or becomes ill on the job the Foreman needs to take charge.
NOTE: It is company policy not to drive seriously injured people to the hospital.

- Supervise: There should be only one person in charge.
- Protect the injured person from further injury.
- Administer first aid, as you will. (Good Samaritan Law applies).
- Arrange for transportation (911, ambulance, company vehicle, etc.), depending on the seriousness of the injury.
- Notify your supervisor.
- Notify Safety at 360-702-0600 (Tapani Safety line)
- Do not move anything unless necessary, pending investigation of the incident.
- Accompany injured person to doctor, hospital, home etc. (depending on the extent of injuries).
- Remain with the injured person until relieved by an authorized person.
- When the injured person's immediate family is known, the supervisor, safety or risk manager should notify family members, preferably in person, or have an appropriate person do so.

DOCUMENTATION

- Minor injuries, requiring doctor or outpatient care: After the emergency actions following an injury, an investigation of the incident will be conducted by either the immediate supervisor or

Occupational Safety and Health. Witnesses will be interviewed to determine the causes. If possible, the employee will be interviewed and all findings will be documented in HCSS.

- Major injuries, requiring hospitalization or fatality: Management must see that OSHA is notified within 8 hours of the incident that caused the in-patient hospitalization or fatality. Also, any non-hospitalized amputation or loss of an eye(s) must be reported to the client (host facility) within 24 hours of the incident.
- Investigate: The findings will be documented using Tapani Inc. Root Cause Analysis Form and recorded on the OSHA 300 log, if applicable. Call L&I at 1-800-423-7233 or call OSHA at 1-800-321-6742. Top management will then assist the Department in the investigation.

NEAR MISSES

- All near-miss incidents (close calls) must be reported and investigated.
- Review the findings at the monthly safety meetings or sooner if the situation warrants.

ACCIDENT INVESTIGATION/ROOT CAUSE ANALYSIS (RCA)

When the company is notified of a work-related incident, they shall appoint qualified personnel to complete an investigation of the incident. The investigation should take place as soon as possible after the incident occurs.While all incidents should be investigated, the extent of such investigation shall reflect the seriousness of the incident. First Aids should be investigated, but minimal resources may be required.

The written incident investigation report shall include any immediate corrective actions that were taken as well as any long-term actions that are required to prevent the recurrence of the incident. Lessons learned should be reviewed and communicated. Changes to processes must be placed into effect to prevent reoccurrence or similar events.

The purpose of an RCA is to find the cause of an incident and to prevent future occurrences. The intent here is not to fix blame, but to abate future occurrences. An unbiased approach is necessary to obtain objective findings.

Members of the incident investigation team shall be qualified/competent individuals. The company shall provide training on investigation techniques used during an incident investigation. Personnel must be trained in their roles and responsibilities for incident response and incident investigation techniques.

INFECTIOUS OR CONTAGIOUS DISEASE

Tapani continues to follow the CDC & OSHA guidance.

EMERGENCY RESPONSE PLAN

PURPOSE

To assist supervisors in identifying, responding to, and reporting of the various types of emergencies that may be encountered, furthermore to ensure compliance with State and Federal requirements. This emergency action plan must be available to employees for review.
Review the emergency action plan when the plan is developed, when the employee is initially assigned to a job, when the employee's responsibilities under the plan change, and when the plan is changed.

HAZARDS

For purposes of this document, the following shall be considered as types of emergencies that may be encountered; however these are only representative of and not to be considered as all inclusive.

- Personal (accident/injury)
- Fire
- Earthquake
- Weather (severe cold, rain, snow, wind, etc.)
- Hazardous material exposure
- Cave-ins
- Gas/utility strike
- Heat Exposure
- WildFire Smoke

JOB SITE PROCEDURE

- For all work locations the supervisor (Superintendent or Foreman) shall identify the staging area and emergency signals for the specific job site. Typically this “Rally point” is the Tapani Job trailer or the Tapani Crew truck if no job shack is onsite.
- Emergency evacuation, including type of evacuation and exit route assignments are site specific and are posted in the Site Specific Safety Plan in the job trailer and reviewed with the employees.

FIRST AID

See First Aid section below.

SITE SPECIFIC SAFETY PLAN

See Site Specific Safety Plan section below.

FIRE EVACUATION

See Site Specific Safety Plan section below.

CRISIS MANAGEMENT

In the event of a major crisis on a jobsite we need to be prepared, in the event of a crisis the following steps need to be taken:

- **Remain calm**
- **Call 911-** state your location and the incident
- **Medical Needs –** Medical needs shall be taken care of first and foremost (First aid if appropriate). Ensure the scene is safe to attend to injured persons; further risk to employees is not acceptable.
- **First Notifications –** Notify Safety at 360.702.0600.
    - Safety will give instructions on next steps.
    - Safety will contact Health and Safety Director for instructions with media coverage and dealing with law enforcement
- **Scene Preservation –** Do not move any equipment or disturb the scene. Secure the scene, using red danger tape or red rope to surround the scene.
- **Gather information –** Secure all written logs, notes, diaries, maintenance records, safety meeting notes, etc.
- **Document the scene** – Take pictures from all angles and from all distances. Ensure you have plenty of pictures. Sketch the scene and take measurements.
- **Secure Information -** Keep the information to known facts, do not speculate.
    - Refrain from allowing anyone to talk to the media. Use the following phrases if necessary to the media
    - “We are working on getting the situation under control and cannot respond to questions currently.”
    - “The company spokesperson will be able to respond to any questions after the situation is secured and the facts are known.”
    - NEVER release the name(s) of injured individuals to the media
- **Incident Report** - fill out an incident report

EVACUATION ROUTES

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

- Emergency exits

- Primary and secondary evacuation routes
- Locations of fire extinguishers
- Fire alarm pull stations' location
    - Assembly point
- Site personnel should know at least two evacuation routes.

FIRE EMERGENCY

When fire is discovered:

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

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

FIGHT THE FIRE ONLY IF

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

UPON BEING NOTIFIED ABOUT THE FIRE EMERGENCY, OCCUPANTS MUST

- Leave the building using the designated escape routes.
- Assemble in the designated area (Staging Yard):
- Remain outside until the competent authority (Emergency Coordinator) announces that it is safe to reenter.

SUPERVISORS MUST

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

AREA/FLOOR MONITORS MUST

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

ASSISTANTS TO PHYSICALLY CHALLENGED SHOULD

- Assist all physically challenged employees in emergency evacuation.

INCLEMENT WEATHER

- Alert all employees of the weather conditions, and ask for a status update on whether they are in a safe location.
- If they are at home and are able to work remotely, they should do so until notified that it is safe to travel.
- If they are at a job site, they should find a safe location to wait until it is safe to travel again.
- Locate any necessary emergency equipment or supplies if it is necessary to wait for an extended period of time.

SHELTER-IN-PLACE

- Send out a shelter-in-place alert to everyone in the facility
- Find a safe internal location
- Close and lock all doors and windows between you and the threat
- Sit with your back to an internal wall, and wait until you have been given the all-clear

CYBERATTACK

- Identify the threatened systems and attacking agent
- Notify all required parties and agencies, including law enforcement and affected individuals if necessary
- Secure unaffected systems, as well as physical systems
- Begin efforts to address system vulnerabilities

FIRE EXTINGUISHER POLICY

PURPOSE

Fire extinguishers are a good first attempt device to extinguish a small contained fire. If a fire extinguisher is used properly, it can successfully reduce damage, prevent loss of property, and potentially save lives. Employees are not required or asked to use a fire extinguisher.
Procedure if fire is discovered:

- Pull fire alarm box
- Evacuate the building.

- Call 911

This plan is intended to comply with provisions of WAC 296-800-300 portable extinguishers.

PROCEDURE

- Employees are not required or asked to use a fire extinguisher. Training is available to employees interested in learning how to properly use a fire extinguisher on a voluntary basis and annually thereafter. Only employees who have been trained in the proper use of fire extinguishers, safe fire-fighting techniques, and our procedures can (voluntarily) attempt to fight a small fire if there is a safe means of escape.
- Fire extinguisher program administration will be performed by Safety.
- General safety inspections of extinguishers will be completed by Safety on a monthly basis onsite at Tapani. Inspection on job sites will be completed monthly by the jobsite Superintendents.
- Repairs/replacements and installation of fire extinguishers in the proper locations will be coordinated by Safety. Contact
- Required annual certification/inspection and required hydrostatic and maintenance testing (six and twelve year cycles) will be conducted by a third party fire safety contractor. This service will be coordinated by Safety.

LOCATION & LABELS

- Fire extinguishers will be located in easy to reach locations, usually located and mounted on walls near the entry/exit doors, at the top of stairwells or along corridor walls. Extinguishers will be clearly visible and marked with standard fire extinguisher labels / stickers or box.
- Portable extinguishers will be maintained in a fully charged condition by conducting monthly safety inspections. When extinguishers are removed for charging or maintenance, a fully charged unit will be provided.
- Extinguishers should be mounted for easy access and visibility whenever possible. The top of the extinguisher should be about 3 feet off the floor.
- Extinguishers should be located so that a minimum amount of time will be needed to travel to the fire location in order to prevent the fire from having a significant opportunity to get out of control.
- All Tapani fire extinguishers are a combo ABC extinguisher.
- Class A, B, C, & D extinguishers should not exceed a distance of 75 feet.

Class A – Wood, paper, cloth, etc.

Class B – Flammable gasses, liquids, grease, gasoline. These materials must be vaporized for combustion to occur.
Class C – Electrical equipment or fire in an electrical equipment room.
Class D – Combustible metals (magnesium, potassium, sodium, etc.)

SAFETY INSPECTION PROCESS

- Certification inspections of all fire extinguishers will be conducted on an annual basis. Hydrostatic testing will be conducted according to manufacturers' specifications and/or applicable regulations, typically on a six & twelve year basis. Both of these inspections/certifications will be conducted by an outside vendor specializing in this service and coordinated by Safety.
- In-House Inspections
    - In order to help maintain our fire safety equipment in good working condition, Safety will be involved with a general safety inspection of all fire extinguishers – conducted on a monthly basis for Tapani onsite location and by Superintendents on jobsites.
    - A standard fire extinguisher safety checklist will be used for all general safety inspections.

Monthly Inspection Log												
	January	February	March	April	May	June	July	August	September	October	November	December
Fire Extinguisher												
Locking pin is intact and the tamper seal is unbroken. Examine the extinguisher for obvious physical damage, corrosion, leakage, or clogged nozzle.												
Confirm the pressure gauge or indicator is in the operable range or position												
Make sure the operating instructions on the nameplate are legible and facing outward.												
Check the last professional service date on the tag. (A licensed fire extinguisher maintenance contractor must have inspected the extinguisher within the past 12 months.)												
Initial and date the back of the tag.												
First Aid												
check expiration dates												
Restock inventory												
AED												
Check for green flashing light												
Check expiration date on pads												
Eye Wash												
Run eyewash station for 1 minute												

INVENTORY

- A complete inventory of all Tapani onsite fire extinguisher locations will be maintained by Safety.
- Small tools carry fire extinguishers for Foreman and Superintendents to keep on their trucks.

FIRST AID

PURPOSE

To afford our employees immediate and effective attention should an on the job injury occur. First aid training, kits, and procedures used are in accordance with the requirements of the general safety and health standards WAC 296-800-15220.

DESIGNATED FIRST-AIDERS

Tapani will ensure that we have first aid qualified workers available. Tapani does not have designated first-aiders. First aid at the job site is given on a Good Samaritan basis.

FIRST AID TRAINING

All supervisors or persons in charge of crews will be American Red Cross first aid trained unless their duties require them to be away from the jobsite. If so, other persons who are certified in first aid will be available on site.

FIRST AID KITS

First aid supplies shall be easily accessible. At least one First Aid kit shall be in, but not limited to, all Tapani work trucks, Conex and Jobsite Trailers.

- First aid kits shall consist of appropriate items which will be adequate for the environment in which they are used. Items shall be stored in a weather proof container with individual sealed packages of each type of item.
- First aid kits supplies shall be inspected to ensure they are adequately stocked.
- Eye Wash stations and/or flush kits shall be stored in job trailers or where appropriate in the crew truck and periodically throughout a jobsite appropriate to employee exposure hazards. If flush gets used, replace and dispose.
- 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.
- Posters listing emergency numbers, procedures, etc. will be located strategically in areas where employees have easy access.

BLOOD-BORNE PATHOGENS:

- All bodily fluids should be considered infectious. Universal precautions involve the use of PPE and sanitary procedures (such as hand washing and cleaning work surfaces) to limit potential for exposure. Personnel involved in a situation involving blood, they should:
    - Avoid skin contact with blood/other potentially infectious materials by letting the victim help as much as possible, and by using gloves provided in the first aid kit.

    - If you do come into contact with blood, wash thoroughly with soap and water to remove. A 10% min. chlorine bleach solution is good for disinfecting areas contaminated with blood (spills, etc.).
    - All equipment and surfaces must be cleaned if they come into contact with blood or other infectious material.
    - Report such first aid incidents within the shift to supervisors (time, date, blood presence, exposure, names of others helping).
- When provision of handwashing facilities is not feasible, the employer 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.
- For questions or concerns on Blood-borne Pathogens contact your supervisor.
- Employees who may be exposed to bodily fluids must be trained on bloodborne pathogens when they start their job and every year thereafter. Training must be documented and maintained for a minimum of 3 years.
- The Hepatitis B vaccine is available to all employees that have occupational exposure at no cost to the employee(s).

SITE SPECIFIC SAFETY PLAN

A Site Specific Safety Plan is to be produced by the project team to include site specific information. This form is to be used for all projects. A copy of this plan will be available at each job trailer. The special provisions included in this safety plan shall be part of every employee's orientation upon coming to this job site. It is the responsibility of the project manager to ensure that every employee is aware of the information contained in this plan.

Plan Includes

- Nearest hospital
- Ambulance, Fire and Police Contact Numbers
- Location of First Aid & Fire Extinguisher
- SDS Location
- PPE Required
- Spill Prevention
- Account for all employees after evacuation
- Evacuation Notification
- Emergency Evacuation

You can find templates for Site Specific Safety Plan in the safety section of the Project Management Library and Forms.

JOB HAZARD ANALYSIS(JHA)

Before each project begins, it is required to perform a JHA with the safety officer. As the Superintendent and safety officer walk the site and discuss the work that will be performed, safety hazards can be identified, to minimize the danger of employees and the public on the site and reduce the risk of incidents.

WORK CREW SAFETY MEETINGS

At Tapani Inc. we believe that hard work and perseverance are required for the prevention of injuries and illnesses, with the Crew Leader being the key to a successful result.

PURPOSE

The purpose of crew safety meetings is to bring safety to the forefront of workers minds. Crew leaders are the first line of supervision for workers and a crew leader has a unique impact on a crew's safety culture. Safety meetings assist in the detection and elimination of unsafe conditions and procedures in the workplace.

PROCEDURES

- Safety meetings are held at the beginning of each job and every Monday @ 7am thereafter. It is important that the crew leader talk daily on injury prevention and immediately upon witnessing an unsafe act.
- Attendance and subjects discussed, will be documented and maintained on file for one year.
- Copies will be made available to the employees upon request.

SCOPE OF ACTIVITIES

Crew leaders will conduct onsite safety meetings and safety inspections on the following schedule:

- **Pre-Job Walk Through:** Walk the crew through the job site before work begins to familiarize the crew with specific job site hazards like low hanging overhead power lines.
- **Weekly Safety Agenda:** Hold weekly crew safety meetings every Monday @ 7am and discuss the safety agenda put out by the company safety department. All workers present must sign this agenda.

    - Once the meeting is complete, the Foreman is required to submit the attendance form (found in Keystyle) with every crew member's signature.
- **Daily Pre-task Plan Meeting/Huddle**: Hold a crew safety meeting daily and walk the area that will be worked on that day. (NOTE: Look for things like utility locations or other hazards).
- Conduct and report a near miss and other incidents
- Promote and publicize safety, <u>always!</u>

GENERAL SAFETY RULES FOR CONSTRUCTION

DRUGS & ALCOHOL

The Company is dedicated to providing employees with a workplace that is free of drugs and alcohol. For the safety of our employees and clients, the Company reserves the right to test any employee for the use of illegal drugs, marijuana, or alcohol under state, federal, or local laws. This may be done in cases where the employee's job carries a risk of injury or accident due to such use, or if there is an apparent inability to perform the duties required of that position. Specific jobs may, at the Company's discretion, require regular drug testing. Drug or alcohol tests may be conducted after an accident or with reasonable suspicion of impairment while on the job. Under those circumstances the employee may be driven to a certified lab for the test at the Company's expense.

Any employee found intoxicated or, using, selling, possessing or distributing drugs that are illegal under state, federal or local laws, including marijuana, or any unauthorized drugs (including excessive quantities of prescription or over-the-counter drugs) while on the Company premises, performing Company-related duties, or while operating any Company equipment is subject to disciplinary action, up to and including termination of employment. Any suspected illegal drugs confiscated will be turned over to the appropriate law enforcement agency.

- If reasonable suspicion of an employee under the influence arises, immediately contact your Supervisor and report the suspicion.
- Under the terms of the Drug-Free Workplace Act, an employee must notify the employer within five calendar days if he or she is convicted of a criminal drug violation.
- Under the terms of the Drug-free Workplace Act, the employer has 10 days to report that a covered employee has been convicted of criminal drug violation. (WWSP)

Any employee taking medication must consult a medical professional to determine whether the drug may affect their personal safety or ability to perform the essential functions of the job and must advise their supervisor or manager of any job limitations. Upon notification of job limitations, the Company will make reasonable efforts to accommodate the limitation.

TOBACCO USE

Eating, drinking or the use of tobacco products or any practice that increases the probability of hand-to-mouth transfer and ingestion of materials shall be prohibited in areas where hazardous materials are present. Smoking is prohibited around flammable and combustible materials, public buildings, or adjoining employers. Smoking is only allowed in designated areas.

MATERIAL STORAGE

- Always store materials in a safe manner.
- Tie down or support supplies to prevent them from rolling, or shifting.
- Waste materials should be properly stored and handled to minimize the potential for a spill or impact to the environment. During outdoor activities, receptacles must be covered to prevent dispersion of waste materials and to control the potential for run-off.

TRASH/REFUSE

- Good housekeeping is a part of the job. Do not allow scraps or tools to accumulate in the work area.
- Trash piles must be removed as soon as possible. Trash is a safety and fire hazard.
- Employees must be instructed on the proper handling, storage and disposal of wastes. This may include general instruction on disposal of non-hazardous wastes, trash or scrap materials. If wastes generated are classified as hazardous, employees must be trained to ensure proper disposal.
- The employer should encourage proper segregation of waste materials to ensure opportunities for reuse or recycling.

IMPALEMENT HAZARDS

- Remove or at least bend over all exposed nails.
- Employees will be protected from falling into or onto impalement hazards, such as reinforcing bars, exposed steel or wooden stakes. (WAC 296-155-24607)

LONE WORK

Tapani does not support a Lone Work Policy. At least two employees must be present at all times.

TRIPPING/FALLING HAZARDS

- Immediately remove all loose materials from stairs, walkways, ramps and platforms.
- Do not block aisles, traffic lanes, fire exits, stairs or doors.

- Avoid shortcuts, jumping over or stepping over things, use ramps, stairs, walkways and ladders.
- Guardrails must be erected around all manhole and floor openings. Cover holes with sturdy plywood and write “HOLE” on the cover.

SITE SECURITY

- Secure job sites with fencing, whenever possible.
- Excavations must be barricaded when left overnight. Steel sheets or Fencing.
- Block conex boxes with a PIN coded machine.
- Provide lighting; where possible, to deter theft.
- Do not leave locks open. Always close and lock locks to the chain or latch during the day. Thieves will replace an open lock with a look alike lock and then come back at night to steal.

TOOLS

- Do not interfere with any form of protective device or procedure.
- Keep all tools at least 2 feet away from the edges of manholes, scaffolding, work platforms and trenches.
- Do not use tools with split, broken, loose or missing handles.
- Do not use tools that are mushroomed or are otherwise damaged.
- Know the correct use of hand and power tools. Use the right tool for the job.
- Proper guards or shields must be installed on all power tools before use. Do not use any tools without guards that are in their proper working condition.
- No “homemade” handles or extensions (cheaters) will be used!
- Do not use power tools unless you have been trained to use them.
- All electrical power tools, and equipment must be properly grounded or double insulated.
- All electrical extension cords must be properly grounded.
- Inspect cords before use. Do not use damaged cords.
- Follow manufacturer recommendations when using tools.

DRIVING POLICY

Driver Qualification

The establishment of effective driver qualification control is important to the successful operation of the fleet. The opportunity to select the right employee for the driving task depends largely on management's ability to develop standards which reflect the prerequisites and skills necessary for satisfactory job performance while taking into consideration applicable federal and state regulations with which the company must comply.

This company has implemented three levels of driver qualification criteria. Use of any or all of these criteria is dependent upon the nature and scope of the operation of each division/location.

- State-regulated driver qualification parameters must be met. Regulatory information shall be obtained from applicable state departments of transportation and motor vehicle services.
- Where applicable drivers shall comply with D.O.T. Commercial Driver License (CDL) regulations.
- Drivers involved in interstate or foreign commerce in vehicles with a Gross Motor Vehicle Weight Rating (GMVR) of 10,001 pounds or more, designed to transport 16 or more passengers, including the driver, or used in the transportation of hazardous materials in a quantity requiring placarding under the D.O.T. Hazardous Materials Regulations, are subject to the requirements of the D.O.T. Federal Highway Administration's Federal Motor Carrier Safety Regulations.

The driver selection process includes the development of a driver qualification file. Componentsof this file are dependent upon applicable federal and state recordkeeping regulations, and generally include copies of the following:

- Driver's application
- Interview notes
- Motor vehicle record(s)
- Inquiries to past employers
- Physical examination certificate
- Written examination/road test certificates
- Driver training information

All types of fleets should maintain a driver qualification file. Forms can be obtained on-line at www.fhwa.dot.gov.

DRIVER PERFORMANCE

A review of the driver's over-the-road performance is a critical component of this company's fleet risk control program. Performance shall be monitored during the selection/screening process as well as at periodic intervals through the driver's career using information obtained from motor vehicle records and accident file data.

A formal review of the driver's motor vehicle record (MVR) shall be conducted on an annual basis (more frequently where warranted). The MVR can be a valuable tool to validate the driver's license (CDL or other) as well as review the driver's past record. The purpose of the review is to determine whether remedial driver training is warranted. The review is conducted with the driver, and becomes part of his/her file, as referenced above.

The following criteria, developed by CNA as a model for program development purposes,

A driver is unacceptable if the driver's accident/violation history in the past three years:

- Includes one or more of the following violation convictions:
    - Driving under the influence of alcohol or drugs
    - Hit and run

    - Failure to report an accident
    - Negligent homicide arising out of the use of a motor vehicle
    - Operating during a period of suspension or revocation
    - Using a motor vehicle for the commission of a felony
    - Operating a motor vehicle without the owner's authority
    - Permitting an unlicensed person to drive
    - Reckless driving
    - Speed contest
- Consists of any combination of preventable accidents and moving violation convictions which total three.

ALCOHOL/DRUG TESTING

This company's alcohol and drug testing procedures have been developed and implemented in compliance with Federal Highway Administration (FHWA) regulations promulgated through the Department of Transportation. It is understood that local facilities will modify the corporate program based on applicable state/local alcohol and drug testing regulations developed for interstate and/or intrastate transportation.

The alcohol/drug testing program is composed of the following elements:

Testing

- Pre-employment
- Reasonable Cause
- Post-accident
- Random

Record Retention

Employee Assistance Program

Medical Review Officer

It is important to note that facility-oriented alcohol/drug testing programs shall be reviewed and evaluated by appropriate legal counsel prior to implementation.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

PURPOSE

To establish the responsibilities and requirements for the use of personal protective equipment (PPE), and to ensure compliance with Federal and State requirements.

RESPONSIBILITY

The Key Supervisor shall be responsible for the following:
Evaluating hazards and identifying required PPE through the use of a Site Specific Safety plan, a Job Hazard Analysis (JHA), and/or a Pre-Task Plan.

- Providing adequate PPE for all employees. All PPE must be properly fitted to each individual. PPE includes protective equipment for eyes, face, head, hearing, protective clothing, respiratory, and shields/barriers.
- Wear a minimum of a short sleeved shirt, long pants, substantial footwear and safety glasses. Additional PPE may be required as needed.
- Ensuring that all employees, visitors, and vendors who use PPE are properly trained on proper use and requirements for the PPE required.
- Retraining of the employee(s) is when the workplace hazards change, making the earlier training obsolete, the type of PPE required changes or when an employee demonstrates lack of use, improper use, or insufficient skill or understanding.

GENERAL REQUIREMENTS

PPE is not a substitute for engineering and administrative controls. Engineering controls shall be implemented first, to the extent feasible, to mitigate the hazard. If engineering controls are not feasible, then administrative controls shall be implemented to the extent feasible. If neither engineering nor administrative controls are not feasible then PPE shall be required to minimize risk of injury. The PPE employees use must be kept clean and not give the employees risk of illness.
PPE shall be given to employees in accordance with state or federal requirements. PPE shall be specified on the following pre job planning documents (as appropriate) based on the activity and associated hazards:

- Site Specific
- Pre-Task Plan
- Job Hazard Analysis
- Fall Protection Work Plan
- Confined Space Entry Permit
- Welding, Cutting and heating Permit

PPE shall meet the requirements of the applicable American Standards Institute (ANSI) Standards. PPE that is in disrepair must be discarded or removed from service until repaired.

HEAD PROTECTION

- Except when riding in covered over-the-road type vehicles, head protection meeting the requirements of ANSI Z89.1 shall be worn by all personnel, unless otherwise specified in pre-job planning documents.
- All persons exposed to overhead hazards shall wear nonmetallic hard hats.
- Hard hats that are defective (i.e., cracked, punctured, altered, etc.) shall be removed from service.
- Welders shall wear hard hats at all times. Where there is no potential for overhead hazards, this requirement may be waived following the Safety Departments evaluation/justification.
- Hardhats shall be worn with the brim pointed forward unless the hardhats are designed to be worn with the brim pointed backwards. Alterations or modifications of the hardhat or hardhat liner shall be prohibited. Western-Style hardhats shall not be permitted.

EYE AND FACE PROTECTION

- Safety glass eye protection meeting the requirements of ANSI Z87.1 shall be worn by all personnel working in, visiting, or passing through construction areas and other locations where safety glass requirements are posted or indicated in pre job planning document(s).
- Safety glasses shall be equipped with side shields.
- Additional eye and face protection (goggles, face shields, etc.) is required for certain work activities, such as grinding, using chop saws, cut-off saws, gas ax or handling chemicals, etc., and shall be specified in the pre job planning documents.
- Wearers of prescription glasses that do not meet specifications of ANSI Z87.1 are required to wear goggles or other ANSI-approved eye wear.
- Visitors shall be provided with ANSI-approved eye protection when in areas where eye protection is required.
- Safety glasses (or other appropriate safety eye protection) shall be worn under face shields and welding hoods/helmets.

HEARING PROTECTION

Tapani will take steps to eliminate and minimize high levels of noise. When it is not feasible to reduce noise levels to less than 85 dBA, hearing protection shall be furnished and worn in accordance with AISH 23. See Hearing Protection Policy.

NOTE:

- Earbuds do not take the place of hearing protection.
- Earbuds are not allowed on any Tapani jobsite that requires team communication or safety sensitive tasks and/or at the discretion of the supervisor.

FOOT PROTECTION

The following criteria are mandatory for foot protection if you work in the following departments; field, trucking, mechanics, fabrication, machine shop, small tools, and flagging.

- Full leather Boot (boot height needs to be above the ankle bone).
- Boot must have a traction sole.
- Other forms of protective footwear such as muck-boots and concrete boots shall be worn when necessary.

HAND PROTECTION

Tapani will provide protective equipment for the hands of employees in accordance with the PPE hazard assessment.

RESPIRATORY PROTECTION

See Respiratory Protection Policy.

HIGH VISIBILITY GARMENTS

High Visible class 2 vest shall be worn any time heavy equipment is on the job site.

WORKING OVER OR ADJACENT TO WATER

- When an employee is employed under conditions which expose them to a risk of drowning, they must wear a U.S. Coast Guard approved life saving device, unless it can be shown that conditions, such as shallow water, are such that flotation would not be achieved.
- At least one lifesaving skiff must be immediately available when feasible at locations where employees are working over or adjacent to water.
- Buoyant life saving devices must be inspected before and after each use.
- Ring buoys with at least 90 feet of line must be provided and readily available for emergency rescue operations. Distance between ring buoys must not exceed 200 feet.

HAND AND/OR POWER TOOLS

PURPOSE

Tools are such a common part of our lives that it is all too easy to forget that they may pose serious hazards. As an employer, Employees must learn to recognize the hazards associated with different types of tools and the safety precautions necessary to prevent those hazards from occurring. Our employees also have the responsibility of properly using and maintaining those tools.

BASIC SAFETY PRECAUTIONS

- Our employees will be trained in the use of all required tools. They should understand any potential hazards as well as the safety precautions required when using tools.
- Use the right tool for the job. Do not use a tool that was not designed for a task you are about to do. Substituting an improper tool increases the chance of hurting yourself and others, and also contributes to poor quality work. Always select the proper sized tool.
- Appropriate personal protective equipment, (e.g., safety goggles, gloves, etc.), should be worn due to hazards that may be encountered while using portable power tools and hand tools.
- Always follow the manufacturer's instructions when using any tool.
- If safety devices (guards) are provided with the tool, they must be maintained in good working order and must be used.
- Avoid wearing neck chains, rings, watches and other jewelry that might become snagged in tools, machines and other moving equipment.
- Floors must be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand and portable power tools.
- Around flammable substances, sparks produced by iron and steel hand tools can be a dangerous ignition source. Where this hazard exists, spark-resistant tools made from brass, plastic, aluminum, or wood will be provided for safety.
- All tools must be inspected and be in good working condition before use.
- Remove any damaged tools immediately from use, and report them to your supervisor.
- Position yourself so that a tool that falls or slips won't cause an injury to you or your co employee. Keep yourself out of the "line of fire".
- Carry tools with sharp edges away from your body.
- Do not leave tools lying around to prevent tripping hazards and/or damage to the tool.
- Pick up your tools and clean them off before storing them after each task.

TOOL SAFETY-PNEUMATIC & POWDER ACTUATED

Creating a comprehensive tool safety policy for pneumatic and powder-actuated tools is crucial to ensure a safe working environment. Below is a general outline that you can use as a starting point. However, please consult with relevant safety experts and local regulations to tailor the policy to your specific needs.

PURPOSE

Clearly state the purpose of the tool safety policy, emphasizing the importance of preventing accidents and promoting a safe working environment.

SCOPE

Define the scope of the policy, specifying the types of pneumatic and powder-actuated tools covered.

RESPONSIBILITIES

Clearly outline the responsibilities of both employees and management regarding tool safety.
Employees:

- Must follow all safety guidelines and procedures.
- Report any damaged or malfunctioning tools immediately.
- Use personal protective equipment (PPE) as required.
- Attend training sessions on tool safety.

Management:

- Provide proper training for employees.
- Regularly inspect and maintain tools.
- Ensure the availability of appropriate PPE.
- Investigate and address reported safety concerns promptly.

TRAINING

Describe the training program for employees, covering topics such as:

- Proper tool usage.
- Inspection and maintenance procedures.
- Recognizing and addressing potential hazards.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Specify the necessary PPE for working with pneumatic and powder-actuated tools, such as safety glasses, hearing protection, and gloves.

TOOL SELECTION

Provide guidelines for selecting the right tool for the job, considering factors like:

- Tool capacity and power.
- Material compatibility.
- Environmental conditions.

INSPECTION AND MAINTENANCE

Outline procedures for regularly inspecting and maintaining tools, including:

- Daily pre-use inspections.
- Scheduled maintenance.
- Record-keeping for inspections and repairs.

OPERATING PROCEDURES

Clearly define safe operating procedures for each type of tool, including:

- Loading and unloading procedures.
- Safe distances and angles.
- Proper handling techniques.

STORAGE AND TRANSPORT

Provide guidelines for storing and transporting pneumatic and powder-actuated tools safely.

EMERGENCY PROCEDURES

Detail the steps to be taken in case of accidents or malfunctions, including:

- Emergency shutdown procedures.
- First aid protocols.
- Reporting incidents to the appropriate personnel.

REGULATORY COMPLIANCE

Emphasize the importance of complying with local and national regulations regarding the use of pneumatic and powder-actuated tools.

REVIEW AND REVISION

Establish a schedule for periodic reviews and updates to the policy, ensuring it remains current and effective.

Note: Always consult with legal and safety professionals to ensure that your safety policy complies with local regulations and industry standards.

ON-SITE SPILL PREVENTION AND NOTIFICATION

Tapani employees are trained to implement spill prevention practices for work with and around oil sources. Spill prevention practices are to be used at all times to minimize the potential for a release of oil.

- Keep container lids securely fastened at all times.
- Spill kit on all job sites and readily available.
- Do not leave portable sources unattended (outside).
- Return portable sources to their storage locations after use.
- Use pads, drip pans, and funnels when transferring petroleum products from a portable container.
- Protect oil sources from damage that could be caused by moving equipment.
- All chemicals are held within 110% containment when exposed to elements.
- Keep secondary containment valves closed at all times except when discharging clean stormwater.
- Stormwater accumulated in the secondary containment areas with visible sheen is pre-treated using absorbent pads that soak up the sheen and discharged through an oil/water separator.
- Do not store oil sources near catch basins or floor drains.
- Loading and unloading of petroleum products shall be attended at all times.

Spill prevention during oil deliveries (offloading) is the primary responsibility of the supplier until the product is safely in the tank or vessel.

ALL spills must be **immediately** reported so that notification of authorities (if necessary) can be initiated.

LADDER SAFETY

PURPOSE

The purpose of this plan is to provide guidance and to ensure the safety of workers working with ladders. Falls from ladders are a serious concern in the construction industry.

HAZARDS

- Falls.
- Electrocution.
- Objects striking workers below.

ALL LADDERS

- Inspect ladders before use for defects and damage.
    - Bent Rungs
    - Loose Rivets
    - Damaged brackets
    - Missing or damaged ladder foot
    - Cracked or split side rails
- Portable and fixed ladders that are unsafe to use must be immediately marked to show they are unsafe to use or be tagged with "Do Not Use" or similar language. They must be taken out of service until they are repaired.
- Ladders are not to be painted, except for numbering purposes.
- Do not use ladders for gangways, walkways, or ramps.
- When ascending or descending a ladder, do not carry objects that will prevent you from grasping the ladder with both hands. Always maintain 3 points of contact.
- Always face the ladder when ascending and descending.
- If you must place a ladder over a doorway, barricade the door to prevent its use and post a warning sign.
- Only one person is allowed on a ladder at a time.
- Do not jump from a ladder when descending.
- All ladders must have Safety Feet and they must be in good working order.
- Rungs must be free of mud, concrete, grease and oil.
- Inspect ladders for damage, or obscured stickers, do not use damaged ladders.
- The area around the top and bottom of the ladder must be free of tripping hazards.
- All ladders must have a minimum rating of 1A. (300 lbs or greater weight capacity)
- Portable ladders shall have non conductive side rails if they are used where the employee or the ladder could contact exposed energized parts.

STEPLADDERS

- Do not place tools or materials on the steps or platform of a stepladder.
- Do not use the top <u>two</u> steps of a stepladder.
- Always level all four feet and lock spreaders in place.
- Do not use a stepladder as a straight ladder.
- Inspect ladders for damage, or obscured stickers, do not use damaged ladders.

STRAIGHT AND EXTENSION LADDERS

- All straight and extension ladders must extend at least three (3) feet beyond the top of the trench or roof.

- Ladders must be used at such a pitch that the horizontal distance from the wall to the foot of the ladder is about one-quarter of the working length of the ladder (4 to 1 rule)
- All extension or straight ladders must be secured or tied off.

FALL PROTECTION

PURPOSE

Falls from elevation are a major cause of injuries and deaths in the construction industry. We at Tapani Inc. are committed to eliminating injuries caused by fall hazards. The purpose of this plan is to provide guidance and implement fall protection requirements.

GENERAL REQUIREMENTS

All surfaces on which employees will be working or walking on must be structurally sound and able to support them safely. Training must be provided for each employee who might be exposed to fall hazards. Training must enable each employee to recognize the hazards of falling and the procedures to follow to minimize these hazards. Records showing participants, training dates and signatures of instructors must be maintained. Re-training should be provided when there are deficiencies in training, when work practices are changed or when fall protection equipment is modified.

FALL PROTECTION REQUIRED REGARDLESS OF HEIGHT

Regardless of height, guard open sided floors, walkways, platforms, or runways above or adjacent to dangerous equipment with a standard guardrail system.

- Guard floor holes, floor openings or manhole openings into which persons can accidentally walk, by either a standard railing or a cover of standard strength that is secured against accidental displacement. While the cover is not in place, you must protect the hole opening by a standard railing.
- Protect employees from falling into or onto impalement hazards, such as: Reinforcing steel (rebar), or exposed steel or wood stakes used to set forms. By placing rebar caps on them or using other protective means.

FALL PROTECTION REQUIRED AT FOUR (4) FEET OR MORE

- An appropriate fall protection system will be provided when employees are exposed to fall hazards of four (4) feet or more in Washington, or six (6) feet or more in Oregon.

- Guarding of walking/working surfaces with unprotected sides and edges will be provided. You must guard every open sided walking/working surface or platform four (4) feet or more above adjacent floor or ground level by one of the following fall protection systems.
    - Standard guardrail system.
    - Fall restraint system.
    - Personal fall arrest system.
    - Safety net system.
    - Catch platform.
    - Warning line system.

FALL PROTECTION REQUIRED AT TEN (10) FEET OR MORE

Tapani will ensure that an appropriate fall protection system is provided when employees are exposed to fall hazards of ten (10) feet or more. A fall protection work plan will be developed for each area where workers will encounter fall hazards of ten (10) feet or more.

Fall protection work plan. You must develop and implement a written fall protection work plan including each area of the workplace where the employees are assigned and where fall hazards of 10 feet or more exist. **The fall protection plan is available in your Daily Pre Task Plan.** The investigation will look at the fall protection plan to see if any updates are needed to keep the incident from happening again.

Fall protection will be provided either through the use of a fall arrest system or a fall restraint system and thoroughly described in a fall protection work plan available on the jobsite site for review. Equipment and services for prompt rescue of fallen workers must be available before elevated work begins. Local fire departments may not have the means to perform safe and efficient rescue, so do not assume they are able to do so.

All employees will use fall protection when there is exposure to a fall hazard. Employees who fail to follow this policy are subject to disciplinary action.

GUARDING OF EXCAVATIONS, SHAFTS, WELLS, AND PITS

- Employers must use guardrail systems, fences, or barricades to protect any employee who might approach the edge of an excavation, when the excavation is 4 feet or more in depth (6 feet or more in Oregon) and is not readily seen because of plant growth or other visual barrier.
- You must provide walkways with guardrails where employees, or equipment, are required to cross over excavations.

RAMPS, RUNWAYS, INCLINED WALKWAYS

- Ramps, runways, and inclined walkways must be at least eighteen (18) inches wide and not inclined more than 20 degrees from the horizontal, and when inclined must have cleats to aid traction. WAC 296-155-24619.
- Ramps, runways, inclined walkways that are four (4) feet or more above the lower level must be equipped with a standard guardrail system along each open side. Wherever tools, machine parts, or materials are likely to be used, a toe board must also be installed on each open side to protect persons working or passing below. WAC 296-155-24609.

NOTE: Runways used exclusively for special purposes may have the railing on one side omitted where operating conditions necessitate such omission, providing the falling hazard is minimized by using a runway not less than eighteen (18) inches wide.

FLOOR AND MANHOLE OPENINGS

Guard floor openings with one of the following options:

- Guardrail system, on all open sides, except where there is an entrance to a ramp, stairway, or fixed ladder. The railing must be provided with a toe board wherever falling tools or materials could create a hazard.
- Cover must be designed to carry a load that is <u>two and a half times</u> the intended load and not less than 200 pounds with the word “Hole” on it. Covers must be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees.
- Warning line system erected 15 feet from all unprotected sides or edges of the opening.

NOTE: If it becomes necessary to remove the cover, the guardrail system, or the warning line system, then an employee must remain at the opening until the cover, guardrail system, or warning line system is replaced.

WALL OPENINGS

You must guard wall openings, from which there is a fall hazard of 4 feet or more, and the bottom of the opening is less than 39 inches above the working surface with a standard rail. Barriers must be of such construction and mounting that, when in place at the opening, the barrier is capable of withstanding a load of at least 200 pounds.

FALL PROTECTION DURING FORM AND REBAR WORK

When exposed to a fall height of 4 feet or more, employees placing or tying reinforcing steel on a vertical face are required to be protected by personal fall arrest systems, safety net systems, or positioning device systems.

FALL PROTECTION ON ROOFS AND SLOPES

- Regardless of the work activity, you must ensure that employees exposed to fall hazards of four (4) feet or more while working on a roof with a pitch greater than 4 in 12 use one of the following:
    - Fall restraint system.
    - Fall arrest system;
    - Positioning device system.
    - Safety monitor and warning line system and Safety watch system. **(Low pitch roofs less than 4 in 12 only)**

NOTE: Safety monitors and warning line systems are prohibited on steep pitched roofs.

- Hazardous slopes. Employees exposed to falls of four (4) feet or more while working on a hazardous slope will use personal fall restraint systems or positioning device systems.

NOTE: Refer to WAC 296-155-615 for Fall Restraint Specifications.

INSPECTION OF FALL PROTECTION GEAR

Employees will inspect their fall protection equipment and gear before every use. Look for cuts, frays, and abrasion as well as bent hardware or rust. Follow the manufacturers recommendations regarding maintenance, cleaning and storage. Fall protection gear will be annually inspected by a safety officer and records kept for each item in Tool Watch.

FALL RESTRAINT

Fall Restraint Specifications:

Personal fall restraint systems must be rigged to allow the movement of employees only as far as the unprotected sides and edges of the walking/working surface, and must consist of:

- A full body harness.
- Full body harnesses must be attached to securely rigged restraint lines.
- Hardware assemblies must be capable of withstanding a tension loading of 4,000 pounds without cracking, breaking, or taking a permanent deformation.
- Ensure component compatibility.
- Anchor points used must be capable of supporting 4 times the intended load**.**
- Rope grab devices are prohibited for fall restraint applications unless they are part of a fall restraint system designed specifically for the purpose by the manufacturer, and used in strict accordance with the manufacturer's recommendations and instructions.

GUARDRAILS

- Guardrail systems must consist of top and intermediate rail, with posts, and must have a vertical height of 39 to 45 inches from the upper surface of top rail to floor.
- The intermediate rail must be halfway between the top rail and the floor.
- The ends of the rails must not overhang the terminal posts except where such overhang does not constitute a projection hazard.
- Minimum requirements for standard guardrail systems under various types of construction are specified in the following items:
    - Wood railings:
        - Posts must be of at least two-inch by 4-inch stock spaced not to exceed 8 feet.
        - Top rail must be of at least two-inch by 4-inch stock and each length of lumber must be smooth surfaced throughout the length of the railing.
        - Intermediate rail must be of at least one-inch by 6-inch stock.
    - Pipe railings, posts and top and intermediate railings must be at least 1 1/2 inches nominal OD diameter with posts spaced not more than 8 feet on centers.
- Anchoring: Anchoring of posts and framing of members for railings, of all types, must be of such construction that the completed structure must be capable of withstanding a load of at least 200 pounds.
- Toe boards: Toe board must be a minimum of four (4) inches nominal in height. It must be securely fastened in place with not more than one-quarter inch clearance above floor level.

FALL ARREST

Fall Arrest Systems

You must use a full body harness. You must immediately remove from service any harness systems or components subject to impact loading. You must not use them again for employee protection unless inspected and determined by a competent person to be undamaged and suitable for reuse.

Self-Retracting Lifeline

- Anchors must be capable of supporting 3,000 pounds.
- Maximum free fall distance is two feet or less.

Shock Absorbing Lanyard

- Anchors must be capable of supporting 3000 pounds.
- Lanyard must be designed to restrict the forces exerted on the body to 900 pounds or less.

OTHER FALL ARREST APPLICATIONS

- All fall protection will be used under the supervision of a qualified person.

- Anchors must be capable of supporting 5,000 pounds, or they must be designed, installed, and used as a part of a complete personal fall arrest system which maintains a safety factor of at least two(2).
- When stopping a fall, personal fall arrest systems must:
    - Be rigged to allow a maximum free fall distance of 6 feet.
    - Limit maximum arresting force on an employee to 1,800 pounds.
    - Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3 1/2 feet.
    - Have sufficient strength to withstand twice the potential impact energy of an employee free falling a maximum distance of 6 feet (1.8 m).
- You must protect all safety lines and lanyards from abuse or from being cut or abraded.
- The attachment point of the full body harness must be located in the center of the wearer's back near shoulder level, or above the wearer's head.

SAFETY NET SYSTEMS

Safety net systems must be installed as close as possible under the surface on which employees are working, but in no case more than 30 feet below, unless specifically approved by the manufacturer.

CATCH PLATFORMS

- You must install a catch platform within 4 vertical feet of the work area.
- The catch platform's width must be a minimum of 45 inches wide and must be equipped with standard guardrails and toe boards on all open sides.

WARNING LINE SYSTEMS

Warning lines may only be used on low pitched roofs, low pitched open sided surfaces or for leading edge work. When used, warning lines must be erected around all unprotected work areas.

- Warning lines must consist of a rope, wire, or chain and supporting stanchions.
- Lines must be flagged at not more than 6 foot intervals with high visibility material.
- Line must be rigged and supported in such a way that its lowest point (including sag) is no less than 36 inches from the surface and its highest point is no more than 45 inches from the surface.
- Stanchions must be capable of resisting, without tipping over, a force of at least 16 pounds applied horizontally against the stanchion.
- The rope, wire, or chain must have a minimum tensile strength of 500 pounds, and after being attached to the stanchions, must be capable of supporting, without breaking, the loads applied to the stanchions. Highly visible caution or danger tape may be used in lieu of rope, wire, or chain as long as it is at least three inches wide and three mils thick, and has a tensile strength of at least 200 pounds.

- Line must be attached at each stanchion in such a way that pulling on one section of the line will not result in slack being taken up in adjacent sections before the stanchion tips over.

WARNING LINES FOR ROOFING WORK

- When mechanical equipment is not being used, the warning line must be erected not less than six (6) feet from the edge of the roof.
- When mechanical equipment is being used, the warning line must be erected not less than six (6) feet from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than ten (10) feet from the roof edge.
- A warning line is not required when performing roofing work on low pitched roofs less than 50 feet wide.

LEADING EDGE WORK

Leading edge work is work taking place on the advancing edge of a floor, roof, or framework which changes location as additional sections are placed**.**

Warning lines must be erected to separate employees who are engaged in leading edge work from other work areas.

- Warning lines erected not less than 6 feet nor more than 25 feet from the leading edge.
- If fall arrest systems, or fall restraint systems are not used, you must implement a safety monitor system to protect employees involved in constructing the leading edge.

WARNING LINES OTHER THAN ROOFING WORK

When used, warning lines must not be erected not less than 15 feet from the unprotected sides or edges of the open sided surface.

SAFETY MONITOR SYSTEM

A safety monitor system may be used in conjunction with a warning line system as a method of fall protection during roofing work on low pitched roofs or leading edge work on low pitched surfaces. When used, ensure that the safety monitor system is addressed in the fall protection work plan, including the name of the safety monitor and the extent of their training in both the safety monitor and warning line systems.

Employees working outside of the warning line system, (between the forward edge of the warning line and the unprotected edge must be readily distinguishable from other members of the crew that are working inside the warning line system. By wearing highly visible, distinctive, and uniform apparel.

A safety monitor system must not be used when adverse weather conditions create additional hazards.

TRENCHING AND EXCAVATING PLAN

PURPOSE

This chapter covers open excavations and trenches. This chapter is intended to help ensure employee safety when working in trenches and other excavations. Excavation trenching and shoring shall be conducted in accordance with the following statutory requirements:

- 29 CFR 1926 Part P
- WAC 296-155 Part N
- OAR Chapter 437 Div. 3 Part P

HAZARDS

Excavations have a unique set of hazards that accompany them. These hazards include falls, cave-ins, falling objects, poor atmospheric conditions, and crushing hazards. Because of this, care must be taken when working in or around excavations. Excavations are not considered confined spaces and thus are generally exempt from the confined space rules; however it is possible for a confined space to exist in an excavation. The onsite competent person shall determine which if any confined spaces exist and act accordingly.

GENERAL

- Surface encumbrances must be removed or supported to safeguard employees.
- Access and egress to/from excavations:
    - Provide access and egress to excavation via structural ramps, stairways, ladders, or other safe means.
    - Egress must be located in excavations that are four (4) feet, or more, in depth so as to require no more than twenty five (25) feet of lateral travel for employees. Ladders must also have at least three (3) exposed rungs 36” of visible ladder above the ground or top of the trench shield box.
- Excavations more than four (4) feet deep require protective systems in Washington and five (5) feet deep in Oregon.
- Employees will be protected from excavated materials falling into trenches. Keep equipment, tools and excavated spoils at least two (2) feet from the edge.

DAILY INSPECTIONS

Daily inspections of excavations are required. A competent person will inspect the excavation, adjacent areas and protective systems daily. Look for items such as evidence of a situation that could result in cave-ins, indications of failure of protective systems, hazardous atmospheres or other hazardous conditions. An inspection must be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections must also be made after every rainstorm or other hazard increasing occurrence. Remove exposed employees from the hazardous area until the necessary precautions have been taken to ensure their safety. Inspections will be performed using the daily trench inspection checklist on the daily pre task plan.

LOCATES

Underground installations must be located and safely worked around. Utility installations, such as natural gas, sewer lines, telephone and cable TV lines, electric power cables and water lines will be located prior to opening an excavation. When excavation operations approach the location of underground installations, employees will determine the exact location of the installation by a safe and acceptable means. Utilities will be protected from damage while the excavation is open. Tapani uses the 811 (call before you dig) system and/or private locating services to locate underground utilities.

WARNING SYSTEM FOR MOBILE EQUIPMENT

When mobile equipment is operated adjacent to an excavation, or when equipment is required to approach the edge of an excavation, and the operator does not have a clear view of the edge of the excavation, use a warning system such as barricades or hand signals.

EXPOSURE TO FALLING LOADS

Employee exposure to falling loads will be prevented. Do not permit employees underneath loads handled by lifting or digging equipment. Employees should use taglines when guiding loads, unless the use of a tagline would in itself be a hazard.
Employees will stand away from any vehicle being loaded or unloaded to avoid being struck by spillage. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped to provide adequate protection for the operator, or operators will stand away from the vehicles.

EMPLOYEE EXPOSURE TO VEHICULAR TRAFFIC

Employees exposed to vehicular traffic will wear high-visibility garments meeting the requirements ANSI/ISEA 107-2015 Class 2.requirement or better.

FALL PROTECTION REQUIRED AROUND EXCAVATIONS

NOTE: Employees directly involved in the trenching operations are exempted from fall protection requirements, as are inspectors or other company officials involved with the safety of excavation operations.
REF: WAC 296-155-655 & OAR 437-003-1501

STRUCK BY AND CAUGHT BETWEEN HAZARDS

Employees will be protected from Struck By and Caught Between Hazards. Where there are accessible areas in which the equipment poses a reasonable foreseeable risk of striking and injuring an employee.

- Workers shall keep all parts of their bodies from between the load and the machine, rigging or implements during lifting operations.
- Employees must not approach a machine's working circle until the operator has acknowledged that it is safe to do so.
- An unimpaired horizontal clearance of at least three (3) feet must be maintained between the rotating superstructure of any machine working near any adjacent object or surface. If this clearance cannot be maintained, a safety zone barrier must be used to isolate the hazardous area.
- When the employer can demonstrate that it is neither feasible to erect such barriers on the ground nor on the equipment, the hazard areas must be clearly marked by a combination of warning signs and high visibility markings on the equipment that identify the hazard areas.
- Train each employee assigned to work near the equipment how to recognize struck-by and pinch/crush hazard areas.

ELECTRICAL HAZARDS

Employees will be protected from electrical hazards. Where there are accessible areas in which the job site/ work environment poses a reasonable foreseeable risk of employee contact with electrical hazards. (REF: 29CFR1926.416 & WAC 296.155.605/428/77100)
See Electrical Safety below

HAZARDOUS ATMOSPHERES

Where oxygen deficiency or a hazardous atmosphere exists or could reasonably be expected to exist, the atmosphere in the excavation will be tested before employees enter the excavation. Emergency rescue equipment will be used where hazardous conditions such as potential engulfment or a potential hazardous configuration exist.

RESCUE AND EMERGENCY SERVICES

See Confined Space section below.

WATER ACCUMULATION

Employees are not to work in excavations in which there is accumulated water. Take precautions to protect employees against the hazards posed by water accumulation. Precautions like shield systems along with adequate pump systems to remove water and to control the level of accumulating water.

PROTECTIVE SYSTEMS

- Protective systems for excavations over twenty (20) feet deep will be designed by a registered professional engineer.
- Protection of employees in excavations:
    - Protect each employee in an excavation from cave-ins by an adequate protective system except when:
    - Excavations are made entirely in stable rock;
    - Excavations are less than four (4) feet in depth in Washington or five (5) feet in Oregon and examination of the ground by a competent person provides no indication of a potential cave-in.
    - Protective systems must have the capacity to resist, without failure, all loads that could reasonably be expected to be applied to the system.
- Shoring and Shielding:
    - Tapani uses trench shields, hydraulic speed shoring and slide rail shoring. All shoring used at Tapani is designed by a reputable manufacturer and the tabulated data is stamped by a registered engineer.
    - Tapani does not deviate from the specifications/manufacturers recommendations without specific written approval from the manufacturer or a registered professional engineer.
    - Manufacturers tabulated data is kept on site, or readily available upon request. It is also available electronically on the foreman’s tablet.
    - Shields are to be “Pinned In” meaning that there is no more than six (6) inches of space between the box and either side wall of the trench. This pinning is to eliminate the possibility of a worker falling into the gap.
    - Steel sheets used to retain material outside of trench boxes must be used in accordance with Tapani Inc. Shield Extension Tabulated Data. (See Appendix) Steel sheets are only intended to be used as a nuisance control method and are not intended to act as part of the shoring system. When using steel sheets as nuisance control, the weight of the sheet must be considered when calculating lateral earth pressures placed on shoring systems.

- Note: When handling steel sheets, using an overhead lifting method, the use of shackles and wire rope slings “pig tails” is the only approved method.
- Shoring shall support the vertical portion of a trench and shall extend above the bottom of the slope at least 18 inches to prevent material from sliding into the trench. The surface of the slope shall be cleared of boulders, stumps, or other hard masses of earth.
- A support system may not be required under the following circumstances:
  - P The trench is less than 4 ft/5ft. deep.
  - P The trench is less than 20 ft. deep and the slopes are at least 1-1/2 horizontal to 1 vertical and extend to the bottom of the trench.
- Trench jacks shall be placed in a true horizontal position, vertically spaced, and secured to prevent sliding, falling, or kick outs.
- The sides of an excavation next to a previously backfilled area shall be sloped at least one and one-half horizontal to one vertical, particularly when the separation is less than the depth of the excavation.
- When employees or equipment must cross over an excavation 4 ft in depth, a walkway or bridge with standard guardrails shall be provided.
- Adequate barrier physical protection shall be provided at all remotely located excavations. All wells, pits, shafts, etc., shall be barricaded or covered. Upon completion of exploration and similar operations, temporary wells, pits, shafts, etc., shall be backfilled.
- Engineering-approved portable trench boxes or sliding trench shields may be used instead of a shoring system or slope. They shall protect as well as, or better than, the shoring required for the trench and are used in accordance with the manufacturer’s recommendations.
- When employees are required to enter and excavate, excavated material shall be kept back at least two feet from the edge of the excavation.
- When the slopes of a trench are steeper than one and one-half horizontal to one vertical, and engineering-approved trench boxes or shields are not used, shoring shall be placed as detailed in the OSHA or WISHA standards.
- Sloping or shoring designs for trenches and excavations deeper than 20 ft. shall have Registered Professional Engineering approval prior to placement.

- Sloping and Benching Systems:
  - Determining the angle of slope and design of the supporting system shall be based on careful evaluation of the following criteria by a competent person.
    - Depth of excavation
    - Soil classification
    - Vibration from traffic or equipment movement.
    - Loading imposed by structures, equipment or spoils piles

        - Variation in water content of the material
        - Changes in materials from exposure to water, air, sun or cold
        - Layering of soils.
    - Walls and faces of excavations in which employees are exposed to moving ground or cave-ins will be guarded by sloping or benching. Sloping is the preferred method to use at Tapani. Sloping the sides of the excavation back is preferred because no shelves are left where objects may then roll/fall into the excavation and strike workers.
    - A type soils are sloped to a ¾ :1 ratio.
    - B type soils are sloped at a 1:1 ratio.
    - C type soils are sloped at a 1.5:1 ratio.

ACCESS AND EGRESS TO EXCAVATIONS AND TRENCHES

- Trenches: A stairway, ladder, ramp or other safe means of access/egress shall be located in trenches that are four (4) feet, or more in depth so as to require no more than 25 ft. of lateral travel for workers.
- Excavations: Ladders, ramps or stairs shall also be provided in excavations that are four (4) feet or more in depth in Washington and five (5) feet in Oregon.

SOIL CLASSIFICATION

SOIL TYPES

Soils are broken down into three major groups with regards to trench excavations in construction. These groups are described here;

Soil Types		
Type C	Type C-60 (Tab Data Only)	Type B
Weak Clay Round Gravel Sand Type C Site Conditions Submerged Soil (Freely Seeping) 4 to 1 Sloped Layered Soil	Can be cut vertically, and will stand long enough to install worker protection. (refer to Tab data for exact definition) ⇐ No red site conditions	Medium Stiff Clay Angular Gravel Silt Unstable Rock (seams, layers, cracks) ⇐ No red site conditions

- **Type A:** soil is a cohesive, cemented soil with an unconfined compressive strength over 1.5 tons per square foot. Type A soil is a Clay soil. It will display large clumps in a spoils pile and make a well defined worm when rolled in the hand. “A” soil exerts 25 lbs. per sq. ft. lateral earth pressure on surrounding soils.

TYPE A SOIL: Sloping and Benching

- Simple slope excavations 20 feet or less in depth have a maximum allowable slope of 3/4:1
- Simple benched excavations 20 feet or less in depth have a maximum allowable slope of 3/4:1 and maximum vertical bench dimensions of 4 feet.
- Multiple benched excavations 20 feet or less in depth must have a maximum allowable slope of 3/4:1 and maximum bench dimensions of 4 feet. (all but the first bench are outside the V)

- **Type B:** soil is a cohesive granular soil with an unconfined compressive strength between 1.5 and 0.5 tons per square foot. Type B soil is a Loamy soil. It will display only small clumps in a spoils pile and may contain some angular rock in it as well. Fissured or previously disturbed soils are also classified a “B” typically. “B” soil exerts 45 lbs. per sq. ft. lateral earth pressure on surrounding soil.

TYPE B SOIL: Sloping and Benching

- Simple slope excavations 20 feet or less in depth must have a maximum allowable slope of 1:1
- Single bench allowed in cohesive soil only.
- Excavations 20 feet or less in depth must have a maximum allowable slope of 1:1 and maximum bench dimensions of 4 feet.\
- Multiple Bench is allowed in cohesive soil only.
- Excavations 20 feet or less in depth must have a maximum allowable slope of 1:1 and maximum bench dimensions of 4 feet.
- Support or Shield System:

Excavations 20 feet or less in depth which have vertically sided lower portions must be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations must have a maximum allowable slope of 1:1. All other simple slope, compounded slope and vertically sided lower portion excavations must be in accordance with options permitted under WAC 296-155-657(2).

- **Type C** soil is a compacted sandy soil with an unconfined compressive strength below 0.5 tons per square foot. These are granular soils including gravel and sand, as well as submerged soils or soil with freely seeping water. “C” soil exerts 60 to 80 lbs. per sq. ft. of lateral earth pressure.

TYPE C SOIL: Sloping (can not bench “C” soil)

- Simple slope excavations 20 feet or less in depth must have a maximum allowable slope of 1 1/2:1
- Support or Shield System

- Excavations 20 feet or less in depth which have vertically sided lower portions must be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations must have a maximum allowable slope of 1 1/2:1. All other simple slope, compound slope and vertically sided lower portion excavations must be in accordance with options permitted under WAC 296-155-657(2) Requirements for protective systems.

Other Configurations

Aluminum Hydraulic Shoring – WAC 296-155-66407 (Appendix D)

TESTING

Tests are required to determine soil types. One visual and One manual test are required.

- **Visual tests**. Visual analysis is conducted to determine qualitative information regarding the excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the open excavation, and the soil taken as samples from excavated material.
    - Observe samples of soil that are excavated and soil in the sides of the excavation. Estimate the range of particle sizes and the relative amounts of the particle sizes. Soil that is primarily composed of fine-grained material is cohesive material. Soil composed primarily of coarse-grained sand or gravel is granular material.
    - Observe soil as it is excavated. Soil that remains in clumps when excavated is cohesive. Soil that breaks up easily and does not stay in clumps is granular.
    - Observe the side of the opened excavation and the surface area adjacent to the excavation. Crack-like openings such as tension cracks could indicate fissured material. If chunks of soil spall off a vertical side, the soil could be fissured. Small spalls are evidence of moving ground and are indications of potentially hazardous situations.
    - Observe the area adjacent to the excavation and the excavation itself for evidence of existing utility and other underground structures, and to identify previously disturbed soil.
    - Observe the opened side of the excavation to identify layered systems. Examine layered systems to identify if the layers slope toward the excavation. Estimate the degree of slope of the layers.
    - Observe the area adjacent to the excavation and sides of the open excavation for evidence of surface water, water seeping from the sides of the excavation, or the location of the level of the water table.
    - Observe the area adjacent to the excavation and the area within the excavation for sources of vibration that may affect the stability of the excavation face.
    -
- **Manual tests.** Manual analysis of soil samples is conducted to determine quantitative as well as qualitative properties of soil and to provide more information in order to classify soil properly.

- Plasticity: Mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as 1/8-inch in diameter. Cohesive material can be successfully rolled into threads without crumbling.
- Dry strength: If the soil is dry and crumbles on its own or with moderate pressure into individual grains or fine powder, it is granular (any combination of gravel, sand, or silt). If the soil is dry and falls into clumps which break up into smaller clumps, but the smaller clumps can only be broken up with difficulty, it may be clay in any combination with gravel, sand or silt. If the dry soil breaks into clumps which do not break up into small clumps and which can only be broken with difficulty, and there is no visual indication the soil is fissured, the soil may be considered un-fissured.
- Thumb penetration: The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive soils. (This test is based on the thumb penetration test described in American Society for Testing and Materials (ASTM) Standard designation D2488-"Standard Recommended Practice for Description of Soils (Visual—Manual Procedure).

SURFACE AND SUBSURFACE SAFETY SYSTEM

POLICY STATEMENT

Tapani is dedicated to promoting a safe and healthy working environment for all employees, contractors, and visitors involved in construction activities that involve surface and subsurface work. This policy aims to establish clear guidelines, procedures, and controls to minimize the risks associated with surface and subsurface construction work and to ensure compliance with safety regulations.

SCOPE

This policy applies to all construction activities conducted byTapani that involve surface and subsurface work. This includes but is not limited to excavation, trenching, drilling, and any work that requires the manipulation of the ground surface.

RESPONSIBILITIES

- **Safety**
  - Safety is responsible for implementing and maintaining effective surface and subsurface safety systems.
  - Allocate resources to ensure the proper implementation of this policy.
- **Supervisors:**

    - Ensure that all workers under their supervision are aware of the risks associated with surface and subsurface work and adhere to safety protocols.
    - Monitor and enforce the use of personal protective equipment (PPE) and other safety measures.
- **Employees:**
    - Follow all safety guidelines and procedures related to surface and subsurface work.
    - Participate in training programs to enhance awareness and understanding of surface and subsurface hazards.

CONTROL MEASURES

- **Risk Assessment:**
    - Conduct a thorough risk assessment before initiating any surface or subsurface construction activity.
    - Regularly review and update risk assessments as necessary.
- **Engineering Controls:**
    - Implement engineering controls, such as shoring systems, protective barriers, and ground stabilization measures, to minimize the risk of collapse or cave-ins.
    - Ensure that equipment used for surface and subsurface work is well-maintained and meets safety standards.
- **Personal Protective Equipment (PPE):**
    - Provide appropriate PPE, including hard hats, safety boots, gloves, and high-visibility clothing, to workers engaged in surface and subsurface activities.
    - Train workers on the proper use, maintenance, and disposal of PPE.
- **Training and Awareness:**
    - Conduct regular training sessions for all employees on the hazards of surface and subsurface work and safe operating practices.
    - Display signage and communicate safety information at construction sites to enhance awareness.
- **Emergency Response:**
    - Develop and communicate emergency response procedures specific to surface and subsurface activities.
    - Conduct drills to ensure all workers are familiar with emergency response protocols in case of incidents or accidents.
- **Utility Location:**
    - Before initiating subsurface work, identify and locate underground utilities through proper utility mapping and verification.
    - Ensure that workers are informed of the locations of underground utilities to prevent accidental damage.

- **Compliance:**
    - All employees, contractors, and visitors are required to comply with this policy. Non-compliance may result in disciplinary action, up to and including termination of employment or contract.
- **Review and Revision:**
    - This policy will be reviewed periodically to ensure its effectiveness and relevance. Any necessary revisions will be made to reflect changes in technology, regulations, or the work environment.

AERIAL LIFT & ELEVATING WORK PLATFORMS

PURPOSE

The Purpose of this Tapani plan is to provide guidance and to ensure the safety of crews working with or around Aerial/Scissor Lifts and Boom Supported Elevating Work Platforms, hereafter referred to as Lifts..

DEFINITIONS

Aerial Lift: Vehicle-mounted aerial devices used to elevate personnel for work sites aboveground, such as Extending and articulating boom platforms (Telehandler)
Self-Propelled Elevating Work Platform: A type of aerial lift commonly known as the “scissor” type aerial lift.

TRAINING

Training included at least the following items and will operate equipment under the direction of a qualified person for enough time to demonstrate proficiency.

- General instruction on the inspection, application, and operation of aerial lifts. Include recognizing and avoiding hazards associated with their operation.
- Purpose and use of manuals. Include proper storage of the manuals on the vehicle when not in use.
- Pre Start inspection.
- Responsibilities associated with problems or malfunctions affecting the operation of the aerial lift.
- Factors affecting stability.
- Purpose of placards and decals.
- Workplace survey.
- Safety rules and regulations pertinent to the industry.

- Authorization to operate an aerial lift.
- Operator warnings and instructions.
- Proper use of personal fall protection equipment.

HAZARDS

- Falls
- Pinch points
- Crushing
- Electrocution

AERIAL/BOOM LIFT AND ELEVATING WORK PLATFORMS/SCISSOR LIFT CONTROLS

- Only trained personnel operate Lifts.
- Lift will be inspected before use and the controls tested.
- Manufacturer load limits are not exceeded.
- Fueled/Charged in a safe manner.
    - Shut down engine while fueling.
    - Fuel/Charge in a well ventilated area.
- Ensure Lifts are only used for their intended purpose.
- Workplace survey has been conducted for…
    - Drop-offs and holes.
    - Slopes.
    - Debris.
    - Overhead hazards.
- Elevating and lowering the platform.
    - Lift is on a stable surface.
    - Outriggers, stabilizers are used as required by the manufacturer.
    - Guardrails are installed and access gates are closed per the manufacturer's instructions.
    - The load (workers and tools) does not exceed the manufacturer's rated capacity.
    - Workers are wearing fall protection.(Unless stated otherwise by OEM)
    - Minimum safe approach distance to power lines is maintained.

Minimum Safe Approach Distance

Voltage	Minimum Safe Approach Distance
Less than 300 volts (insulated lines)	3 feet (0.9 m)

Less than 300 volts (uninsulated lines)	10 feet (3.1 m)
300 volts to 50 kv	10 feet (3.1 m)
More than 50 kv	10 feet (3.1 m) + 0.4 inches (1.0 cm) for each 1 kv over 50 kv

- Belting off to an adjacent pole structure while working from the lift shall not be permitted.
- Employees shall always stand firmly on the floor of the basket, and shall not sit or climb on the edge of the basket or use planks, ladders, or other devices for a work position.
- A body belt shall be worn and a lanyard attached to the boom or basket when working from an aerial lift.
- An aerial lift truck shall not be moved when the boom is elevated in a working position with men in the basket, except for equipment which is specifically designed for this type of operation.
- Aerial lifts having an obstructed view shall not be moved backward unless the vehicle has a reverse signal alarm audible above the surrounding noise level, and/or an observer signals it is safe to do so.
- If working in a scissor lift while elevated the occupants of the lift do not need to be tied off as long as there are guardrails in place.

FORKLIFTS

Table 4 Required Training Topics

Topics related to powered industrial truck	Topics related to your workplace
• Operating instructions,	• Surface conditions where the PIT will be operated
• Warnings and precautions for the types of PIT the operator will be authorized to operate	• Composition of loads to be carried and load stability
• Differences between the PIT and the automobile	• Load manipulation, stacking, and unstacking
• PIT controls and instrumentation: Where they are located, what they do, and how they work	• Pedestrian traffic in areas where the PIT will be operated
• Engine or motor operation	• Narrow aisles and other restricted places where the PIT will be operated
• Steering and maneuvering	• Use of door opening and closing devices
• Visibility (including restrictions due to loading)	• Hazardous (classified) locations where the PIT will be operated
• Fork and attachment adaptation, operation, and use limitations	• Ramps and other sloped surfaces that could affect the PITs stability
• PIT capacity	• Closed environments and other areas where insufficient ventilation or poor PIT maintenance could cause a buildup of carbon monoxide or diesel exhaust
• PIT stability	• Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation
• Any PIT inspection and maintenance that the operator will be required to perform	
• Refueling	
• Charging and recharging of batteries	
• Operating limitations	
• Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of PIT that the employee is being trained to operate	

TRAINING

- You must make sure employees successfully complete an operator training program before operating PITs. The only time a trainee can operate a PIT is:
- Under the direct supervision of a person who has the knowledge, training, and experience to train and evaluate operators; and
- When operating the PIT does not endanger the trainee or other employees.
- You must make sure training is done by you or someone you designate that has the knowledge, training, and experience to:
- Conduct the training; and evaluate trainee competence.
- You must make sure your operator training program consists of:
- Formal instruction such as lecture and discussion, interactive computer learning, video tapes, and written material.
- Practical training such as demonstrations done by the trainer and practical exercises performed by trainees.
- Evaluation of trainee performance.

You must make sure the initial operator training program covers the subjects in Table 4, Required Training Topics.

Note: If an operator has previously received training specified in Table 4, Required Training Topics, additional training in that topic is not required if:

1. The training was appropriate to the PIT and working conditions in your workplace; and 2. The employee has passed a PIT performance evaluation within th

You must keep written records of operator training and evaluations that include the following information:

- Name of the operator;
- Date of the training;
- Date of the evaluation;
- Name of the person giving the training or evaluation.
- You must provide PIT operators refresher training if any of the following occur:
- The operator is involved in an accident or near-miss incident.
- The operator is seen operating the PIT in an unsafe manner.
- An evaluation shows the operator is not operating the PIT safely.
- The operator is assigned to drive a different type or modified PIT.
- Conditions in the workplace change that could affect safe operation of the PIT.
- You must evaluate PIT operators performance at each of these times:
- As part of their initial training program.
- After refresher training to determine the effectiveness of the training.
- At least once every 3 years.

SCOPE

- Industrial trucks shall be examined before being placed in service, and shall not be placed in service if the examination shows any condition adversely affecting the safety of the vehicle. Such examinations shall be made at least daily. Where industrial trucks are used on a round-the-clock basis, they shall be examined after each shift, according to manufacturer's specifications.
- Report any deficiencies noted in the inspection and repeated immediately.
- Maintain the machine according to the manufacturer's instructions.
- Operate forklift safely and according to manufacturer's instructions.
- Wear the seat belt.
- Never allow people:
    - Under the elevated part of the forklift, whether it is loaded or empty.
    - To put any part of their body between the mast or any moving parts.
    - To ride on the forks or in the cab unless a seat is provided by the manufacturer.
- Make sure the load is stable before lifting it, the operator is responsible for their machine and the load once it is lifted.
- Never travel with a load elevated, always keep forks as low to ground as possible to keep the lowest and center most point of gravity.
- When leaving the Forklift:
    - Fully lower the load.
    - Set the brakes.
    - Shut the power off (if leaving a forklift unattended)
    - Chalk the wheels if leaving the forklift on an incline.
- Forklifts must not be used in access of their rated capacity.
- Forklifts must not be used in a manner not intended or approved by the Manufacturer.
- Make sure operators are competent and have attended a training class and are currently certified to operate the forklift. (Certifications are good for 3 years)

SCAFFOLD SAFETY

REFERENCE

This chapter references statutes listed in: WAC 296-874, OAR 1926.450

PURPOSE

The purpose of this plan is to provide guidance and to ensure the safety of Tapnai crews working around scaffold systems.

HAZARDS

The hazards involved working on or around scaffolds are:

- Falls
- Objects striking workers below
- Scaffold collapse

GENERAL

Make sure scaffolds are:

- Properly designed and constructed.
- Erected, moved, altered, or dismantled by qualified persons.
- Properly planked or decked.
- The ends of platforms are stable and secure.
- Keep platform sag within manufacturers specifications.
- Provide safe access to scaffolds.

TRAINING

Employees who perform work while on a scaffold must be trained by a qualified persons. The training shall include: a) The nature of any electrical hazards, fall hazards and falling object hazards in the work area; b) 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; c) The proper use of the scaffold, and the proper handling of materials on the scaffold; d) The maximum intended load and the load-carrying capacities of the scaffolds used; and e) Any other pertinent requirements of the Regulation.

When there is reason to believe an employee lacks the skill or understanding of the safe erection, use or dismantling of scaffolds, the employee shall be re-trained. Retraining is required in at least the following situations: a) Where changes at the worksite present a hazard about which an employee has not been previously trained; or b) 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 c) Where inadequacies in an affected employee's work involving scaffolds indicate that the employee has not retained the requisite proficiency.

INSPECT SCAFFOLDS

A competent person will Inspect scaffolds and scaffold components for visible defects before each work shift and after anything occurs that could affect the scaffold's structural integrity. Unsafe equipment or conditions must be tagged out by a competent person and must be complied with.

ERECTING/DISMANTLING

Scaffolds will be set up, taken down, and moved only under the supervision of a competent person. It is a best practice to use tags (red or green) at scaffold access points to let employees know what the status of the scaffold is.

PLANKING/DECKING

Fully plank each platform between the front uprights and the guardrail supports on all working levels of a scaffold so that there is no more than one (1) inch between adjacent units, and between the platform and the uprights.

PLATFORM/WALKWAY

- Width: Platforms and walkways must be at least eighteen (18) inches wide. If the work area is too narrow for an 18 inch walkway then a narrower walkway is allowed, but workers must be protected from falling with guard rails or personal fall arrest systems.
- The platform cannot be more than fourteen (14) inches from the face of the structure.
- Length: Platforms up to ten (10) feet long must extend six (6) inches and no more than twelve (12) inches beyond their supports, unless the extra length is guarded. Platforms more than ten (10) feet long must extend eighteen (18) inches beyond their supports.
- Abutted planks: Each end must rest on a separate support.
- Overlapped Planks: Planks must overlap at least 12 inches unless they are nailed.

SAG

Platforms sag must be kept to less than $1/60^{th}$ of the length of its span. Example: a ten foot long plank is 120” long. 120 divided by 60 is 2. A ten foot long plank may have a maximum of 2 inches of sag.

ACCESS

Workers must have access to scaffolds with no more than 2 feet above or below the access point. Use ladders or ramps or stairs for access to platforms.

FALL PROTECTION

Provide fall protection for employees on scaffolds more than four (4) feet above a lower level, from falling by providing either:

- Personal fall arrest systems.
- Guardrails

GUARDRAILS

Guardrails must be installed on all open sides and ends.

PREVENTED FROM TIPPING

Supported scaffolds with a height to base ratio greater than 4:1 must be tied off using guys or braces.

LOAD CAPACITIES

Scaffolds must be able to support their own weight and at least four times the intended load.

CONTROL LOADS BEING HOISTED NEAR SCAFFOLDS

Use a tagline or equivalent measures to control loads being hoisted onto or near a scaffold if the load could swing and contact the scaffold.

PROTECT EMPLOYEES FROM ENERGIZED POWER LINES

You must make sure scaffolds are erected, moved, altered, or dismantled so that they, and any conductive material handled on them, are kept at least as far from energized power lines as shown in Table.

Minimum Separation Distance from Energized Power Lines

Voltage	Minimum Separation Distance
Less than 300 volts (insulated lines)	3 feet
Less than 300 volts (un-insulated lines)	10 feet
300 volts to 50 kv	10 feet
More than 50 kv	Minimum separation distance of 2 times the length of the line insulator, but never less than 10 feet.

PROTECT EMPLOYEES FROM WEATHER HAZARDS

Prohibit work on scaffolds during storms or unless a competent person has determined that it is safe for employees to be on the scaffold and employees are protected.

LADDER JACK SCAFFOLDS

A ladder jack scaffold is a platform that is attached to two (2) or more ladders. Platforms must not exceed 20 feet in height. Job made ladders shall not be used to support ladder jack scaffolds. Ladders must be tied off to prevent them from moving.

MOBILE SCAFFOLDS

- Mobile scaffolds are designed to roll on wheels of casters.
- Do not move the scaffold with a worker on it.
- Lock wheels/casters to prevent the scaffold from moving when it is in use.
- Stabilize the scaffold when it is in use.
- Platforms cannot extend beyond the scaffold.

TOP PLATE/CARPENTERS SCAFFOLDS

Top plate scaffolds attach to walls and use two, six inch planks or a single twelve inch fabricated scaffold plank. Job made scaffold brackets must be designed by a competent person and be able to withstand 4 times the intended load.
The platform must not sag more than 1/60th of the distance between the brackets.

ELECTRICAL SAFETY

PURPOSE

This chapter addresses electrical safety requirements that are necessary for the practical safeguarding of employees involved in construction work:
REF: 29 CFR 1926 part K & WAC 296-155 part I & OAR 437-003-0047

BEFORE WORK BEGINS

Before work is begun ascertain by inquiry or direct observation, or by instruments, whether any part of an energized electric power circuit, exposed or concealed, is so located that the performance of the work may bring any person, tool, or machine into physical or electrical contact with the electric power circuit. Post and maintain proper warning signs where such a circuit exists. Advise employees of the location of such lines, the hazards involved, and the protective measures to be taken.

PROTECTION OF EMPLOYEES

- Tapani will not require an employee to work in proximity to any part of an electric power circuit where the employee could contact the electric power circuit.

- Tapani will not require any employee to perform any function in proximity to electrical conductors or to engage in any excavation, construction, demolition, repair, or other operation, unless and until danger from accidental contact with electrical conductors has been effectively guarded by de-energizing the circuit and grounding it or by guarding it by effective insulation or other effective means.
- You must consider any overhead wire to be an energized line until the owner of such line or the electrical utility indicates that it is not.
- Do not store, pile or otherwise handle any material under live power lines, within the minimum safe distance.
- Do not erect or dismantle any scaffolding, shoring or structures under live power lines, within the minimum safe distance.
- Do not operate any tools within the minimum safe distance.
- Tapani employees will not operate equipment proximate to, underneath of, or over, energized conductors, within the minimum safe distance.

UNKNOWN LOCATION OF ELECTRICAL CIRCUITS

- Where the exact location of underground electric power lines is unknown, do not begin any activity which may bring employees into contact with those power lines, until the power lines have been positively and unmistakably de-energized and grounded.
- Ascertain by inquiry, direct observation or using instruments, whether any part of an energized electric power circuit, is located within the work zone and could bring any person, tool, or machine into contact with the electric power circuit.

WARNING SIGNS

- Post and maintain warning signs where electrical hazards exist.
- Equipment requires signs legible at 12 feet, reading "It is unlawful to operate this equipment within 10 feet of electrical conductors" in plain view of the operator.
- Install a similar sign on the outside of the equipment, visible to mechanics or other persons engaged in the work operation.
- Signs must be not less than 6" x 8" dimensions with the word "warning" or "danger" in large letters and painted red across the top and the other letters in black painted on yellow background.

MINIMUM SAFE DISTANCES

- Do not perform any work, within the specified minimum safe distances.
- Power lines rated 50 kV. or below, the minimum clearance between the lines and any part of the equipment or load must be at least Ten (10) feet.

- Power lines rated over 50 kV. The minimum clearance between the lines and any part of the equipment or load must be at least Ten (10) feet plus 0.4 inch or each 1 kV, or ten feet plus twice the length of the line insulator.
- Clearances while traveling.
    - If a vehicle is in transit with its structure lowered, the clearance may be reduced to 4 ft. If the voltage is higher than 50kV, you must increase the clearance 0.4 inch for every 1kV over that voltage.
    - If insulating barriers are installed, the clearance may be reduced in accordance with the manufacturers specifications.
    - Employees may not enter spaces containing exposed energized parts unless illumination is provided that enables the employees to work safely.

INSULATING BARRIERS

- Only qualified persons employed by the electrical utility may install barriers.
- Equipment must maintain the “stand off” distances prescribed by the manufacturer of the barriers.

SUPERVISOR’S RESPONSIBILITY TO DETERMINE

- Where overhead electrical lines are encountered in proximity to a work area, supervisors are responsible for ascertaining the voltage and minimum clearance distance required.
- Supervisors will require employees to maintain the correct minimum clearance distance from high voltage lines.
- If relocation of the electrical lines is necessary, Supervisors must make arrangements with the owners of the lines for relocation.
- When the employer can demonstrate that it is neither feasible to erect barriers, the hazard areas must be clearly marked by a combination of warning signs and high visibility markings on the equipment that identify the hazard areas.
- Train each employee assigned to work near the area on how to recognize hazard areas.

CORDS AND CABLES

- Worn or frayed electrical cords or cables shall not be used.
- Extension cords shall not be fastened with staples, hung from nails, or suspended by wire.

GROUND FAULT PROTECTION /GFCI

All Tapani job sites use battery powered equipment whenever possible. When it is not possible to use battery-powered equipment, make sure you are using GFCI and visually inspect all equipment every day. This is a requirement that takes place of the Assured Grounding part of the Program.
A GFCI (Ground Fault Circuit Interrupter) is a piece of equipment that senses a leak to ground electrical charge and then interrupts the circuit, cutting the power. GFCI's must be used on all 120-volt, single phase 15 and 20-ampere temporary wiring. The GFCI's are to be plugged in at the source of electricity and then the cord is to be attached in line after.
A GFCI must be tested for correct operation before use. In order to test:

- Plug the GFCI into the outlet.
- Activate the GFCI by pressing the reset button.
- Verify GFCI is operational by viewing the light at the switch.
- Press the test button.
- The light must go out signifying the unit is off.

If the GFCI fails any part of the test, there is something wrong with the installation, or the GFCI is damaged and must be destroyed and replaced.
GFCI's must be free from any defects. A GFCI may not be used if it has sustained damage to the insulation plugs or switches.
In the field, if you use a 110 volt hard wired or portable generator, you must use a GFCI. Make sure if you rent the generator, the rental store has done a check on the equipment before you take and use it.
EACH FOREMAN IS RESPONSIBLE FOR VISUALLY INSPECTING HIS TOOLS DAILY.

NATURAL GAS SAFETY

PROTECTION OF EMPLOYEES

- Call 911 ***First*** if a gas line is struck and call the Gas Co. ***Second***.
- Tapani employees will not cut gas lines. Only designated representatives of the gas company may cut gas lines.
- Tapani will not require any employee to perform any demolition or repair of gas lines.
- Establish a perimeter if a gas leak occurs.
- Shut down equipment and stop work until told it is safe to resume by Emergency Services or Gas Co. personnel.

HEAVY EQUIPMENT SAFETY

Equipment is another important asset at Tapani Inc. Unsafe equipment operation can cause injury or death to the operator and those around them if proper safety precautions are not taken while operating.

GENERAL REQUIREMENTS

- Operators are required to perform a walk around inspection before operating their machines.
- Seatbelts are required except for equipment designed only for stand-up operation.
- Each operator must be knowledgeable of all hand signals and obey them.
- Each operator is responsible for the stability of his/her machine and load.
- When working on heavy machinery if parts are suspended or held aloft by use of slings, hoists, or jacks the parts shall be substantially blocked or cribbed to prevent falling or shifting before employees are permitted to work under or between them.
- Bulldozer blades, scraper blades, end-loader buckets, dump bodies, and similar equipment, will be either fully lowered or blocked when not in use. All controls must be in a neutral position, with the motors stopped and brakes set.
- Equipment shall have a braking system capable of stopping and holding the equipment fully loaded. Whenever equipment is parked, the parking brake shall be set.
- Equipment parked on inclines shall have the wheels chocked and the parking brake set.
- Cab glass will have no visible distortion affecting the safe operation of the machine. Machines with cabs must have a windshield and wipers. Vehicles operating in conditions that cause fogging or frosting of the windshield must be equipped with defogging or defrosting devices.
- Never mount or dismount any vehicles or equipment while they are still in motion.
- Do not ride on equipment unless a proper seat is provided for each person.
- Do not allow persons to ride the hook, dump box, forks or bucket of any equipment.
- Audible back up alarms are required on construction equipment, make sure they work during your pre-operation check.
- Loaders when working in the street must have a DMV slow moving vehicle triangle posted on the back.
- All equipment left unattended at night, adjacent to a highway, or adjacent to construction areas, will have appropriate lights and reflectors, or be delineated by cones to identify the location of the equipment.
- Where vehicular traffic is diverted onto dusty surfaces, maintain good visibility by the suppression of dust, through the periodic application of water to the grade surface.

COUPLING AND UNCOUPLING

Coupling Attachments

- Position the attachment on a level surface.

- Line up your quick coupler with the attachment and raise the quick coupler until it meets the hooks on the attachment.
- Raise and tilt the quick coupler backward to engage with the attachment.
- In the cab, to your right is the lock-unlock switch. Flip up the red tab and press and hold the top of the switch. This engages the coupler wedges and locks the quick coupler to the attachment.
- Lower the attachment with down pressure to ensure that it's securely locked to the quick coupler.

Uncoupling Attachments

- Engage the quick coupler lock-unlock switch while holding up the red tab. Press and hold it to unlock the quick coupler.
- Lower the attachment to the ground.
- Uncurl the quick coupler and back away.

Remember: Always refer to your Operation and Maintenance Manual for guidance on maintenance, safety, settings, features and more.

SWING RADIUS HAZARDS

Where there are accessible areas of the equipment's rotating superstructure that pose a reasonably foreseeable risk of, striking and injuring an employee, or pinching/crushing an employee;

- An unimpaired horizontal clearance of at least three (3) feet must be maintained between the rotating superstructure of any machine working near any adjacent object or surface. If this clearance cannot be maintained, a safety zone barrier must be used to isolate the hazardous area.
- Train each employee assigned to work on or near the equipment in how to recognize struck-by and pinch/crush hazard areas posed by the rotating superstructure.
- When the employer can demonstrate that it is neither feasible to erect such barriers on the ground nor on the equipment, the hazard areas must be clearly marked by a combination of warning signs and high visibility markings on the equipment that identify the hazard areas.

REF: WAC 296-54-577 (13)

CONSTRUCTION MACHINES

- The operator must avoid carrying loads over people.
- Operators must observe signals from duly authorized persons.
- Under no circumstances must you move a load until the signal is received from authorized personnel.
- An accessible fire extinguisher of 5BC rating, or higher, must be available at all operator stations or cabs of equipment. (WAC 296.800.300)

- You must consider any overhead wire to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded.
- Prior to work near a transmitter tower where an electrical charge can be induced in the equipment or materials being handled, you must de-energize the transmitter or perform tests to determine if electrical charge is induced on the machine.
- You must not make any modifications or additions which affect the capacity or safe operation of equipment without the manufacturer's or a qualified engineer's written approval. If such modifications or changes are made, you must change the capacity, operation, and maintenance instruction plates, tags, or decals, accordingly.
- In all power driven machine operations the person in charge must issue instructions necessary to prevent accidents, to detect and correct unsafe acts and dangerous conditions, and to enforce all safety rules and regulations. The person in charge must also issue instructions on the proper method of using tools and handling material.
- All persons must keep away from the range of the machines swing and must not be permitted to stand in-back of the machine or in line with the swing of the implement during operation or moving of the excavation machine.
- You must not allow unauthorized persons on equipment during operations, and the operator must not converse with other persons while operating machine.
- The equipment implement must rest on the ground or on blocking during shut down periods.
- You must inspect machines daily and all defects promptly repaired.
- You must perform oiling and greasing under safe conditions with machine at rest, except when motion of machine is necessary.
- All steps, running boards, and machine ladders must be of substantial construction and in good repair at all times.
- Operators must not leave the cab while the controls are active or the master clutch is engaged.
- Fire extinguishers must be readily accessible and within reach of the operator at all times.
- You must keep all machine cabs clean and free of underfoot obstructions on the cab floor.
- You must not leave tools on the cab floor.
- You must not store chains or spare parts in cabs.

REF: 296.155.77100

MATERIALS HANDLING AND RIGGING SAFETY

PURPOSE

To provide guidance and ensure safety during lifting operations at Tapani. This part applies to material/load handling activities when using slings, rigging hardware and below-the-hook lifting devices. REF: 29CFR 1910.184/1926.251 & WAC 296-155-336

HAZARDS

- Failure of equipment
- Crushing hazards
- Loads falling
- All employees shall be kept clear of loads about to be lifted and of suspended loads.

RIGGER QUALIFICATIONS

A rigger is a qualified person who possesses a recognized degree or certificate of professional standing; or has extensive knowledge, training, experience, can demonstrate the ability to solve problems related to rigging and has the authority to take corrective action.

- Know and understand of the requirements for slings, rigging hardware, and below-the-hook lifting devices, including their limitations, rigging practices, associated hazards, and inspection requirements;
- Know and understand the application of the type of hitches used;
- Know and understand load weight estimation, center of gravity, effect of angle on rigging components, and load turning.

GENERAL RIGGING REQUIREMENTS

- Ensure all rigging activities are performed by a qualified rigger or performed under the direction and supervision of a qualified rigger.
- All rigging equipment in use must have been inspected prior to use and meet the applicable requirements for design and construction. All rigging equipment must be used in accordance with the manufacturer’s recommendations.
- Never load rigging in excess of its recommended Safe Working Load (SWL)
- Remove rigging, when not in use, from the immediate work area to avoid tripping hazards.
- Damaged or worn rigging should be removed from service and tagged for repair or destruction at the earliest convenience. Look for the following:
    - Illegible identification
    - Excessive Pitting or corrosion
    - Load bearing components that might be; bent, twisted, distorted, stretched, elongated, cracked or broken
    - Thread damage to slings
    - Incomplete pin engagement on shackles

- Lack of ability to freely rotate or pivot on swivels and swivel hoist rings

GENERAL LIFTING REQUIREMENTS

- Excavators are specifically exempted from the crane operator certification standards.
- A qualified rigger must supervise and direct all lifting operations.
- Lifting operations should not be undertaken unless the ground conditions are firm, and meet manufacturer's specification for support and degree of level.
- A competent person must begin a visual inspection, prior to each shift, of the equipment used which must be completed before or during that shift.
- Lifting operations must comply with all manufacturer procedures applicable to the operational functions of equipment.
- Barricades or caution lines, and notices, will be erected to prevent all employees from entering the fall zone. No employees are permitted in the fall zone.
- The competent person must adjust the equipment and/or operations to address the effect of wind, ice, and snow on equipment stability and rated capacity.
- The equipment must not be operated in excess of its rated capacity.
- The operator must not be required to operate the equipment in a manner that would violate paragraph (9) of this section.
- The operator must verify that the load is within the rated capacity of the equipment by at least one of the following methods:
    - The weight of the load must be determined from a source recognized by the industry (such as the load's manufacturer), or
    - By a calculation method recognized by the industry.
    - When requested by the operator, this information must be provided to the operator prior to the lift.
- Whenever there is a concern as to safety, the operator must have the authority to stop and refuse to handle loads until a qualified person has determined that safety has been assured.
- EMERGENCY STOP can be called by any person.

SIGNALS AND SIGNAL PERSON

- A signal person must be provided in the following situations:
    - The point of operation is not in full view of the operator.
    - The equipment is traveling and the view in the direction of travel is obstructed.
    - Site specific safety concerns.
- Types of signals that can be used:
    - Standard hand signals. Use standard hand signals where possible.

- Non-Standard hand signals may be used; however, the signal person, operator, and lift director must, during the pre-lift meeting, agree on the non-standard hand signals that will be used.
- Voice signals: Must be clearly distinguishable from background noise and understandable.
- Audible signals (whistles/ horns): Must be clearly explained and understood before being used and clearly distinguishable from background noise

HOOKS

Hooks with self-closing latches (Safety Latch) or their equivalent will be used unless using a self closing latch would pose a hazard. When self closing hooks present a hazard an open hook that is specifically designed (foundry hook) to be used without a latch may be substituted. Open hooks must be replaced immediately with a latched hook once the lift has been completed.
Hooks will not be left on equipment unless the duration between picks is very short. Leaving hooks on equipment continually is not an approved practice and may lead to damage of the hook or pick point of the Machine.

- Hooks and hook mounting points will be frequently inspected by a competent person to determine weather conditions found merit a more detailed inspection.
- Detailed inspections will be conducted. Hooks failing this inspection will be removed from service and tagged, “OUT OF SERVICE”, in order to prevent their reintroduction to the workplace.
- Hooks that are tagged will be destroyed.
- Hooks must not be point, side, or back loaded.

TAGLINES

Taglines are required on any load “where hazards to employees exist” in order to keep the loads under control. When a load is lifted from the ground, it can pivot around the crane line that's being used to lift it. Uncontrolled pivoting may cause the load to bump into things around it, such as the boom of the crane, other loads or hazardous equipment, such as electrical stations.

- When a tagline is used in the vicinity of power lines, an insulated link shall be installed between the load and tagline.
- Wear gloves when handling the tagline.
- Never wrap the tagline around an arm or leg in an attempt to stop a load’s swing.
- Never step into a loop in a tagline.
- Never place yourself between an immovable object and a load that is not firmly on the ground and, if you must, you should release the tagline to avoid becoming trapped or pinched.

JIB CRANE POLICY

Creating a comprehensive safety policy for jib cranes is crucial to ensure the well-being of workers and the proper operation of the equipment. Here's a general outline that you can use as a starting point. Be sure to customize it based on the specific characteristics of your workplace and consult with safety experts to ensure compliance with local regulations.

PURPOSE

Clearly state the purpose of the jib crane safety policy, emphasizing the importance of preventing accidents and promoting a safe working environment.

SCOPE

Define the scope of the policy, specifying the types of jib cranes covered and the areas where they are used.

RESPONSIBILITIES

Clearly outline the responsibilities of both employees and management regarding jib crane safety.
Employees:

- Must follow all safety guidelines and procedures.
- Report any damaged or malfunctioning cranes immediately.
- Use personal protective equipment (PPE) as required.
- Attend training sessions on jib crane safety.

Management:

- Provide proper training for employees.
- Regularly inspect and maintain jib cranes.
- Ensure the availability of appropriate PPE.
- Investigate and address reported safety concerns promptly.

TRAINING

Describe the training program for employees, covering topics such as:

- Proper Jib Crane Operation
- Understanding load capacities and limitations.
- Recognizing and addressing potential hazards.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Specify the necessary PPE for working with jib cranes, such as hard hats, safety glasses, and appropriate footwear.

INSPECTION AND MAINTENANCE

Outline procedures for regularly inspecting and maintaining jib cranes, including:

- Daily pre-use inspections.
- Scheduled maintenance.
- Record-keeping for inspections and repairs.

OPERATING PROCEDURES

Clearly define safe operating procedures for jib cranes, including:

- Loading and unloading guidelines.
- Safe lifting practices.
- Proper communication between operators and ground personnel.

LOAD CAPACITY AND LIMITATIONS

Provide guidelines for determining and adhering to the load capacities and limitations of the jib crane.

ENVIRONMENTAL CONSIDERATIONS

Address factors such as wind, weather conditions, and the proximity of power lines that can impact the safe operation of jib cranes.

EMERGENCY PROCEDURES

Detail the steps to be taken in case of accidents or malfunctions, including:

- Emergency shutdown procedures.
- Evacuation protocols.
- Reporting incidents to the appropriate personnel.

REGULATORY COMPLIANCE

Emphasize the importance of complying with local and national regulations regarding the use of jib cranes.

REVIEW AND REVISION

Establish a schedule for periodic reviews and updates to the policy, ensuring it remains current and effective.

Note: Always consult with legal and safety professionals to ensure that your safety policy complies with local regulations and industry standards.

FOREMAN'S DAILY PLANS & REPORTS

These are the most commonly used reports.

Work Crew Safety Meeting: See above.

PRE-TASK PLANS

Pre-task Plans are an important safety tool to help prevent injuries. A Pre-task Plan gives you a preplanned outline of the potential hazards and risks you may face on the job.

The daily pre-task plan covers Daily Excavation, equipment and Utility requirements. This plan covers often overlooked topics and can be very helpful with planning. Foremen and Leadmen are required to complete a pre-task plan before every work shift. Pre-Task plans are completed and turned in electronically or on paper to the Foreman/Leadman immediate supervisor.

CONFINED SPACE EVALUATION/CONFINED SPACE ENTRY PERMIT

This form is either filled out in an electronic format and retained in the foreman's tablet until it is closed or it is completed on paper and held open onsite until it is closed. These confined space entry permits must be submitted to Safety.

INCIDENT REPORT

The Tapani incident investigation report is a form used to aid managers and foremen in conducting incident investigations and is also used to report incidents to the main office. This incident investigation report is filed electronically through keystyle.

- Record all incidents using the Keystyle form within one hour after the incident occurs
- Take pictures of the scene and additional documentation such as insurance information if applicable and attach to the incident investigation report. Proper and detailed documentation is our lifeline in reporting and can help resolve disputes and claims.
- If the incident has included an injury or utility damage, immediately call the Safety Director at Tapani Inc.

LOCKOUT/TAGOUT

PURPOSE

To prevent injury by securing energy sources, so work can be completed in a safe manner. This part applies to locking out and tagging energy sources or potential energy sources in work areas.

HAZARDS

- Unintended release of energy, mechanical, hydraulic, pneumatic or electrical.
- Workers being trapped in machinery.
- Struck by crushing, burns and entanglement injuries.
- Workers being burned by unintentional release of steam or gas.

Only qualified persons may work on electric circuit parts or equipment that have not been de-energized. 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.**Tapani does not have qualified employees.**

Conductive articles of jewelry and clothing (such as 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

CONTROLLING HAZARDOUS ENERGY

- Identify energy sources and energy isolating devices.
- De-energize equipment.
- Secure energy isolating devices in a safe position.
- Dissipate or restrain energy that can not be isolated.
- Verify equipment isolation.

LOCKOUT/TAGOUT GUIDELINES

The machine or equipment shall be turned off or shutdown 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.

- Controls Equipment and Circuits: Lock and Tag controls that need to be deactivated during the course of work. Render equipment and circuits inoperative at all points.
- Locks are SOLELY to be used for the use of Lock Out

- Tags: Tags to identify plainly, the controls, equipment or circuits being worked on and the name of the individual locking the circuit out.
    - Tags being used must be constructed so they will not deteriorate under environmental conditions.
- Block or relieve all stored energy.
- Verify the de-energized condition.
- When re-energizing: These requirements must be met, in the order given, before circuits or equipment are re-energized, even temporarily.
    - Qualified people must conduct tests and visual inspections to verify that all tools, and other such devices have been removed, so the circuits or equipment can be safely energized.
    - Warn employees exposed to the hazards associated with re-energizing the circuit or equipment to stay clear of circuits and equipment.
    - Each lock and tag must be removed by the employee who applied it or under their direct supervision.
    - Make a visual determination that all employees are clear of the circuits and equipment.

SHIFT OR PERSONNEL CHANGES

If a lockout procedure will extend into the following shift, the authorized employee who originally placed the lock will remove it and it will immediately be replaced with the lock of the authorized employee who is to continue the repair or maintenance on that equipment or machine for the following shift.

GROUP LO/TO

When two or more authorized employees are working on a piece of equipment or machinery with one or more energy isolation devices, a multi-lock hasp is attached to each energy isolation device and secured in the closed position. Then, each authorized employee attaches their personal lock to the multi-lock hasp and leaves it there for the duration of their work. No one is able to remove the hasp and re-energize the energy isolation device until the last worker has removed his or her personal lock from the hasp.

OUTSIDE CONTRACTORS

If outside contractors perform servicing or maintenance that requires lockout, the authorized employee shall inform the outside contractor of Tapani’s lockout procedures.

INSPECTIONS

A periodic inspection of the energy control procedure shall be conducted at least annually to ensure the procedure is being followed. The periodic inspection shall be performed by an authorized employee other than the ones(s) utilizing the energy control procedure being inspected. The periodic inspection shall 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. The employer shall certify that the periodic 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.

TRAINING

The employer 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 the energy controls are acquired by employees. The employer shall certify that employee training has been accomplished and is being kept up to date. The certification shall contain each employee's name and dates of training.
Retraining shall be provided for 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 whenever a periodic inspection reveals, or whenever the employer has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of the energy control procedures.

WELDING AND CUTTING

PURPOSE

To provide guidance toward safe work practices for employees involved in welding and cutting activities. This part applies to all welding and cutting activities at Tapani.

HAZARDS

- Burns, electrocution, ultraviolet and infrared radiation.
- Explosions or fires caused by leaking gas.
- Metal fumes and toxic gasses.

GENERAL SAFETY RULES

- Always follow the manufacturer's recommendations for setting up and operating equipment, selection of tip size, and gas cylinder operating pressures.
- Never use defective, worn or leaky equipment. Repair it or take it out of service.
- Always have an appropriate fire extinguisher readily available.
- Never perform welding or cutting operations near combustible materials (gasoline cans, paints, paper, rags, etc.)
- The welder and spectators must always wear goggles to protect the eyes from light rays, sparks and hot molten metal during welding, cutting, and heating operations. Eye protection must comply with the established ANSI Standards.
- Welders should wear flameproof gauntlet gloves also flameproof aprons are recommended.
- Clothing should be reasonably free from oil and grease.

PROCEDURE

Before cutting or welding is permitted, the area shall be inspected by the individual responsible for authorizing cutting and welding operations. He/she shall designate precautions to be followed in granting authorization to proceed, preferably in the form of a written permit.
Cutters, welders and their supervisors must be suitably trained in the safe operation of Hot Work equipment and safe use of the process. Assigned fire watchers must be trained in the use of fire extinguishing equipment and familiar with the facilities for sounding an alarm in the event of a fire.

GAS WELDING AND CUTTING SAFETY

- Fuel-gas hose and oxygen hose shall be easily distinguishable from each other. The contrast shall be made by different colors or by surface characteristics readily distinguishable by touch. Oxygen and fuel-gas hoses shall not be interchangeable. A single hose having more than one gas passage shall not be used.
- Gas welding and cutting equipment shall be inspected at the beginning of each shift to identify the following:
    - Leaking or damaged hose or hose couplings
    - Leaking or damaged fuel-gas pressure regulators and gauges and related connections
    - Leaking or damaged torch heads or shutoff valves and related connections
    - Clogged tip openings
- When parallel sections of oxygen and fuel-gas hose are taped together, not more than 4 inches out of 12 inches shall be covered by tape.
- All hose in use shall be inspected at the beginning of each working shift. Defective hose shall be removed from service.
- Hoses, cables, and other equipment shall be kept clear of walkways, ladders, and stairs.

- Clogged torch tip openings shall be cleaned with approved cleaning wires, drills, or other devices designed for this purpose.
- Torches shall be ignited by friction lighters or other approved devices only. Matches, flame lighters, or hot work shall not be used to ignite torches.
- Oxygen and fuel-gas pressure regulators, including related gauges, shall be in proper working order.
- Oxygen cylinders and fittings shall be kept away from oil or grease. Cylinders, cylinder caps and valves, couplings, regulators, hose, and apparatus shall be kept free from oil or greasy substances and shall not be handled with oily hands or gloves. Oxygen shall not be directed at oily surfaces or greasy clothes, or used within a fuel oil or other storage tank or vessel.
- Flash-back arrestors shall be installed on all oxygen and fuel-gas set-ups.
- Torches and hoses shall be completely depressurized (bled) prior to storage, or at the end of each shift.
- Torches and hoses shall not be stored in enclosed areas (e.g., gang boxes, lockers) while connected to cylinders.
- The frames of all arc welding and cutting machines shall be grounded.

ARC WELDING AND CUTTING SAFETY

- Electrode holders shall be designed for arc welding/cutting and be capable of safely handling the maximum rated current required.
- Exposed current-carrying parts of electrode holders shall be insulated in a manner, which provides full protection against electrical shock for operators of arc welders/cutters.
- Arc welding/cutting cables shall be completely insulated and flexible, capable of handling the maximum current requirements of the work.
- Only cable, free from repair or splices for a minimum distance of 10 feet from the electrode holder shall be used. Cables with standard insulated connectors or splices with insulating quality that is equal to that of the cable may be permitted.
- Electrode holders shall not be dipped in water (to do so may cause electric shock).
- The power supply to the equipment shall be turned off whenever the welder or cutter leaves work or stops work for any appreciable length of time, or when the arc welding/cutting machine is to be moved.
- Faulty or defective equipment shall be reported to the supervisor and tagged out of service (using a “Danger-Do Not Use” tag) until repaired.
- Arc welding/cutting operations shall be shielded by noncombustible or flameproof screens, which will protect employees and other persons working in the vicinity from the direct ray of the arc.

STORAGE AND HANDLING OF COMPRESSED GAS CYLINDERS

- Compressed gas cylinders shall be legibly marked with either the chemical or trade name of the gas. Such markings shall be stenciled, stamped, or labeled and not easily removable. The markings shall be located on the shoulder of the cylinder.
- Compressed gas cylinders shall be equipped with approved connections.
- Acetylene cylinders shall be stored valves end up.
- Oxygen cylinders shall not be stored near oil or grease or other highly combustible/flammable materials.
- Oxygen cylinders in storage shall be separated from fuel-gas cylinders by a minimum distance of 20 feet, or by a noncombustible barrier at least 5 feet high and having a fire resistance rating of at least ½ hour.
- Cylinders shall not be dropped, struck by objects, or permitted to strike against each other violently.
- Cylinder valves shall be closed before moving cylinders, at the end of the shift, or when work is finished.
- Empty cylinder valves shall be closed.
- Cylinders shall be kept far enough away from the actual welding/cutting operation so that sparks, hot slag, or flames will not reach them.
- Cylinder valves shall always be opened slowly.
- Acetylene cylinder valves shall not be opened more than one and one-half turns of the valve stem and preferably no more than three-fourths of a turn.
- Where a special wrench is required, it shall be left in position on the stem of the valve while the cylinder is in use. In the case of manifold or coupled cylinders, at least one such wrench shall be available for immediate use.
- Regulators shall be removed, valve caps are in place, and valves closed when cylinders are transported by vehicles. All vehicles used to transport cylinders shall have a proper support rack installed.
- A suitable cylinder truck, chain, or other steadying device shall be used to prevent cylinders from being knocked over while in use or storage.
- Cylinders shall not be placed where they may become part of an electric circuit. Tapping of an electrode against a cylinder to strike an arc is prohibited.

PERSONAL PROTECTIVE EQUIPMENT

EYE AND FACE PROTECTION

- Welding helmets and hand shields shall be used during all arc welding/cutting operations, excluding submerged arc welding. Safety goggles or glasses (with side shields) shall also be

worn (in addition to helmets/shields) during arc welding/cutting operations. The goggles or glasses may be either of clear or colored glass, depending upon the type of exposure in welding operations. Helpers or attendants shall wear appropriate proper eye protection (as required) in addition to standard safety glasses.

- Safety goggles or glasses with side shields and suitable filter lenses may be permitted for use during gas welding operations on light work, torch brazing, or inspection
- Operators and attendants on resistance welding or brazing equipment shall use face shields or goggles, depending on the particular job.

PROTECTIVE CLOTHING

- Except when engaged in light work, welders shall wear flameproof gauntlet gloves.
- Flameproof aprons/jackets made of leather, or other suitable material, may also be desirable protection against radiated heat and sparks.
- Woolen clothing is preferable to cotton because it is not so easily ignited. Nylon clothing is not permitted for welding/cutting operations. All outer clothing, such as jumpers or overalls, should be reasonably free from oil or grease.

RESPIRATORY PROTECTIVE EQUIPMENT

- Respiratory protective devices may also be required when one or more of the following conditions exist:
- Feasible engineering controls are insufficient to mitigate the hazards
- Room size (with special regard to ceiling height) is limited, or there are large amounts of welding/cutting and ventilation is limited
- Too many welders operating in an area at one time
- Potentially unsafe atmospheric conditions
- Too much heat generated
- Presence of hazardous fumes, gasses, or dusts of metals above allowable limits

FIRE PROTECTION

- When possible, objects to be welded, cut, or heated shall be moved to a designated safe location. If this is not possible, all movable fire hazards in the workspace shall be taken to a safe place.
- If the object to be welded, cut, or heated cannot be moved and all fire hazards cannot be removed (e.g., equipment, walls, floors, etc.), positive means shall be taken to confine the heat, sparks, and slag to protect the immovable fire hazards.
- Welding, cutting, or heating shall not be performed where the application of flammable paint, the presence of other flammable compounds, or heavy dust concentration create a possible hazard.

- Approved fire extinguishing equipment shall be present in the immediate work area.
- Combustible materials, equipment, or building surfaces within 35 feet of the work or below the work shall be covered with fire-resistant welding blankets, moved, or wetted down.
- Openings in ducts, tanks, or other confined spaces within 35 feet of the work shall also be covered or plugged. (Fire-resistant welding blankets are used for electric arc operations instead of wetting the work area down.)
- Unless specific authorization is obtained from the owner and owner specified precautions are fully implemented, cutting and welding is prohibited as follows:
    - In explosive atmospheres of gasses, vapors, or dusts or where explosive atmospheres could develop from residues or accumulations in confined spaces.
    - On metal walls, ceilings, or roofs built of combustible sandwich-type panel construction with combustible insulation, or those having a combustible covering.

FIRE WATCH

- A fire watch shall be maintained for at least 30 minutes after completion of welding/cutting operations so that possible smoldering fire can be detected and extinguished.
- Fire watchers shall have fire extinguishers readily available.
- Fire watch personnel shall be instructed in the selection and use of appropriate fire extinguishers.
- Fire watch personnel shall be familiar with facilities and the procedures to be followed in the event of a fire. They watch for fires in all exposed areas, and attempt to extinguish fires only when obviously within the capacity of the equipment available.
- The requirement for a fire watch may be waived when, after completion of the Welding, Cutting, and Heating Permit, it has been determined that there is NO POSSIBILITY OF SPARKS, SLAG, HOT MATERIAL, ETC. COMING INTO CONTACT WITH FLAMMABLE OR COMBUSTIBLE SOLIDS, VAPORS, LIQUIDS, OR RESIDUES.

WELDING, CUTTING, AND HEATING PERMITS

- Before any welding, cutting, or heating is performed, the area shall be inspected by the Competent person on site authorizing welding and cutting operations.
- Welding, Cutting, and heating permits for temporary work locations (i.e., construction sites) shall be valid for a specific location for a specified period of time, as deemed appropriate by the Competent person.
- Welding, Cutting, and Heating Permits for permanent locations where welding, cutting, and heating are an integral part of the day-to-day operations (fabrication shops, mechanical shops, etc.) are valid for a period of 6 months from the date of issue. Prior to the end of that 6-month period.

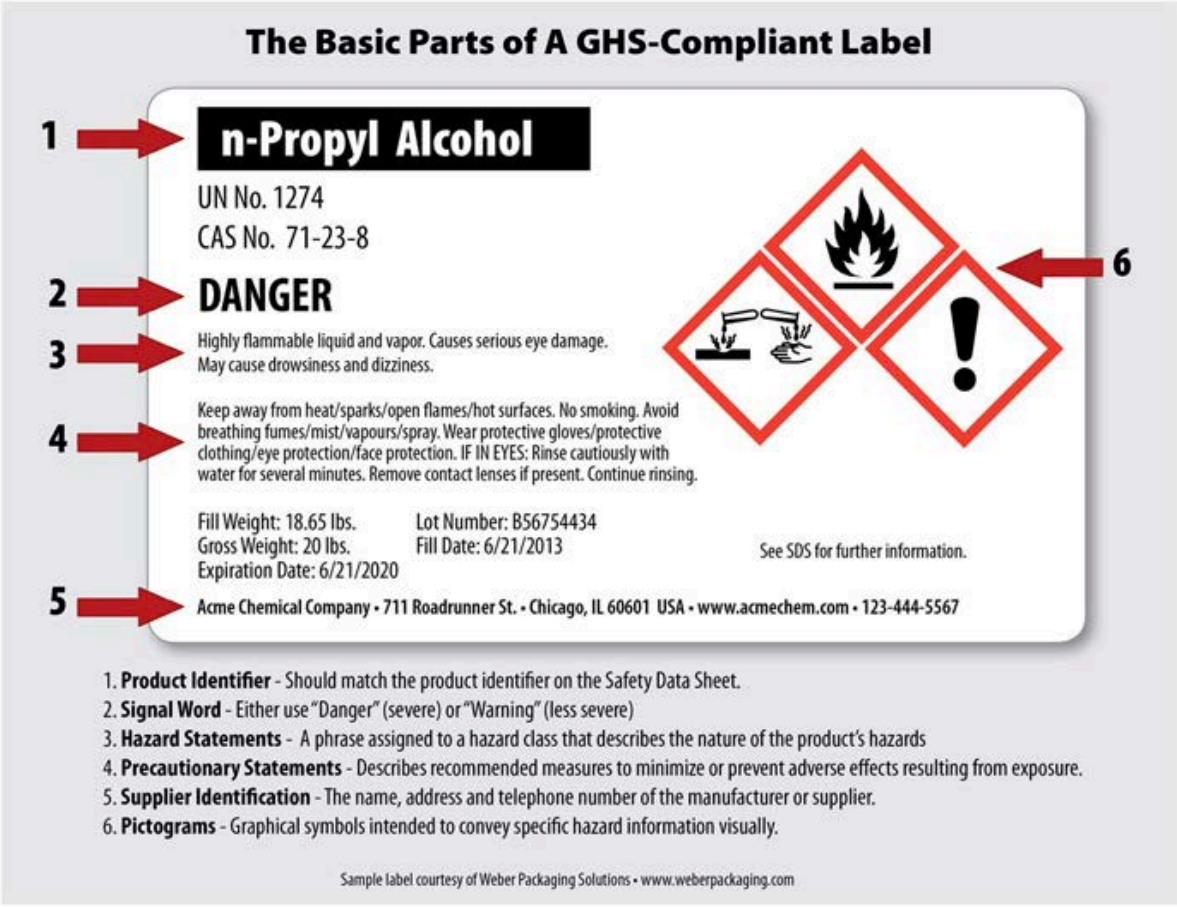
WELDING/CUTTING ON CONTAINERS

Used Containers: No welding, cutting, or other hot work shall be performed on empty drums, barrels, tanks, or other containers until they have been cleaned thoroughly. (This is to ensure that there are no flammable materials present or any substances such as greases, tars, acids, etc. which might produce a hazard when subjected to heat.) Any connection to the drum or vessel shall be disconnected or blanked off.

Venting and Purging: Hollow spaces, cavities, or containers shall be ventilated to remove gasses before preheating, cutting, or welding. Purging with inert gas is recommended.

Welding, Cutting, and Heating in Confined Spaces: See Confined Space

HAZARD COMMUNICATION PROGRAM



INTRODUCTION

To ensure that the hazards of all hazardous materials produced, imported, or used are evaluated, and that this hazard information is transmitted to affected employees. Required components of a Hazard Communication Program include:

- Responsibility
- Procedure
- Safety Data Sheets (SDSs)
- Labels and other forms of warning
- Training

RESPONSIBILITIES

The Project Manager shall be responsible for the following activities:

- Promoting and administering the Hazard Communication Program.
- Determining the hazardous materials used in the workplace and making SDS' available to employees,
- Maintaining a list of hazardous materials to be used on the project and SDS'.
- Ensure that labels on incoming containers of hazardous chemicals are not removed or defaced.
- Developing work practice requirements for hazardous materials identified in the Job Hazard Analysis (JHA) which is submitted with the SDSs.
- On-site employers (subcontractors) must know how to access Tapani SDSs and get information about necessary safety measures.

Employees shall be responsible for the following actions:

- Labeling secondary and subsequent hazardous material containers.
- Receiving (and understanding) hazardous material training for the task(s) that they are assigned.
- The Safety Coordinator shall evaluate submitted manufacturer SDSs.

SAFETY DATA SHEETS (SDS)

Manufacturer's safety data sheets list, in English, information about particular chemicals their health hazards, emergency procedures, first aid procedures, how the chemical can enter the body and safe handling practices. The SDS also lists the name of the manufacturer. SDS's are on file for all hazardous chemicals. The company SDS for all company chemicals are available 24 hours a day in an electronic form via the employee portal and Tapani Field App.

- The sheets can be found on the Tapani Field App or by QR codes on employee hardhats and posted at job sites.
- The Hazardous materials inventory list for all non-exempt substances is held on Velocity.com

Note: Consumer products or hazardous substances are exempt when the workplace exposure is the same as that of the consumer.

If an overexposure is confirmed, the overexposed (or potentially overexposed) employee is notified in writing within 5 days of receipt of the report. The notification identifies the date of exposure, the area, and the specific physical/biological hazard or airborne contaminant(s). The notification also includes controls (engineering, administrative, and personal protection) in use at the time and the controls Tapani will use in the future to reduce or eliminate similar exposures.

LABELS AND OTHER FORMS OF WARNING

Key Supervisor shall comply with the following label/warning requirements:

- Tapani maintains the policy of leaving chemicals, and other products in the manufacturer's container. This policy is to avoid possible confusion or accidental mixing or misuse of products.
- Labels shall be legible, in English (plus other languages if appropriate), and prominently displayed on the container, or readily available in the work area throughout each work shift.
- Labels on incoming containers shall not be destroyed, removed or defaced.
- The Manufacturer is responsible for container labeling procedures, reviewing, and updating.
- Crews are instructed not to use products that do not have labels.
- Each container of hazardous material must be labeled with the following information:
    - The label must identify the hazardous material using the chemical name and common name.
    - Labels will provide appropriate hazard warnings which give general information about the relevant health and physical hazards of the product. This includes health effects like information such as the organs that are most likely affected by the chemical.

EMPLOYEE INFORMATION AND TRAINING

Employees shall undergo Hazard Communication (HAZCOM) training at the time of hire and annually thereafter. Training will be provided to new hires at Orientation by the safety Team. Before employees perform non-routine or special tasks that may expose them to hazardous chemicals, they are trained on the hazards associated with those chemicals. Prior to commencing work on the project with hazardous material, at a minimum the following requirements of the training shall be as follows. (Review the SDS)

- Signs and symptoms of overexposure
- Methods and observations that may be used to detect and identify hazardous chemicals such as odor, visual presence, etc.
- The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used.
- Physical and health hazards of materials used.

- Location of SDSs and the format in which they are maintained.
- Type of information the employee would expect to see on the new labels, including the:
    - Product identifier
    - Signal word
    - Pictogram Click here for HCS Pictograms
    - Hazard statement
    - Precautionary statement

How an employee might read and use product labels.

- Employees must be kept aware of where hazardous chemicals are used and stored.
- General understanding of how the elements work together on a label.
- How the information on the label is related to the SDS.
- Format of the SDS - Standardized 16-section format, including the type of information found in the various sections.
- Methods of protection from material hazards.

Prior to using any newly introduced hazardous material or product, supervisors shall obtain a copy of the appropriate SDS and review it with their employees.

HCS Pictogram and Hazards Table

HCS Pictograms and Hazards

Health Hazard	Flame	Exclamation Mark
 • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	 • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	 • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder	**Corrosion**	**Exploding Bomb**
 • Gases Under Pressure	 • Skin Corrosion/Burns • Eye Damage • Corrosive to Metals	 • Explosives • Self-Reactives • Organic Peroxides
Flame Over Circle	**Environment** (Non-Mandatory)	**Skull and Crossbones**
 • Oxidizers	 • Aquatic Toxicity	 • Acute Toxicity (fatal or toxic)

RESPIRATORY PROTECTION PROGRAM

INTRODUCTION

Respirators are used to protect employees from inhaling hazardous chemicals in the air. These chemicals can be in the form of gasses, vapors, mists or dust. Tapani, Inc. (TUI) will provide respirators to our employees to protect them from airborne chemical hazards. The written program below will spell out how we do the following at our workplace:

- How the proper respirators for the particular hazards are selected and issued (include a list of respirators used)
- When and how respirators will be used in routine work activities, infrequent activities, and foreseeable emergencies such as spill response, rescue or escape situations
- How medical evaluations of respirator wearers is provided
- How respirator fit-testing is done
- How respirators in use are cleaned, stored, inspected and repaired or discarded
- How sufficient high purity air is provided for air-supplied respirators (if you use them)
- How employees are trained about respiratory hazards at our workplace
- How employees are trained on the proper use of the respirators used at our workplace
- How we evaluate the effectiveness of our respiratory program

The answers to the above “how” questions will depend on the unique conditions at our workplace. The information will be specific and reflect what you actually do or require to be done, not just what seems like the right thing to do. It must describe actual conditions and actions at our workplace.

To provide proper protection, respirators must be the right type, must be worn correctly at all times, and must be maintained properly. They are prone to leakage, depend on the correct behavior of individual employees and may require much maintenance and management oversight. This is why they are considered as a last resort to protect employees from airborne chemical hazards.

It often more protective, less trouble, and even cheaper to eliminate or reduce the respiratory hazard through various ways like exhaust ventilation, changes in process, or enclosure of the process. Sometimes the use of a hazardous chemical itself can be eliminated. But, when there is no alternative, a respirator program must be implemented to protect our employees from adverse health effects of exposure to chemicals in the air above their permissible exposure limits.

Respirators are typically used in three different situations – routine or regular exposure to processes or activities involving chemicals, infrequent, but predictable occasions where there is chemical exposure, or emergencies where there is a chemical leak or spill. The written respiratory program will address all these situations if they occur or could occur at our facilities.

By clicking on underlined blue text, you can jump to the page containing the form or information indicated.

RESPONSIBILITIES

Our respirator program administrator is Logan Kysar, Occupational Health Nurse and Shawna Bergeron, Safety Coordinator

Our administrator’s duties are to oversee the development of the respiratory program and make sure it is carried out at the workplace. The administrator will also evaluate the program regularly to make sure procedures are followed, respirator use is monitored and respirators continue to provide adequate protection when job conditions change.

SELECTION OF RESPIRATORS

We have evaluated our use of chemicals at this facility and found respirators must be used by employees in the following locations or positions or doing the following duties, tasks or activities:

Employee position or activity	**Chemicals or products used**	NIOSH approved respirators assigned	When

			Used (routinely, infrequently, or in emergencies)
Trenches	1.Oatey Glue Products 2. COROTHANE® I COAL TAR	TBD based on job site	Infrequently for both products
Welding	Chrome, steel, and aluminum		Routinely
General Laborer		TBD based on job site	
Silica related activities	Silica	Determined by table 1 Engineered controls in place to reduce exposure.	Routinely

For information on how to select proper respirators for particular chemical exposures, click here
For information on how to evaluate employee exposure to chemicals, click here.

MEDICAL EVALUATIONS

Every employee of this company who must wear a respirator will be provided with a medical evaluation before they are allowed to use the respirator. Our first step is to give the attached medical questionnaire to those employees. Employees are required to fill out the questionnaire in private and give them to a Professional or other licensed healthcare professional (PLHCP). Completed questionnaires are confidential.

If the medical questionnaire indicates that a further medical exam is required, this will be provided at no cost to our employees. We will get a recommendation from this medical provider on whether or not the employee is medically able to wear a respirator.

Additional medical evaluations will be done in the following situations:

- The medical provider recommends it.
- The respirator program administrator decides it is needed.
- Employee shows signs of breathing difficulty.
- Changes in work conditions that increase employee physical stress (such as high temperatures or greater physical exertion).

RESPIRATOR FIT-TESTING

All employees who wear tight-fitting respirators will be fit-tested before using their respirator or given a new one. Fit-testing will be repeated annually. Fit-testing will also be done when a different respirator face piece is chosen, when there is a physical change in an employee's face that would affect fit, or when our employees or medical provider notify us that the fit is unacceptable. No beards are allowed on wearers of tight-fitting respirators. Respirators are chosen for fit-testing following procedures in the WISHA Respirators Rule (Table 11) Fit-testing is not required for loose-fitting, positive pressure (supplied air helmet or hood style) respirators. We do fit-testing using quantitative fit-testing instrument protocols.

Documentation of our fit-testing results are kept in each employee's HR file as well as a Respiratory protection program notebook.

Our respirators will be checked for proper sealing by the user whenever the respirator is first put on, using the attached seal check procedures:

Click here for seal check procedures.

RESPIRATOR STORAGE, CLEANING, MAINTENANCE AND REPAIR

Our non-disposable respirators are stored in Small tools.

Respirators will be cleaned and sanitized every 90 days or whenever they are visibly dirty. (does not apply to paper dust masks which are disposed daily). Respirators will be cleaned according to the attached instructions (either the manufacturer's instructions or the Respirators Rule cleaning procedures.)

For Rule-specified respirator cleaning procedures where you don't have manufacturers instructions, click here.

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.

All respirators will be inspected before and after every use and during cleaning. In addition, emergency respirators and self-contained tank-type supplied air respirators in storage will be inspected monthly.

Respirators will be inspected for damage, deterioration or improper functioning and repaired or replaced as needed. Repairs and adjustments are done by Outside vendors who are trained in respirator maintenance and repair. Supplied air respirators will be checked for proper functioning of regulator and warning devices and amount of air in tanks where used.

When supplied air respirators are used, any needed repairs or adjustments will be done by the manufacturer or technician trained by the manufacturer. Our supplied air respirators are maintained and repaired by The Mallory Company.

On respirators with vapor or gas cartridges, the cartridges will be regularly replaced on the following schedule: TBD

Type of respirator cartridge	Location or job duties	Chemicals in use	Replacement schedule
HEPA	All exposures	See Table Above	Every shift or breathing ability

RESPIRATOR USE

The Program Administrator will monitor the work area in order to be aware of changing conditions where employees are using respirators.

Employees will not be allowed to wear respirators with tight-fitting facepieces if they have facial hair (e.g., stubble, bangs) absence of normally worn dentures, facial deformities (e.g., scars, deep skin creases, prominent cheekbones), or other facial features that interfere with the facepiece seal or valve function. Jewelry or headgear that projects under the facepiece seal is also not allowed.

If corrective glasses or other personal protective equipment is worn, it will not interfere with the seal of the facepiece to the face.

Note: Full-facepiece respirators can be provided with corrective glasses since corrective lenses can be mounted inside a full-facepiece respirator. Contact lenses can also be used with full facepiece respirators if they do not cause any problems for the employee.

A seal check will be performed every time a tight-fitting respirator is put on.

The program administrator will make sure that the NIOSH labels and color-coding on respirator filters and cartridges remain readable and intact during use.

Employees will leave the area where respirators are required for any of the following reasons:

- To replace filters or cartridges.
- When they smell or taste a chemical inside the respirator.
- When they notice a change in breathing resistance.
- To adjust their respirator.
- To wash their faces or respirator.
- If they become ill.
- If they experience dizziness, nausea, weakness, breathing difficulty, coughing, sneezing, vomiting, fever or chills.

Employees do not enter IDLH environments

VOLUNTARY RESPIRATOR USE

In situations where respirator use is not mandatory, NIOSH approved filtering facepieces (dust masks) may be used if employee chooses. No other type of respirators shall be used.

Employees who choose to use filtering facepieces voluntarily shall be trained on the uses, limitations and capabilities, cleaning, maintenance and storage of the dust masks. A copy of the Voluntary Respiratory Protection Training and Appendix D to 1910.134 shall be given to the employee. No fit test or medical exam is required. *click here for voluntary respiratory protection training and Appendix D.*

RESPIRATOR TRAINING

Training is done in house before employees wear their respirators and annually thereafter as long as they wear respirators. Our supervisors or crew bosses who wear respirators or supervise employees who do, will also be trained on the same schedule.

Additional training will also be done when an employee uses a different type of respirator or workplace conditions affecting respiratory hazards or respirator use have changed.
Training will cover the following topics:

- Why the respirator is necessary
- The respirator's capabilities and limitations,
- How improper fit, use or maintenance can make the respirator ineffective,
- How to properly inspect, put on, seal check, use, and remove the respirator,
- How to clean, repair and store the respirator or get it done by someone else,
- How to use a respirator in an emergency situation or when it fails,

- Medical symptoms that may limit or prevent respirator use,
- Our obligations under the Respirators Rule.

Our training program is provided by an outside vendor.

RESPIRATORY PROGRAM EVALUATION

We evaluate our respiratory program for effectiveness by doing the following steps:

- Checking results of fit-test results and health provider evaluations.
- Talking with employees who wear respirators about their respirators – how they fit, do they feel they are adequately protecting them, do they notice any difficulties in breathing while wearing them, do they notice any odors while wearing them, etc.
- Periodically checking employee job duties for changes in chemical exposure.
- Periodically checking maintenance and storage of respirators.
- Periodically checking how employees use their respirators.

RECORDKEEPING

The following records will be kept:

- A copy of this completed respirator program
- Employees' latest fit-testing results
- Employee training records
- Written recommendations from our medical provider
- Voluntary respiratory acknowledgement

The records will be kept at the following location: TUI Main Office, 1904 SE 6th Place Battle Ground WA 98604 and on site when applicable.

Employees will have access to these records.

The following pages are informational pages or forms you can use as attachments to the sample program. Links to these are provided in the sample program.

HOW TO SELECT THE CORRECT RESPIRATOR

The type and brands of respirators vary widely ranging from simple dust masks to supplied air respirators like the kind firemen wear. Following is a description of the main types of respirators.

DUST MASKS (FILTERING FACEPIECES)

These simple, two-strap disposable dust masks are designed only for dusts. They are not as protective as other respirators, but do an adequate job in many cases, unless the dust is really toxic or copious. Don't confuse these two-strap masks with the less protective one-strap dust mask designed only for pollen or non-toxic dust.

HALF-FACE AIR-PURIFYING RESPIRATOR

These respirators are sometimes called "half-face" or "half-mask" respirators since they cover just the nose and mouth. They have removable cartridges that filter out either dust, chemicals or both. Selecting the correct cartridges is essential since they are designed for particular types of chemicals or dust. A reputable respirator vendor can assist you in selecting the correct cartridges. These cartridges are typically removable and sometimes interchangeable. Cartridges are available for solvents, ammonia, chlorine, acids and other chemicals. The cartridges must be changed out or replaced periodically, especially for chemicals, since they can absorb only so much contaminant before breakthrough occurs. A few cartridges are equipped with end-of-service indicators that show when a cartridge should be replaced. Most cartridges don't have this indicator and you must develop a change-out schedule to prevent breakthrough. The change-out schedule is based on the chemical concentration, physical work effort, temperature and humidity. Many respirator manufacturers have cartridge change schedule calculators available on the Internet.

FULL-FACE AIR-PURIFYING RESPIRATOR

In some situations, you may need or want to use full-face respirators. This type of respirator is used when the air contaminant irritates the eyes. They also provide somewhat higher protection to the lungs since they tend to fit tighter and are less prone to leaking. These respirators also have replaceable cartridges that must be changed on a regular basis as described above for half-face respirators.

POWERED AIR PURIFYING RESPIRATOR (PAPR)

Powered Air Purifying Respirators have a battery pack that draws air through replaceable cartridges and blows into a full facepiece, helmet or hood. These respirators are often more comfortable in hot weather and some can provide more protection, depending on the type. The cartridges must be changed regularly as described for half-face respirators above.

Table 5 **Assigned Protection Factors (APF) for Respirator Types**	
If the respirator is an	**Then the APF is**
Air-purifying respirator with a: • Half-facepiece • Full-facepiece **Note:** Half-facepiece includes ¼ masks, filtering facepieces (dust masks), and elastomeric (rubber) facepieces.	 10 100
Powered air-purifying respirator (PAPR) with a: • Loose-fitting facepiece • Half-facepiece • Full-facepiece, equipped with HEPA filters, chemical cartridges or canisters • Hood or helmet, equipped with HEPA filters, chemical cartridges or canisters	 25 50 1000 1000
Air-line respirator with a: • Half-facepiece and designed to operate in demand mode • Loose-fitting facepiece and designed to operate In continuous flow mode • Half-facepiece and designed to operate in continuous-flow, **or** pressure-demand mode • Full-facepiece and designed to operate in demand mode. • Full-facepiece and designed to operate in continuous-flow or pressure-demand mode • Helmet or hood and designed to operate in continuous-flow mode	 10 25 50 100 1000 1000
Combination respirators: • Find the APF for each type of respirator in the combination. • Use the lower APF to represent the combination	The lowest value

For help in using this table, see the "Helpful Tool" from the Respirators Rule

Use **Table 6** below to select air-purifying respirators for particle, vapor, or gas contaminants.

Table 6
Requirements for Selecting Air-purifying Respirators

If the contaminant is a:	Then
Gas or vapor 	Provide a respirator with canisters or cartridges equipped with a NIOSH-certified, end-of-service-life indicator (ESLI) (*note: there just a few of these)* **or** If a canister or cartridge with an ESLI is **not** available, develop a cartridge change schedule to make sure the canisters or cartridges are replaced before they are no longer effective (*note: most cartridge respirators fit in this category)* **or** Select an air-supplying respirator
Particle, such as a dust, spray, mist, fog, fume, or aerosol 	Select respirators with filters certified to be at least 95% efficient by NIOSH. For example, N95s, R99s, P100s, or High Efficiency Particulate Air filters (HEPA) **Or** You may select respirators NIOSH certified as “dust and mist,” “dust, fume, or mist,” or “pesticides.” You can only use these respirators if particles primarily have a mass median aerodynamic diameter of at least 2 micrometers *Note: These latter respirators are no longer sold for occupational use, but some employers may still be using them.*

HOW TO EVALUATE YOUR WORKPLACE FOR EMPLOYEE EXPOSURE TO CHEMICALS

Respirators are required when employees are exposed (can inhale) chemicals or dust in the air that are at harmful levels. These can include vapors from handling solvents, spray-painting, dust from grinding or sanding, or welding fumes. If you manage a small business, you are probably quite familiar with each employee’s job, what chemicals they use or how much welding, spray painting, grinding or sanding they do. Your employees may have told you that the chemical odors or dust bothered them or that they were worried about their chemical exposure. You may have switched to less hazardous chemicals. Or you may have no alternative but to use more hazardous chemicals to do the job or make your product. But without some knowledge of the amount of chemical or dust in

the air in the workplace, you cannot know whether your employees are exposed to harmful amounts of chemicals they use.

Just about every chemical has its toxic amount or level that will make a person sick. Even too much table salt can be harmful. On the other hand, highly toxic chemicals can be used without harm to employees if handled properly. Most commonly used chemicals have safe limits or "permissible exposure limits" in the air that if exceeded will cause harm. To view the list of chemicals with WISHA permissible exposure limits, click here. If these limits are exceeded, you are required to take steps to protect your employees from that air exposure. If the levels cannot be reduced below the permissible exposure limits by ventilation, changes in the process or reduction in the length of time of exposure, then you must provide respirators to exposed employees.

The best way to accurately determine the levels of chemicals or dust in the air is to do some type of air sampling. There are a variety of instruments and devices for measuring air contaminants. Some are simple and cheap, most are quite expensive. The methods for doing the air sampling accurately are usually fairly complicated and should not be done by a layperson. Air sampling can be done by WISHA industrial hygiene consultants at your request. This is a free service and will not result in a citation or penalty or a report to WISHA safety inspectors. To request this service, contact the nearest Department of Labor & Industries Office near you. Click here for contact information. You can also have a private industrial hygiene consultant conduct air sampling. They can be found under "industrial hygiene services" in the Yellow Pages.

If you belong to a trade association or industry group, that organization may have information on common chemical hazards and methods of controls. The material safety data sheets for products used also provide information about the hazards of the chemicals, permissible exposure limits, methods of controls and recommended respirators.

SAMPLE RESPIRATOR FIT TEST TRAINING RECORD

Name: _____ **Initials**: _____

Type of qualitative/quantitative fit test used: _____

Name of test operator: _____ **Initials**: _____

Date: _____

Respirator Mfr./Model/Aproval no. Size Pass/Fail or Fit Factor

Note: "Fit factor" is numerical result of quantitative fit test from instrument reading

1. _____S M L P F _____

2. _____S M L P F _____

3. _____S M L P F _____

4. _____S M L P F _____

Clean Shaven? Yes___ No___ (Fit-test cannot be done unless clean-shaven)

Medical Evaluation Completed? Yes___ No___

NOTES: _____

_____

_____

_____

This record indicates that you have passed or failed a qualitative or quantitative fit test as shown above for the particular respirator(s) shown. Other types will not be used until fit tested.

SAMPLE RESPIRATOR TRAINING RECORD

_____

Employee Name (printed)
I certify that I have been trained in the use of the following respirator(s):

This training included the inspection procedures, fitting, maintenance and limitations of the above respirator(s). I understand how the respirator operates and provides protection. I further certify that I have heard the explanation of the respirator(s) as described above and I understand the instructions relevant to use, cleaning, disinfecting and the limitations of the respirator(s).

_____

Employee Signature

_____

Instructor Signature

_____

Date

EMPLOYER-PROVIDED INFORMATION FOR MEDICAL EVALUATIONS

This form may be used by the employer to give to your medical provider, information on respirator use by your employees, but it is not a required form. You can also consult directly with your medical provider and discuss the information below.
You must also give the medical provider a copy of your written respiratory program and copy of the Respirators Rule

Specific Respirator Use Information

Employee Name: _____

Company name: _____

Employee job title: _____

Company Address: _____

Company contact person and phone
#:_____

1. Will the employee be wearing protective clothing and/or equipment (other than the respirator) when using the respirator?

Yes/No _____ If "Yes," describe protective clothing and/or equipment:

_____
_____
_____
_____

2. Will employee be working under hot conditions (temperature exceeding 77°F)?

Yes/No _____ If "Yes", describe nature of work and duration:

_____
_____
_____
_____

3. Will employee be working under humid conditions? Yes / No_____

4. Describe any special or hazardous conditions the employee could encounter when using the respirator (for example, confined spaces, life-threatening gases).

_____

_____

_____

Specific Respirator Use Information, Continued

Check Box	Respirator Type	Face / Head Cover Type (half or full face, helmet, or hood)	Frequency of Use (hours per day, week, or month)	Work Effort Light, Moderate, Heavy (see descriptions below)	Respirator Wt.
	Disposable facepiece particulate filter (N, R or P series)	1/2 facepiece			
	Mask with replaceable filter or cartridge				
	Mask with canister				
	Powered air-purifying respirator (PAPR)				
	Air line, continuous flow				
	Air line, negative pressure demand				
	Air line, positive pressure demand				
	SCBA, negative pressure demand	Full facepiece			
	SCBA, positive pressure demand	Full facepiece			

WORK EFFORT DESCRIPTIONS

Examples of a **light work effort** are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

Examples of **moderate work effort** are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load

(about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

Examples of **heavy work effort** are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lb.).

CHECK PROCEDURES (FROM RESPIRATORS RULE)

Table 21
User Seal Check Procedure

Important Information for Employees:

- You need to conduct a seal check each time you put your respirator on before you enter the respirator use area. The purpose of a seal check is to make sure your respirator (which has been previously fit tested by your employer) is properly positioned on your face to prevent leakage during use and to detect functional problems.
- The procedure below has 2 parts; a positive pressure check and a negative pressure check. You must complete both parts each time. It should only take a few seconds to perform, once you learn it.
  - If you can't pass both parts, your respirator is not functioning properly, see your supervisor for further instruction.

Positive Pressure Check:

1. Remove exhalation valve cover, if removable.
2. Cover the exhalation valve completely with the palm of your hand while exhaling gently to inflate the facepiece slightly.
3. The respirator facepiece should remain inflated (indicating a build-up of positive pressure and no outward leakage).
   - If you detect no leakage, replace the exhalation valve cover (if removed), and proceed to conduct the negative pressure check .
   - If you detect evidence of leakage, reposition the respirator (after removing and inspecting it), and try the positive pressure check again.

Negative Pressure Check:

4. Completely cover the inhalation opening(s) on the cartridges or canister with the palm(s) of your hands while inhaling gently to collapse the facepiece slightly.
   - If you can't use the palm(s) of your hands to effectively cover the inhalation openings on cartridges or canisters, you may use:
     - Filter seal(s) (if available)

       or

     - Thin rubber gloves
5. Once the facepiece is collapsed, hold your breath for 10 seconds while keeping the inhalation openings covered.
6. The facepiece should remain slightly collapsed (indicating negative pressure and no inward leakage).
   - If you detect no evidence of leakage, the tightness of the facepiece is considered adequate, the procedure is completed, and you may now use the respirator.
   - If you detect leakage, reposition the respirator (after removing and inspecting it) and repeat both the positive and negative fit checks.

RESPIRATOR CLEANING PROCEDURES (FROM RESPIRATORS RULE)

Table 20 Respirator Cleaning Procedure	
Step	**Task**
1.	Remove filters, cartridges, canisters, speaking diaphragms, demand and pressure valve assemblies, hoses, or any components recommended by the manufacturer. • Discard or repair any defective parts.
2.	Wash components in warm (43°C [110°F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. • A stiff bristle (not wire) brush may be used to help remove the dirt. • If the detergent or cleaner doesn't contain a disinfecting agent, respirator components should be immersed for 2 minutes in one of the following: - A bleach solution (concentration of 50 parts per million of chlorine). Make this by adding approximately one milliliter of laundry bleach to one liter of water at 43°C (110°F) - A solution of iodine (50 parts per million iodine). Make this in 2 steps: • First, make a tincture of iodine by adding 6-8 grams of solid ammonium iodide and/or potassium iodide to 100 cc of 45% alcohol approximately. • Second, add 0.8 milliliters of the tincture to one liter of water at 43°C (110°F) to get the final solution. - Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer
3.	Rinse components thoroughly in clean, warm (43°C [110°F] maximum), preferably, running water. Note: The importance of thorough rinsing can't be overemphasized. Detergents or disinfectants that dry on facepieces could cause dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts, if not completely removed.
4.	Drain components.
5.	Air-dry components or hand dry components with a clean, lint-free cloth.
6.	Reassemble the facepiece components. • Replace filters, cartridges, and canisters, if necessary (for testing)
7.	Test the respirator to make sure all components work properly.

TAPANI RESPIRATORY PROTECTION TRAINING CHECKLIST

Voluntary Only

User's name (print)_____

Trainer's name (print)_____

1. Medical Evaluation: N/A (for voluntary use only)
2. Fit Tested: N/A (for voluntary use only)
3. Training: Voluntary Mandatory

(complete other side)

NIOSH Approved Filtering Face-piece Respirator 'Dust Mask': Yes_____ No_____

1. True or False: In situations where respirator use is not mandatory, NIOSH approved filtering face-piece respirator (dust mask) may be used if the employee chooses. No other type of respirators shall be used.
    a.
2. True or False: Filtering face piece respirators protect you from airborne dust, spray, mist, fog, fume or aerosol particulates, not solvent vapor, gas or oxygen deficiency.

3. For voluntary respirator use, the following are required:
    a. Medical clearance
    b. Fit test
    c. Training
    d. All of the above

4. The following can affect the effectiveness of the respirator:
    a. Improper fit
    b. Improper usage
    c. Lack of maintenance
    d. All of the above

5. True or false: facial hair is permitted while using a filtering face-piece respirator (dust mask) for voluntary use.

6. True or False: one disadvantage is that filtering face-piece respirator (dust mask) are a one-size-fits-all.

7. The following must be inspected prior to each use:
    a. Tears and rips
    b. Cleanliness
    c. Elasticity of the head band
    d. All of the above

8. True or False: a filtering face-piece respirator (dust mask) must be cleaned after each use.

9. Filtering face piece respirators are effective in:
    a. Emergency situations
    b. Oxygen deficient atmospheres
    c. Dusty areas
    d. All of the above

10. True or False: Sharing filtering face-piece respirator (dust mask) is permitted at Apollo.

11. True or False: If someone is breathing heavily, sweaty, fidgeting, and/or having a panic attack you need to stay calm and get them to a safe area prior to removing the respirator.

APPENDIX D

Information for Employees Using Respirators When Not Required Under the Standard

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

- Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
- Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
- Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust

particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.

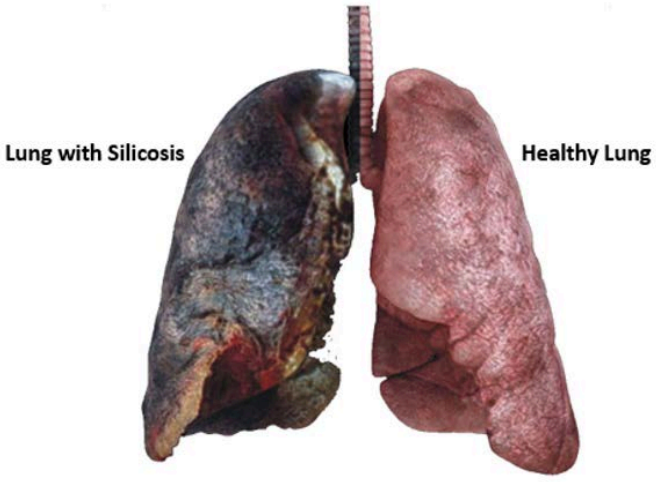
- Keep track of your respirator so that you do not mistakenly use someone else's respirator.

I have been trained and understand the above information
I have received a copy of Appendix D (for voluntary use only)

User's Signature: _____ Date: _____

Trainer's Signature: _____ Date: _____

CRYSTALLINE SILICA PROGRAM



PURPOSE

This chapter is a subsection of the Tapani Respiratory Protection Program and is intended to be used in conjunction with the respiratory protection program. The purpose of this chapter is to control employee exposure to respirable crystalline silica to levels below the Permissible Exposure Limit (PEL) of 50 ug/m3. Since the nature of our work occasionally involves various tasks that may create respirable crystalline silica dust, controls shall be implemented using the guidelines presented in herein. Reference: 29 CFR 1910 & 1926. WAC 296-840. OAR 437-002-0382 & 437-003-1000

HAZARD

Employee exposure to silica can have wide ranging and long lasting health effects. Silica has been a factor in construction and industrial worker health for many years. It is one of the most common elements on the planet and it is dangerous to breathe. Silica can ruin your lungs.

WORK PLAN

- Identify Work tasks that will have silica exposure.
- What engineering controls will be used for silica exposure.
    - Provide proper exhaust too minimize airborne dust.
    - Hand-held power saws are equipped with integrated water delivery system that continuously feeds water to the blade.
    - When performing work tasks in Table 1 (Table link posted below) and the work performed is more than 4 hours then you must use the greater than column for control requirements.
    - Respirators with the Assigned Control Factor (APF) of 10 and 50, including HEPA filters.

HOUSEKEEPING

- In areas where silica dust may be present, remove all silica contaminated debris and maintain all surfaces free from accumulations of dust to minimize potential silica exposure.
- Acceptable methods of silica dust removal include wet methods such as wet sweeping, brushing, wiping. Use a HEPA vacuum when wet methods are not feasible.
- Unacceptable methods of silica dust removal include dry sweeping, vacuum cleaners, shop vacuums, and compressed air.
- Empty dust collection canisters or bags in a way that minimizes spreading dust into the air.

MEDICAL SURVEILLANCE

Employees using a respirator for protection from respirable crystalline silica more than 30 days per year, must undergo a medical exam by a Professional Licensed Healthcare Practitioner. Tapani will

make the medical surveillance available at no cost to the employee, and at a reasonable time and place for each employee. The number of days must be tracked on the Work Plan and submitted to a Safety Manager.

SPECIFIED EXPOSURE CONTROL METHODS

For each employee engaged in a task identified on TAble 1, the employer shall fully and properly implement the engineering controls, work practices and respiratory protection described in Table 1, unless the employer assesses and limits the exposure of the employee to respirable crystalline silica in accordance with alternate exposure and control measures.

SUPERVISORS DUTIES

- Identify potential silica exposure in planning phase of work. Assure that no employee is exposed to an airborne concentration in excess of 4 hours and saws are equipped with integrated water delivery system that continuously feeds water to the blade.
- Substitute less hazardous products where possible.
- Ensure requirements laid in the work plan are followed for employee protection.
- **Complete a work plan**.
- Ensure the tools, equipment, and PPE necessary to implement the work plan are available.
- Ensure workers understand the tasks and controls for silica-containing materials (e.g., concrete) as specified in the Work Plan.
- Ensure that workers use the proper respirators and have been medically cleared, fit-tested, and trained.
- Direct the work in a manner that ensures the risk to workers is minimized and adequately controlled.
- Act as a competent person and conduct frequent and regular inspections of job sites, materials, and inspections.
- Ensure a medical surveillance has been completed on all employees before exposure.

EMPLOYEE DUTIES

- Comply with the provisions of this Respiratory Protection Plan.
- Know the hazards of respirable crystalline silica dust exposure.
- Use the prescribed protective equipment in an effective and safe manner.
- Set up the operation in accordance with the work plan.
- Follow established work procedures as directed by their supervisor.
- Follow manufacturer’s instructions for all equipment and PPE.
- Ensure a medical surveillance has been completed before exposure. (Has the employee worn a respirator for 30 or more days in the past year.)

PROCEDURES FOR SUPERVISORS

- Complete a Tapani pre-task plan and file the plan electronically.
- Substitute or eliminate the use of silica containing materials where possible.
- Implement Engineering controls where substitution is not feasible
    - Water spray systems
    - HEPA vacuum systems
- Select administrative controls when possible before using PPE.
    - Posting of warning signs.
    - Rescheduling of work as to avoid the activities of others
    - Relocating unprotected workers away from dusty areas.
- PPE: Use PPE correctly. Be clean shaven where respirators are required.

HYGIENE

Where silica containing materials are being used or cut the dust that is produced is a hazard. This Crystalline Silica dust must be handled carefully.

- Do not use a backpack blower to blow off the work area. Use a HEPA filter vacuum to pick up dust.
- When wet cutting, the slurry is safe but when it dries the dust is hazardous. Wash slurry away or vacuum the dust.
- Clothing may contain hazardous silica dust after cutting or grinding tasks are complete. Remove contaminated clothing before leaving the work area. It is recommended to wear protective clothing (coveralls) that can be removed right after the silica work is performed. Tyvek or paper coveralls will be provided at no cost to employees.
- PPE should be removed upon work completion and cleaned or disposed of after each use.
- Employees must wash hands prior to leaving work.
- Ensure contaminated PPE, including footwear is not worn outside the work areas prior to being cleaned.

TRAINING

Include respirable crystalline silica health hazards in the Hazard Communication training and ensure each employee understands the health hazards, the work tasks associated with potential exposure and the controls in place to prevent and reduce exposure.

Training and information for RCS must include the following topics:

- Contents of Federal or State regulations which may include:
- Specific tasks that could expose workers to RCS
- The identity of the competent person
- The details of the Work Plan for Respirable Crystalline Silica.

- Health hazards associated with exposure to respirable crystalline silica dust (including cancer, lung effects, immune system effects, and kidney effects).
- Operations and materials that can produce respirable crystalline silica dust.
- Engineering and work practice control methods.
- Acceptable housekeeping procedures.
- Proper use of respirators and the respirator standard.
- Personal Hygiene procedures that reduce potential exposures and cross contamination.
- Details of the medical surveillance requirements.

RECORDS

- Exposure records shall be maintained for 30 years.
- Medical records shall be maintained for the duration of employment plus 30 years.
- Work Plan for Respirable Crystalline Silica shall be archived with the job documents.

Table 1 Specific Exposure Control Methods

Work Plan for Respirable Crystalline Silica

Tapani

1. Location (Building, Room):			
2. Description of Work:		**3. Job #:**	
4. Type and Quantity of RCS:	☐ % of Silica in material(s) is: _____	☐ No sample collected	
5. Project Duration:			

6. Tasks & Tools selected from Table 1 if applicable

7. Control Method selected from Table 1 and/or Alternate Exposure Evaluation:

8. Time to perform Task per day: ☐ **<4 hours** | ☐ **>4 hours**

9. Number of Days of Required Respirator Use:

10. Clean-up Procedures:

11. Restricted Access Methods Required? If yes explain controls below.

12. Air Monitoring:	☐ Arranged with EH&S ☐ Following Table 1. No air monitoring will be conducted.	☐ Previous air monitoring has shown that employee exposures are below the Action Level and PEL for this task.
13. Worker Protection:	☐ Respirator (specify) ☐ Coveralls ☐ Shoe covers	☐ Gloves ☐ Disposable hoods ☐ Safety glasses

14. List all workers on the project (attach additional sheets if necessary):

Name	Current Training		
	☐ Silica Awareness	☐ Respiratory Protection	☐ Medical Clearance
	☐ Silica Awareness	☐ Respiratory Protection	☐ Medical Clearance
	☐ Silica Awareness	☐ Respiratory Protection	☐ Medical Clearance
	☐ Silica Awareness	☐ Respiratory Protection	☐ Medical Clearance
	☐ Silica Awareness	☐ Respiratory Protection	☐ Medical Clearance
	☐ Silica Awareness	☐ Respiratory Protection	☐ Medical Clearance
	☐ Silica Awareness	☐ Respiratory Protection	☐ Medical Clearance

15. I certify that all required precautions including, but not limited to, wearing of proper protective equipment and clothing, participation in a medical surveillance program if necessary, and following the procedures referenced above will be followed during this project. These employees have received appropriate training in the tasks to be performed and understand the risks associated with working with silica-containing material.

Signature/Supervisor:	**Printed Name:**	**Date:**
Competent Person:	**Printed Name:**	**Date:**

THIS WORK PLAN MUST BE AVAILABLE AT THE JOB SITE.

AMMONIA

PURPOSE

The purpose of this plan is to provide guidance and to ensure the safety of crews working around Ammonia . Working on/near industrial refrigeration machinery rooms, equipment and/or piping; Working in petroleum refineries; or Working with/near agricultural fertilizer.
Ammonia is a colorless gas under normal conditions. It can be a liquid under pressure. It has a pungent, suffocating odor. Anhydrous Ammonia is attracted to water and at ambient temperature is mainly a gas.

HAZARDS

High concentrations of ammonia gas, liquid ammonia and solutions of ammonia can cause harm if inhaled or if they come into contact with eyes or skin.
Exposure of the eyes to ammonia may cause burning, tearing, temporary blindness and severe eye damage. Exposure of the skin to ammonia may cause severe burns and blistering. Exposure of the respiratory tract (mouth, nose and throat) to ammonia may cause runny nose, coughing, chest pain, severe breathing difficulties, severe burns and death.

EMPLOYEE DUTIES

Employees should be provided with and required to use impervious clothing, gloves, safety glasses, face shields and other appropriate protective clothing necessary to prevent any possibility of skin contact with liquid anhydrous ammonia or aqueous solutions of ammonia containing more than 10% by weight of ammonia. Similar precautions should be taken to prevent the skin from becoming frozen from contact with vessels containing liquid anhydrous ammonia.

SUPERVISORS DUTIES

- Identify potential Ammonia
- Substitute less hazardous products where possible.
- Ensure requirements laid in the work plan are followed for employee protection.
- Complete a work plan.
- Ensure the tools, equipment, and PPE necessary to implement the work plan are available.
- Ensure workers understand the tasks and controls for (grass seed) as specified in the Work Plan.
- Ensure that workers use the proper PPE.

TRAINING

Include respirable crystalline silica health hazards in the Hazard Communication training and ensure each employee understands the health hazards, the work tasks associated with potential exposure and the controls in place to prevent and reduce exposure.
Training and information for Ammonia must include the following topics:

- Contents of Federal or State regulations which may include:
- Specific tasks that could expose workers to Ammonia
- The details of the Work Plan for Ammonia.
- Health hazards associated with exposure to ammonia (including cancer, lung effects, immune system effects, and kidney effects).
- Acceptable housekeeping procedures.
- Personal Hygiene procedures that reduce potential exposures and cross contamination.

SPECIFIED EXPOSURE CONTROL METHODS

Employees should be aware of contingency plans and provisions. Employees must be informed where ammonia is used in the facility and aware of additional plant safety rules. If exposed to Ammonia employee / employer should access our SDS sheets on page 78. And also call 800-222-1222 (Poison Center.)

BENZENE

HAZARD SUMMARY

Benzene is found in the air from emissions from burning coal and oil, gasoline service stations, and motor vehicle exhaust. Acute (short-term) inhalation exposure of humans to benzene may cause drowsiness,dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels,unconsciousness. Chronic (long-term) inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia, in occupational settings. Reproductive effects have been reported for women exposed by inhalation to high levels, and adverse effects on the developing fetus have been observed in animal tests. Increased incidence of leukemia (cancer of the tissues that form white blood cells) have been observed in humans occupationally exposed to benzene. EPA has classified benzene as known human carcinogen for all routes of exposure.

SOURCES AND POTENTIAL EXPOSURE

Individuals employed in industries that manufacture or use benzene may be exposed to the highest levels of benzene. (1) Benzene is found in emissions from burning coal and oil, motor vehicle exhaust, and evaporation from gasoline service stations and in industrial solvents. These sources

contribute to elevated levels of benzene in the ambient air, which may subsequently be breathed by the public. (1) Tobacco smoke contains benzene and accounts for nearly half the national exposure to benzene. (1) Individuals may also be exposed to benzene by consuming contaminated water. (1) Benzene may be encountered at refineries and laboratories, during refueling and tank gauging, and when completing oil field and pipeline maintenance operations.

SMELL AND LOOKS LIKE

Benzene is a clear, colorless liquid with a pleasant, sweet odor. The odor of benzene does not provide adequate warning of its hazard.

ASSESSING PERSONAL EXPOSURE

Measurement of benzene in an individual's breath or blood or the measurement of breakdown products in the urine (phenol) can estimate personal exposure. However, the tests must be done shortly after exposure and are not helpful for measuring low levels of benzene. Benzene can affect your health if you inhale it, or if it comes in contact with your skin or eyes. Benzene is also harmful if you happen to swallow it. If you have short-term (acute) exposure 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. 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.

PPE

Respirators are required for those operations in which engineering controls or work practice controls are not feasible to reduce exposure to the permissible level. B. Protective Clothing. You 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. C. You must wear splash-proof safety goggles if it is possible that benzene may get into your eyes. In addition, you must wear a face shield if your face could be splashed with benzene liquid.

FLAMMABLE

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. Smoking is prohibited in areas where benzene is used or stored.

HEALTH HAZARD INFORMATION

Acute Effects: Coexposure to benzene with ethanol (e.g., alcoholic beverages) can increase benzene toxicity in humans. (1) Neurological symptoms of inhalation exposure to benzene include drowsiness, dizziness, headaches, and Neurological symptoms of inhalation exposure to benzene include drowsiness, dizziness, headaches, and unconsciousness in humans. Ingestion of large amounts of benzene may result in vomiting, dizziness, and convulsions in humans. (1) Exposure to liquid and vapor may irritate the skin, eyes, and upper respiratory tract in humans. Redness and blisters may result from dermal exposure to benzene. (1,2) Animal studies show neurologic, immunologic, and hematologic effects from inhalation and oral exposure to benzene. (1) Tests involving acute exposure of rats, mice, rabbits, and guinea pigs have demonstrated benzene to have low acute toxicity from inhalation, moderate acute toxicity from ingestion, and low or moderate acute toxicity from dermal exposure. (3) The reference concentration for benzene is 0.03 mg/m3 based on hematological effects in humans. The RfC is an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive groups) that is likely to be without appreciable risk deleterious noncancer effects over a lifetime.

CHRONIC EFFECTS (NONCANCER):

Chronic inhalation of certain levels of benzene causes disorders in the blood in humans. Benzene specifically affects bone marrow (the tissues that produce blood cells). Aplastic anemia (a risk factor for acute nonlymphocytic leukemia), excessive bleeding, and damage to the immune system (by changes in blood levels of antibodies and loss of white blood cells) may develop. (1) In animals, chronic inhalation and oral exposure to benzene produces the same effects as seen in humans. (1) Benzene causes both structural and numerical chromosomal aberrations in humans. (1) EPA has established an oral Reference Dose (RfD) for benzene of 0.004 milligrams per kilogram per day (mg/kg/d) based on hematological effects in humans. The RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without appreciable risk of deleterious noncancer effects during a lifetime. It is not a direct estimator of risk, but rather a reference point to gauge the potential for effects. At exposures increasingly greater than the RfD, the potential for adverse health effects increases. Lifetime exposure above the RfD does not imply that an adverse health effect would necessarily occur. (4) EPA has established a Reference Concentration (RfC) of 0.03 milligrams per cubic meter (0.03 mg/m3) for benzene based on hematological effects in humans. The RfC is an inhalation exposure concentration at or below which adverse health effects are not likely to occur. It is not a direct estimator of risk, but rather a reference point to gauge the potential for effects. At lifetime exposures increasingly greater than the reference exposure level, the potential for adverse health effects increases.

REPRODUCTIVE/DEVELOPMENTAL EFFECTS

There is some evidence from human epidemiological studies of reproductive and developmental toxicity of benzene, however the data do not provide conclusive evidence of a link between exposure and effect. (4) Animal studies have provided limited evidence that exposure to benzene may affect reproductive organs, however these effects were only observed at exposure levels over the maximum tolerated dose. (4) Adverse effects on the fetus, including low birth weight, delayed bone formation, and bone marrow damage, have been observed where pregnant animals were exposed to benzene by inhalation.(4)

CANCER RISK

Increased incidence of leukemia (cancer of the tissues that form white blood cells) has been observed in humans occupationally exposed to benzene. (1,4) EPA has classified benzene as a Group A, known human carcinogen. (4) EPA uses mathematical models, based on human and animal studies,to estimate the probability of a person developing cancer from breathing air containing a specified concentration of a chemical. EPA calculated a range of 2.2 x 10 -6 to 7.8 x 10 -6 as the increase in the lifetime risk of an individual who is continuously exposed to 1 µg/m3 of benzene in the air over their lifetime.

HEXAVALENT CHROMIUM

INTRODUCTION

Hexavalent Chromium (Cr(VI)) is a heavy metal component of stainless steel. Stainless steel is widely used in industrial processes because of its resistance to corrosion.

The fume from welding processes may contain compounds of chromium, including hexavalent chromium, and of nickel. The composition of the base metals, the welding materials used, and the welding processes affect the specific compounds and concentrations found in the welding fume.

The major concern in the mechanical construction industry is the potential for overexposure from fumes created by welding or plasma cutting on stainless steel pipe and ducts, dust from grinding on stainless steel and from skin exposure. In most applications, engineering controls such as using localized exhaust ventilation and good welding work practices will mitigate the chances of overexposure. Respiratory protection will be required when adequate ventilation is not achievable.

POLICY

It shall be the policy of Tapani, to implement the various requirements of the Chromium Exposure Regulation as required by the U.S. Department of Labor, Occupational Safety and Health Administration §1910.1026.

Chromium Exposure Plan applies to all construction work where an employee may be occupationally exposed to chromium. All work related to construction, alteration or repair is included. Under this plan, construction is to include, but not limited to the following: Fumes from welding processes.

HEALTH EFFECTS OF OVER-EXPOSURE TO FUMES CONTAINING CHROMIUM AND NICKEL

Depending upon the level of exposure, Hexavalent Chromium can irritate the nose, throat and lungs, leading to nasal ulcers, lung cancer, and can cause skin rashes, skin ulcers and permanent eye damage.
Stainless Steel contains nickel and chromium. Nickel can cause asthma. Nickel and Chromium can cause cancer. Chromium cancer may not show up for 10 to 40 years.

Similar to the effects produced by fumes from other metals.

Can cause symptoms such as runny nose, sneezing, coughing, sores in nose and on skin, nausea, headaches, dizziness, and respiratory irritation.

Some persons may develop sensitivity to chromium or nickel which can result in dermatitis or skin rash. Prolonged skin contact can result in dermatitis and skin ulcers. Some workers develop an allergic sensitization to chromium. In sensitized workers, contact with even small amounts can cause a serious skin rash. Kidney damage has been linked to high dermal exposures.

Chromium can irritate the nose, throat, and lungs. Repeated or prolonged exposure can damage the mucous membranes of the nasal passages and result in ulcers. In severe cases, exposure causes perforation of the septum (the wall separating the nasal passages).

Direct eye contact with chromic acid or chromate dusts can cause permanent eye damage.

EXPOSURE LIMITS

The U.S. Department of Labor establishes maximum limits of exposure to chromium for all workers covered, including a Permissible Exposure Limit and Action Level. The Permissible Exposure Limit, or PEL sets the maximum exposure limit for workers to chromium. The exposure limits for Hexavalent Chromium are as follows:

.5 micrograms per cubic meter (µg/m3) of air – When airborne concentrations are at or below this level, the standard is not applicable.

2.5 micrograms per cubic meter (µg/m3) of air – When airborne concentrations are at or above 2.5 micrograms per cubic meter (µg/m3) of air (this is the Action Level), but under 5 micrograms per cubic meter (µg/m3) of air, employers are required to implement certain measures to protect workers from over exposure.

5 micrograms per cubic meter (µg/m3) of air – Airborne concentrations above this level require compliance with more comprehensive requirements of the standard.

Regulated areas must be established when an employee's exposure is or is expected to be in excess of the PEL. Regulated areas shall be marked with warning signs to alert employees. Access is restricted to "authorized persons".

Tapani will implement an effective engineering and safe work practice controls if the exposure level is above the permissible limit for more than 30 days per year. Medical surveillance must be provided to employees who are exposed above the PEL for 30 days or more per year or exposed in an emergency.

ACTION LEVEL

Employees shall not be exposed in excess of the permissible exposure level.
Action Level is the level at which Tapani will begin compliance activities. The Action level, regardless of respirator use, for chromium in this program is an airborne concentration of 50 micrograms per cubic meter as calculated as an 8-hour Time Weighted Average (TWA).

COMPLIANCE PROGRAM

Prior to each job where employee exposure exceeds the PEL, Tapani will establish a program to reduce employee exposure to the PEL or below. The compliance program will provide the following:

- Specific plans to achieve compliance and engineering plans where engineering controls are required.
- Air monitoring data that document the source of chromium emissions.
- A work practice program including regulations for the use of protective work clothing, equipment, housekeeping and hygiene guidelines.
- An employee should report to their foreman if they feel:
    - They have been exposed to at or above safe levels
    - Experience symptoms of exposure

ENGINEERING CONTROLS

- Ventilation such as local exhaust systems that capture airborne Cr(VI) near its source and remove it from the workplace

- Local exhaust or shop fans to extract fumes from work areas
- Dust collection systems with Hepa filters
- Substitute less toxic material or a process that results in lower exposures for a process that causes higher exposures
- Isolation such as placing a barrier between employees and source of exposure

SAFE WORK PRACTICE CONTROLS

Safe work practices require maintenance of separate hygiene facilities (change rooms, showers, hand wash facilities and lunch areas), and require proper housekeeping practices.

HOW TO PROTECT AGAINST OVEREXPOSURE

- Use enough ventilation or exhaust at the arc or both to keep fumes and gasses from your breathing zone and general area.
- Use localized exhaust ventilation to remove fumes and gasses at their source in still air. Keep the exhaust trunk / hood as close to the fume source as possible in order to keep fumes and gasses from your breathing zone.
- Use air blowers to draw fumes away from you and your immediate work area.
- If ventilation is questionable, use air sampling to determine the need for corrective measures.
- OSHA says you must remove all paint and solvents before welding or torch cutting.
- Follow written instructions. Make sure all residues are removed.
- Use the safest welding method for the job. Stick welding makes much less fume than flux core welding. Tig welding reduces Cr(VI) emissions by 90%.
- Use welding rods that produce a low fume. 90% of the fume can come from the rod. Larger diameter rods produce much higher emissions than electrodes of smaller diameter. Welding guns that extract fumes can capture 95% of the fume.
- In a confined space, follow all the OSHA confined space rules – like air monitoring, not storing torches in the space, and ventilation.
- Do not breathe fumes and gasses. Keep your head out of the smoke plume.
- Use proper Protective Protection Equipment.
- Position your welding hood so that fumes will not rise up under it and into your breathing zone.
- If the ventilation is not adequate, such as confined spaces, respiratory protection is required.
- When respiratory protection is required, be sure that you have the required training and proper respirator before starting work.
- Implement good housekeeping procedures. Keep area as free as practicable of accumulations of chromium dust and buildup.
- Vacuums with Hepa filters should be used to keep dust emissions at a minimum.
- Do not blow dust from clothing with air hose. Doing so can embed the dust particles into your skin and eyes and expose others to airborne particles.

- Wash hands and face at the end of every shift and before eating, drinking, smoking, chewing gum, applying cosmetics or using the bathroom.
- Never eat or drink in areas where Hexavalent Chromium may come in contact with your food, skin or eyes.
- Keep exposure as low as possible.

PROTECTIVE CLOTHING AND EQUIPMENT

Tapani will provide and ensure the proper use of personal protective equipment where employees are exposed to chromium above the PEL.

- Wear long-sleeved shirt, welding jacket or welding sleeves
- Wear long pants
- Tyvek suits if necessary
- Wear welding gloves
- Wear safety glasses or goggles
- Wear a face shield over eye protection when grinding
- Wear a welding helmet over eye protection when welding
- Wear appropriate respirator when needed

RESPIRATORS

Engineering and safe work practice controls should be provided to reduce exposure to the lowest feasible level. When engineering and administrative controls do not reduce hazards below the OSHA's permissible exposure level (PEL), employees must wear respirators. Tapani will provide respiratory protection for the employee at no cost, and must ensure that the respirator is used when:

- Employee exposure to chromium exceeds the PEL.
- The employee requests a respirator.
- Employees must be medically evaluated, respirator fit tested and trained before being issued and instructed to wear a respirator.

RECORD KEEPING

Tapani will establish and maintain an accurate record of all monitoring and other data used to conduct employee exposure assessments. Effective management of worker safety and health protection is a decisive factor in reducing the extent and severity or work related injuries and illnesses and their related costs. Tapani is committed to this process.

TRAINING

Tapani has established a training program to educate our employees of hazards, control methods and medical surveillance.

HYDROGEN SULFIDE

PURPOSE

The following Hydrogen Sulfide (H2S) safety program has been established byTapani to control potential employee exposure and other hazards encountered during various operations performed at company work locations. In addition to the requirements and procedures of this program, company employees will be made aware of the host facility's contingency plans and programs for preventing exposure to Hydrogen Sulfide.

APPLICATION

All company personnel whose work assignment may result in an H2S exposure at or above the action level (10 ppm), a level identified as potentially harmful to life. Forman are the company’s designated "competent person" who has the authority and is responsible for determining, before beginning a job, whether H2S is present in the workplace and ensuring that proper safeguards are in place before employees are allowed to enter the site. They will also ensure adequate monitoring is in place, both fixed and personal as appropriate, and that adequate PPE is utilized.

PROCEDURES

Before the planned work of any project where an employee exposure to Hydrogen Sulfide has been identified, a schedule for the development and implementation of appropriate engineering and work practice controls will be developed. These plans shall be reviewed and revised as appropriate based on the most recent exposure monitoring data to reflect the project's current status.
In the event of a Hydrogen Sulfide release during the planned work, employees will immediately evacuate the area and move to a pre-designated site upwind from the leak source.

IDENTIFICATION

Hydrogen Sulfide is a colorless, flammable, extremely hazardous gas with a "rotten egg" smell. It occurs naturally in crude petroleum and natural gas and can be produced by breaking down organic matter and human/animal wastes (e.g., sewage). It is heavier than air and can collect in low-lying and enclosed, poorly ventilated areas such as basements, utility holes, sewer lines, and underground telephone/electrical vaults.
In low concentrations, H2S can sometimes be detectable by its characteristic odor; however, the smell cannot be relied upon to forewarn dangerous concentrations (greater than 100ppm) of the gas because it rapidly paralyzes the sense of smell due to paralysis of the olfactory nerve. More

prolonged exposure to the lower concentrations has a similar desensitizing effect on the sense of smell.

TRAINING

Employees will receive training on the risks associated with Hydrogen Sulfide exposures, the risk control methods employed by the company, and their participation in the medical surveillance program if applicable and reporting procedures for releases and any symptoms associated with an H2S exposure. This training will be provided before the employees begin work in any area where a potential H2S exposure may exist, and changes in the company operations may alter this potential exposure. If exposures are above the action level, employees shall be provided with information and training at least annually after that.

Training for non-routine job tasks regarding Hydrogen Sulfide gas exposure shall be performed on an individual job-by-job basis to address specific elements of each job.

PROPERTIES & CHARACTERISTICS

Listed below are the properties and characteristics of Hydrogen Sulfide:

- H2S is colorless; you cannot see it. Occasionally, it hovers over the ground on cool mornings and appears to be a fog or mist. Always remember that it has no color; it is clear.
- To most people, Hydrogen Sulfide smells like rotten eggs. In small quantities, it has a very offensive odor. In more significant concentrations, it has no odor. This is due to the paralyzing effect H2S has on the olfactory nerve and the sense of smell. This loss of the sense of smell is only temporary and will return as soon as a flow of clean air is established over the olfactory nerve.
- Hydrogen Sulfide is highly corrosive to metals. It causes steel to become brittle with resulting failure under minimum stress. The more complicated the material, the quicker H2S affects it.

HEALTH EFFECTS

The principal hazard of H2S exposure is death by inhalation. It is highly toxic. It will suffocate by attaching itself to the red blood cells in your bloodstream and prevent them from carrying oxygen to the tissues and organs of the body. During exposure, as the gas builds up in your bloodstream, you will find yourself breathing faster and faster. The faster you breathe, the more H2S enters your lungs. Soon the respiratory control center of the brain will become paralyzed and stop functioning. Depending on the concentration, this can happen in less than 3 minutes.

- Alcohol consumption within 24 hours can cause this process to be quicker than average. This is due to the body's oxidation process to rid itself of alcohol. Unfortunately, this process leaves no excess reserve for the body to fight off the effects of H2S. Do not consume alcohol within 24 hours of being exposed to H2S.

When Hydrogen Sulfide is released in lower levels, employees may observe the following symptoms as the exposure time increases:

- Slight ‘rotten egg’ smell
- Eye irritation
- Skin irritation
- Fatigue
- Nausea
- Dizziness
- Headache
- Coughing
- Dryness in the nose and throat
- Irrational behavior
- Loss of consciousness
- Termination of life processes

ENTRY TO SOUR WORK SITES

Before any person enters the immediate area where H2S is present at or above 10 PPM, all of the following conditions will be satisfied:

- The atmosphere in and around all buildings and equipment located on a worksite will be controlled within the occupational exposure limits;
- All employees who work in operations where they may come in contact with Hydrogen Sulfide gas above the occupational exposure limits should be equipped with a personal Hydrogen Sulfide gas detector that is capable of alarming at 10 PPM unless continuous atmospheric monitoring is conducted or checked according to a site-specific procedure;
- Continuous monitoring equipment is present in all buildings to be accessed, or it has been checked according to a site-specific procedure;
- Any duties other than routine shall be according to a site-specific procedure;
- Communication monitoring, entry, and work procedures are in place. A complete risk assessment is to be performed to determine if respiratory protection and emergency backup procedures are in place. Any employee under supplied-air shall have proper training, equipment, and medical clearance before assignment.
- Should this work assignment meet the definition of a confined space, then the special precautions required by our confined space program shall be strictly adhered to.
    - Confined spaces may include but are not limited to tanks, vessels, some bell holes, cellars, and valve vaults.

AIR MONITORING

Monitoring equipment shall be made available in operations where concentrations of H2S in the ambient air could reach 10 PPM or more. All employees in these situations will have completed the required Hydrogen Sulfide Awareness Course as recommended by ANSI/ASSE Z390.1-2006 and know the selection and use of protective equipment.

The toxicity of Hydrogen Sulfide requires that monitoring equipment have a rapid response time to alarm and alert personnel of potentially dangerous concentrations. Hence, the response time of monitoring equipment is an essential criterion for selecting and evaluating such equipment.

PERSONAL DETECTION MONITORS

As an employee of (Insert Company Name), you will be issued a personal H2S detection monitor before performing any work duties at H2S sites. You are required to keep this monitor in good working condition when it is in your possession. Tapani Foreman will calibrate these monitors according to the manufacturer's recommendations.

The employee will be trained on the proper maintenance and use before being given an assignment where H2S could be present.

EMERGENCY EVACUATION PROCEDURES

Owners or operators of known Hydrogen Sulfide environments should have a prepared contingency plan in place. Employers shall make every effort to obtain a copy of this plan before beginning work and use this material for a pre-job briefing or tailgate safety meeting before commencing work. This plan shall be evaluated using the Job Safety Analysis (JSA) process to determine if it offers adequate protection to all employees on the worksite.

- **Evacuate –** Get to a safe area immediately;
    - Move upwind if release is downwind of you;
    - Move crosswind if release is upwind of you;
    - Move to higher ground if possible;
- **Alarm –** Call for help;
- **Assess –** Consider other hazards;
- **Protect* –** Put on breathing apparatus before attempting rescue;
- **Rescue* –** Remove victim to a safe area;
- **Revive* –** Apply CPR, if necessary;
- **Medical Aid –** Arrange transport of victim to medical aid.

CADMIUM AWARENESS

EXPOSURE AND CONTROLS

Workers can be exposed to cadmium by breathing in dusts, fumes, or mists containing cadmium. Cadmium or cadmium compounds can also get on the skin, contaminate clothing or food, and be ingested (which is also one of the routes of exposure).

The most effective way to prevent exposure to a hazardous metal such as cadmium is through elimination or substitution. Substitution with viable, less toxic alternatives to cadmium is available for rechargeable batteries (nickel-metal hydride), plating (zinc, vapor-deposited aluminum), pigments (cerium sulfide), and plastics stabilizers.

The hierarchy of controls describes the order that should be followed when choosing among exposure-control options for a hazardous substance. Generally, elimination or substitution is the preferred choice (most protective) at the top of the hierarchy, followed by engineering controls, administrative controls, work-practice controls, and, finally, personal protective equipment.

Engineering controls include isolating the source, and using ventilation systems or other engineering controls (torch-cutting extensions) to minimize exposure to cadmium. **Administrative actions** include limiting the amount of time a worker performs work involving potential exposure to cadmium. **PPE includes** wearing the proper respiratory protection and clothing.

ARSENIC EXPOSURE

PURPOSE

Tapani is committed to ensuring the health and safety of all employees, contractors, visitors, and the community. This policy has been established to address the potential risks associated with arsenic exposure during construction activities. Our goal is to create a safe and healthy working environment by implementing effective control measures, providing necessary training, and promoting a culture of awareness and compliance.

SCOPE

This policy applies to all employees, contractors, and visitors involved in construction activities where arsenic exposure may occur. It encompasses all Tapani construction sites and facilities.

RESPONSIBILITIES

- **Safety**
    - Safety is responsible for establishing, implementing, and maintaining effective arsenic exposure control measures.
    - Allocate resources to ensure the proper implementation of this policy.
- **Supervisors**

    - Ensure that all workers under their supervision are aware of the risks associated with arsenic exposure and adhere to safety protocols.
    - Monitor and enforce the use of personal protective equipment (PPE) and other safety measures.
- **Employees**
    - Follow all safety guidelines and procedures related to arsenic exposure.
    - Participate in training programs to enhance awareness and understanding of arsenic hazards.

CONTROL MEASURES

- **Risk Assessment**
    - Conduct a thorough risk assessment to identify areas and activities with potential arsenic exposure.
    - Regularly review and update risk assessments as necessary.
- **Engineering Controls**
    - Implement engineering controls such as ventilation systems, enclosures, and isolation measures to minimize arsenic exposure.
    - Ensure that all equipment and tools used are properly maintained to prevent the release of arsenic-containing materials.
- **Personal Protective Equipment (PPE)**
    - Provide appropriate PPE, including respiratory protection, gloves, and protective clothing, to workers exposed to arsenic.
    - Train workers on the proper use, maintenance, and disposal of PPE.
- **Training and Awareness**
    - Conduct regular training sessions for all employees on the hazards of arsenic exposure and safe work practices.
    - Promote a culture of awareness through communication and signage at construction sites.
- **Medical Surveillance**
    - Establish a medical surveillance program for employees working in areas with potential arsenic exposure.
    - Ensure that workers undergo regular health check-ups to monitor any signs of arsenic-related health issues.
- **Emergency Response**
    - Develop and communicate emergency response procedures in the event of accidental arsenic exposure.
    - Conduct drills to ensure all workers are familiar with emergency response protocols.

COMPLIANCE

All employees, contractors, and visitors are required to comply with this policy. Non-compliance may result in disciplinary action, up to and including termination of employment or contract.

REVIEW AND REVISION

This policy will be reviewed periodically to ensure its effectiveness and relevance. Any necessary revisions will be made to reflect changes in technology, regulations, or the work environment.

HEARING CONSERVATION PROGRAM

PURPOSE

The purpose of the Hearing Conservation Program is to ensure that all employees are protected from exposure to noise hazards.
REF. 29 CFR 1926.52 & WAC 296-817

HAZARDS

If an employee is exposed to noise that is 85 dBA or louder on an eight hour time weighted average (TWA), then that employee must be in a hearing conservation program.

GENERAL

Noise is measured with a sound level meter that measures the average noise level over time. Employees who are exposed to noise at or above an eight-hour time-weighted average of 85 dB (decibels) must be covered under a hearing conservation program. For these employees, Tapani has developed this program (at no cost to our employees) the program consists of:

- Baseline hearing test within the first 6 months of exposure.
- Exposure monitoring.
- Exposure controls.
- Employee use of hearing protection
- Comprehensive training explaining hearing loss, hearing protective devices, and the employer's hearing conservation program.
- Warning signs for high noise areas (115 dBA or higher).
- Program oversight, record keeping and training.

EMPLOYEE NOISE EXPOSURE MONITORING

Noise measuring must be done to see if employees are being exposed to noise that is 85 dBA or louder on an eight hour time weighted average (TWA). This measuring can be either sampling performed when needed or monitoring performed all the time.

- Tapani will conduct employee noise exposure monitoring to determine the employee's actual exposure when reasonable information indicates that any employee's exposure may equal or exceed 85 dBA TWA8.
- When conducting the noise exposure monitoring use equipment meeting noise measurement standards ANSI S1.25-1991 type 2. A noise dosimeter is the basis for determining total daily noise exposure for employees. However, with constant noise levels, Tapani may estimate employee noise exposure using measurements from a sound level meter.

Note: Representative monitoring may be used where several employees perform the same tasks in substantially similar conditions. Include all workplace noise from equipment and machinery in use.

Noise Evaluation Criteria

Criteria	Description	Requirements
85 dBA TWA8	Full-day employee noise exposure dose. If you have one or more employees whose exposure equals or exceeds this level, you must have a hearing loss prevention program.	Hearing protection Training Audiometric testing
85.79dba		Hearing Conservation Program
87.42dba	Sampling Taken 7/2019	Hearing Conservation Program
84.44dba	Operator (door closed)	Hearing Conservation Program
84.6 dba	Foreman Top Hand Fabrication	Hearing Conservation Program
90 dBA TWA8	Full-day employee noise exposure dose. If you have one or more employees whose exposure equals or exceeds this level, you must reduce employee noise exposures in the workplace.	Noise controls Hearing protection Training Audiometric testing
93.1dba		Keep door closed & HCP
92.36dba	Sampling Taken 7/2019	Rotate on long shifts & HCP

89.3dba	Operator (door open) Pipe Layer Mechanic Shop	Hearing Conservation Program
115 dBA measured using slow response	Extreme noise level (greater than one second in duration).	Hearing protection Signs posted in work areas warning of exposure
140 dBC measured using fast response	Extreme impulse or impact noise (less than one second in duration).	Hearing protection

CONTROLLING EMPLOYEE NOISE EXPOSURES

Reduce employee noise exposure, using feasible controls, wherever exposure equals or exceeds 90 dBA TWA8. Hearing protection provides a barrier to noise and protects employees but is not considered a control of the noise hazard. Separate requirements apply to hearing protection and are found in WAC 296-817-20015.

Note: Once noise exposures are brought below 90 dBA TWA8, no further reduction is required. However, further reduction of noise may reduce the need for other hearing loss prevention requirements.

- Controls that eliminate noise at the source or establish a permanent barrier to noise are typically more reliable. For example;
    - Replacing noisy equipment with quiet equipment.
    - Using silencers and mufflers.
    - Installing enclosures.
    - Damping noisy equipment and parts.
- Other controls and work practices;
    - Employee rotation.
    - Limiting use of noisy equipment.
    - Rescheduling work.

REPRESENTATIVE SOUND INTENSITIES

0 Decibels – Absolute silence (Space)
10 Decibels – Inside a soundproof room
20 Decibels – Ticking of a watch
40 Decibels – Residential neighborhood; no cars
80 Decibels – Whistle

90 Decibels – truck w/o muffler (90db regularly can cause hearing damage)
100 Decibels – Lawn mower, car horn, chain saw
120 Decibels – Thunder, diesel engine room
130 decibels – Threshold of pain
140 Decibels – Jet aircraft
194 Decibels – Saturn rocket, 50 pounds of TNT
225 Decibels – 12” Naval Gun

EMPLOYEE USE OF HEARING PROTECTION

- Employees are required to use hearing protection when their noise exposure equals or exceeds 85 dBA time weighted average of 8 hours. (TWA8) To ensure the safety of our employees Tapani requires that all jobsite employees, fabrication and mechanics wear hearing protection. Tapani shall evaluate hearing protection for the specific noise environments in which the protector will be used.
- Tapani will provide employees hearing protectors at no cost to employees.
    - Different types of hearing protection:
        - Ear plugs
        - Ear caps
        - Ear muffs
    - The selection will include:
        - Different sizes.
        - Environmental conditions.
        - Medical needs and comfort.
        - Communication requirements.
- Double hearing protection is mandatory for noise exceeding 95dba.

WARNING SIGNS

Post warning signs at the entrances or boundaries of all well-defined work areas where employees are exposed to noise that equals or exceeds 115dBA. The warning signs must clearly indicate that the area is a high noise area and that hearing protectors are required.

PROGRAM OVERSIGHT, RECORD KEEPING AND TRAINING

Tapani’s Safety Coordinator maintains the written program regarding noise and hearing protection. Employees have access to medical records kept about them by the company.

- A baseline, or initial, hearing test must be done within six months if an employee has been exposed to noise that is 85 dBA or louder on an eight hour time weighted average (TWA). Testing to establish a baseline audiogram shall be preceded by at least 14 hours without exposure to workplace noise.

- Training on the hearing conservation program must be given to employees at least one time every year. The training must be updated to stay current with changes in your company's processes.. This training includes;
    - The effects of noise on hearing.
    - Noise controls used in their workplace.
    - Purpose of hearing protectors including;
        - Advantages-Disadvantages of different types of hearing protection.
        - Instructions on selecting, fitting, using and storing hearing protection.
        - The purpose for program evaluation, and availability of records to employees.
- Audiometric Testing.
- Employees who are exposed to noise that is 85 dBA or louder on an eight hour time weighted average (TWA) must have hearing tests (also called "audiograms" or "audiometric testing") available to them. These tests help by showing any hearing loss that might be happening and must be done every year after the baseline test.
    - Audiometric testing is performed in house.
    - Audiometric testing is supervised and reviewed by a licensed or certified audiologist:
    - Audiometric testing is used to identify hearing loss.
- Identify and correct deficiencies in hearing loss prevention program. Evaluate the following.
    - Employee noise exposure measurements;
    - Noise controls in the work area;
    - The selection of hearing protection available and refit employees as necessary;
    - Employee training on noise and the use of hearing protection and conduct additional training as necessary.
- Take appropriate actions when deficiencies are found with your program.
- Unless a physician determines that the standard threshold shift is not work related or aggravated by occupational noise exposure, the employer shall ensure that 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 the employer suspects that a medical pathology of the ear is caused or aggravated by the wearing of hearing protectors.
- Each employee's annual hearing test must be compared to the same employee's original baseline test. This is to see if a significant change, called a "standard threshold shift", has happened. If a standard threshold shift has happened, the employee who has had the standard threshold shift must be told in writing within 21 days of the test results coming out.

DOCUMENTING HEARING LOSS PREVENTION ACTIVITIES

Tapani will retain records for as long as they are needed to determine an employee's exposure, but at least as long as an employee's duration of employment. Tapani will retain exposure measurements for as long as needed to determine an employee's exposure, but at least two (2) years. Tapani will keep as complete of a record as possible.

OUTDOOR HEAT EXPOSURE

SCOPE AND APPLICATION

This standard applies whenever an employee performs work activities, whether in indoor or outdoor environments, where the heat index (apparent temperature) equals or exceeds 80 degrees Fahrenheit.

GENERAL

Heat-related illnesses can happen if workplace activities in a hot environment overwhelm the body's ability to cool itself. This becomes more likely if any of the risk factors are present. Examples include working in a hot environment without adequate access to water for rehydration, working in protective gear that does not allow air circulation across the skin, or working where the humidity is too high for sweat to evaporate.

RISK FACTORS

The following are environmental risk factors for heat illness (see heat index on Page 4):

- Air temperature above 90 degrees F.
- Relative humidity above 40 percent
- Radiant heat from the sun and other sources
- Conductive heat sources such as dark-colored work surfaces
- Lack of air movement
- Physical effort needed for the work
- Use of non breathable protective clothing and other personal protective equipment

The following are personal risk factors for heat illness:

- Lack of acclimation to warmer temperatures
- Poor general health
- Dehydration
- Alcohol consumption
- Caffeine consumption
- Previous heat-related illness

- Use of prescription medications that affect the body's water retention or other physiological responses to heat such as beta blockers, diuretics, antihistamines, tranquilizers, and antipsychotics.

OUTDOOR TEMPERATURE ACTION LEVELS

Access to Shade:

Establish and maintain one or more shade areas that are immediately and readily available to exposed employees that are outdoors when the heat index in the work area equals or exceeds 80 degrees Fahrenheit. The shade areas must meet the following criteria:

- The shade area must either be open to the outside air (at least three open sides) or provide mechanical ventilation for cooling.
- The amount of shade present must be at least enough to accommodate the number of employees on recovery or rest period, so that they can sit in a normal posture fully in the shade. Employees must remove any PPE that retains heat, such as chemical resistant suits, during recovery and rest periods.
- The shade must be located as close as practical to the areas where employees are working.
- Shade present during meal periods must be large enough to accommodate the number of employees on the meal period that remain onsite.
- If trees or other vegetation are used to provide shade, such as in orchards or forests, the thickness and shape of the shaded area must provide sufficient shadow to protect employees.

Exception: When the employer can demonstrate that providing access to shade is not safe or it interferes with the ability of employers and employees to complete the necessary work in a particular situation, for example, during high winds or when an employee is walking through range land, cooling hard hat pads or headbands will be provided. Use, Care and Maintenance; Soak 1 minute in cold water for 3 hours of relief. Machine washable. Moisture-wicking and odor-free with UPF 50+ protection.

Drinking Water

A sufficient supply of drinking water is immediately and readily available to exposed employees at all times, at no cost, when the heat index in the work area equals or exceeds 80 degrees Fahrenheit.

- Supplied drinking water must be either cool or cold.
- Supply each employee with enough drinking water to enable them to consume up to 32 ounces per hour.
- Employees must have ample opportunity to drink water required under this section.

Note: Drinking water packaged as a consumer product and electrolyte-replenishing beverages that do not contain caffeine (for example, sports drinks) are acceptable substitutes, but should not completely replace required water supplies.

High-Heat Practices

When engineering controls (such as fans or air conditioning) and administrative controls (such as scheduling work during the cooler part of the day or limiting an employee's exposure) do not reduce an employee's exposure to a heat index of less than 90 degrees Fahrenheit, implement and maintain high-heat practices and procedures by;

- Communication must occur in a language and vocabulary readily understood by all employees, by voice, electronic, or other equally-effective means, so that employees at the worksite can contact a supervisor at any time, when necessary. An electronic device, such as a cell phone, may be used for this purpose only if reception in the area is constant and reliable.
- Mandatory buddy system. Nobody is to be working alone.
- All employees are authorized to call for emergency assistance.
- When employees work in buildings and structures that do not have a mechanical ventilation system, employers must directly measure the temperature and humidity in these places at the same time and location when occupied by employees to determine the current indoor heat index by using the National Institute for Occupational Safety and Health's (NIOSH) Heat Safety Tool app to determine the heat index outside of the building or structure and assume that it is the same inside;
- Rest break schedule that protects employees exposed to a heat index equal to or greater than 90 degrees Fahrenheit.

Heat index (° F)	Rest break durations and intervals
90 or greater	10 minutes every two hours
100 or greater	15 minutes every hour

Acclimatization

Acclimatization is the beneficial physiological adaptations that occur during repeated exposure to a hot environment. These physiological adaptations include:

- Increased sweating efficiency (earlier onset of sweating, greater sweat production, and reduced electrolyte loss in sweat).
- Stabilization of the circulation.
- The ability to perform work with lower core temperature and heart rate.
- Increased skin blood flow at a given core temperature.

To acclimatize workers, gradually increase their exposure time in hot environmental conditions over a 7-14 day period. New workers will need more time to acclimatize than workers who have already had some exposure.

Acclimatization Schedule

- For new workers, the schedule should be no more than a 20% exposure on day 1 and an increase of no more than 20% on each additional day.
- For workers who have had previous experience with the job, the acclimatization regimen should be no more than a 50% exposure on day 1, 60% on day 2, 80% on day 3, and 100% on day 4.

In addition, the level of acclimatization each worker reaches is relative to the initial level of physical fitness and the total heat stress experienced by the individual.

Maintaining acclimatization

Workers can maintain their acclimatization even if they are away from the job for a few days, such as when they go home for the weekend. However, if they are absent for a week or more then there may be a significant loss in the beneficial adaptations leading to an increased likelihood of heat-related illness and a need to gradually reacclimate to the hot environment.

Some additional information on maintaining acclimatization:

- It can often be regained in 2 to 3 days upon returning to a hot job.
- It appears to be better maintained by those who are physically fit.
- Seasonal shifts in temperatures may result in difficulties.
- Working in hot, humid environments provides adaptive benefits which also apply in hot, desert environments, and vice versa.
- Air conditioning will not affect acclimatization.

TRAINING

Training will be provided prior to outdoor work which exceeds a temperature listed in *Outdoor Temperature Action Levels,* section above, and at least annually thereafter. Employee/supervisor training on the following topics will be provided to all employees who may be exposed to outdoor heat.

- The environmental factors that contribute to heat-related illness;
- General awareness of personal factors that may increase susceptibility to heat-related illness Like: Age, degree of acclimatization, medical conditions, drinking water consumption, alcohol use, caffeine use, nicotine use, and use of medications.
- The importance of removing heat-retaining personal protective equipment such as non-breathable chemical resistant clothing during all breaks.
- The importance of frequent consumption of small quantities of drinking water or other acceptable beverages.
- The importance of acclimatization.
- The different types of heat-related illness, and the common signs and symptoms.

- The importance of immediately reporting heat-related illness, in either themselves or in co-workers to the person in charge and the procedures the employee must follow including appropriate emergency response procedures.

COLD STRESS MONITORING PLAN

PURPOSE

The purpose of this plan is to establish procedures for monitoring and managing cold stress to protect employees working in cold environments from cold-related illnesses and injuries.

SCOPE

This plan applies to all employees, contractors, and visitors who may be exposed to cold environments as part of their work activities.

RESPONSIBILITIES

- Management: Ensure adequate resources for implementing the plan, provide training, and enforce compliance.
- Supervisors: Monitor weather conditions, ensure workers are equipped with proper clothing and PPE, and enforce work/rest schedules.
- Workers: Follow safe work practices, wear appropriate clothing and PPE, and report signs of cold stress or unsafe conditions.

HAZARD IDENTIFICATION AND RISK ASSESSMENT

- Identify work tasks and areas where employees are exposed to cold temperatures.
- Assess risk factors, such as:
    - Air temperature
    - Wind speed (wind chill factor)
    - Duration of exposure
    - Type of clothing and PPE worn
    - Physical condition and health of workers

TRAINING AND AWARENESS

- Provide training on the signs, symptoms, and prevention of cold stress.
- Educate workers on proper clothing, hydration, and nutrition for working in cold environments.

- Ensure workers are aware of emergency procedures for cold-related illnesses.

ENVIRONMENTAL MONITORING

- Weather Monitoring: Regularly monitor weather forecasts and current conditions to anticipate cold stress risks.
- Temperature and Wind Chill: Use thermometers and anemometers to measure air temperature and wind speed on-site.
- Recording Conditions: Keep a log of environmental conditions during work shifts to track exposure.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Clothing: Ensure workers wear multiple layers of loose-fitting, insulating clothing. Provide waterproof and windproof outer layers.
- Head and Face Protection: Supply insulated hats, balaclavas, and face masks to protect against heat loss.
- Hand and Foot Protection: Provide insulated gloves and boots to protect extremities.
- Eye Protection: Use goggles or safety glasses in windy or snowy conditions to prevent frostbite and snow blindness.

WORK AND REST SCHEDULES

- Implement work/rest cycles based on temperature and wind chill to limit exposure.
- Provide warm areas for breaks, such as heated shelters or vehicles.
- Encourage frequent breaks to allow workers to warm up and prevent prolonged exposure.

HEALTH MONITORING

- Buddy System: Pair workers to monitor each other for signs of cold stress, such as shivering, numbness, confusion, or clumsiness.
- Regular Check-Ins: Supervisors should check on workers regularly to assess their condition.
- Health Assessments: Conduct pre-employment and periodic health assessments for workers exposed to cold environments.

EMERGENCY PROCEDURES

- First Aid: Train workers in first aid for cold-related injuries, such as hypothermia and frostbite.
- Emergency Contacts: Maintain a list of emergency contacts, including local medical facilities.

- Evacuation Plan: Develop and communicate procedures for evacuating workers to a warm location in case of severe cold stress.

RECORD KEEPING

- Maintain records of:
    - Training sessions
    - Environmental conditions and monitoring data
    - Health assessments
    - Incident and injury reports

REVIEW AND CONTINUOUS IMPROVEMENT

- Regularly review and update the cold stress monitoring plan to reflect changes in operations, weather conditions, or new hazards identified.
- Encourage feedback from workers to improve safety measures and address any concerns.

COMPLIANCE

- Adhere to relevant occupational safety and health regulations, such as OSHA guidelines for cold stress (e.g., OSHA Cold Stress Guide).
- Ensure all cold stress management practices comply with industry best practices and recommendations

WILDFIRE SMOKE EXPOSURE

INTRODUCTION

Employers with employees who are reasonably anticipated to be exposed to wildfire smoke on the job are required by Washington Administrative Code (WAC) 296-62-085 to include wildfire smoke protection in their written accident prevention program.
The following workplaces and operations are exempt from this rule:

- Enclosed buildings or structures in which the employer ensures that windows, doors, bays, and other exterior openings are kept closed, except when it is necessary to open doors to enter and exit.
- Enclosed vehicles in which the air is filtered by a cabin air filter and the employer ensures that windows, doors, and other openings are kept closed except when it is necessary to open doors to enter or exit.
- Employees exposed to a concentration of $PM_{2.5}$ of 35.5 µg/m3 (Washington Air Quality Advisory [WAQA] 101, Air Quality Index [AQI] 101) or more.

IDENTIFICATION OF HARMFUL EXPOSURES

The employer shall determine employee exposure to $PM_{2.5}$ for worksites covered by this section before each shift and periodically thereafter, as needed to protect the health of the employee, by Washington/Oregon Air Quality Advisory – web/mobile app

HAZARD COMMUNICATION

The Competent Person on the jobsite will be responsible for checking the PM2.5. When the PM2.5 is 55.5 µg/m3 or more, there will be Available protective measures to reduce employees' wildfire smoke exposure.

EXPOSURE SYMPTOM RESPONSE

Employees displaying adverse symptoms of wildfire smoke exposure must be monitored to determine whether medical attention is necessary.

Employers must allow employees who show signs of injury or illness due to wildfire smoke exposure to seek medical treatment, and may not retaliate against affected employees for seeking such treatment.

Employers must also have effective provisions made in advance for prompt medical treatment of employees in the event of serious injury or illness caused by wildfire smoke exposure.

EXPOSURE CONTROLS

Where the $PM_{2.5}$ is 55.5 µg/m^3 (WAQA 101, **AQI 101**) or more, the employer must implement exposure controls whenever feasible.

RESPIRATORY PROTECTION

Where the $PM_{2.5}$ is 35.5 µg/m^3 (**AQI 101**) or more, Tapani will provide respirators at no cost to employees upon request.

Whenever employee exposure to ambient air concentrations of **PM2.5 is at or above 200.9 µg/m3 (AQI 251) and below 500.4 µg/m3 (AQI 501),** ensure that employees wear appropriate NIOSH-approved filtering facepiece respirators when such use would not expose the wearer to a hazard associated with a substantially more serious injury or illness than the potential acute health effects of wildfire smoke exposure.

- NIOSHapproved filtering facepiece respirators **strictly for wildfire smoke**: N95, P95, R95, N99, P99, N100 and P100.

Employee training. Employers must ensure that employees wearing filtering facepiece respirators are trained in the proper use of the respirators, including putting them on and removing them, any limitations on their use, how to care for the respirator, and the ability to demonstrate a seal check as described in section

Instructions for positive pressure user seal check.

- Once you have properly donned the respirator, place your hands over the facepiece, covering as much surface area as possible.
- Exhale gently into the facepiece. The face fit is considered sufficient if a slight positive pressure is being built up inside the facepiece without feeling air passing between your face and the facepiece.

If the particulate respirator has an exhalation valve, then performing a positive pressure check may not be possible. In such cases, a negative pressure check must be performed.

Instructions for negative pressure user seal check.

- Negative pressure seal checks are typically conducted on particulate respirators that have exhalation valves.
- Once you have properly donned the respirator, cover the filter surface with your hands as much as possible and then inhale gently.
- The face fit is considered sufficient if the facepiece slightly collapses towards your face without feeling air passing between your face and the facepiece.

Correcting problems discovered during the seal check. In the case of either type of seal check (positive or negative),

- If air leaks around the nose, use both hands to readjust the nosepiece by placing your fingertips at the top of the metal nose clip.
- Slide your fingertips down both sides of the metal strip to more efficiently mold the nose area to the shape of your nose.
- Readjust the straps along the sides of your head until a proper seal is achieved.

Whenever employee exposure to PM2.5 is at or above 500.4 µg/m3 (AQI 501), you must either be fit tested for your respirator or you must **Stop Work.** For fit testing please contact Safety.

INFORMATION AND TRAINING

The employer must provide all employees effective information and training regarding wildfire smoke before work that exposes the employee to $PM_{2.5}$ levels of 35.5 µg/m3 (WAQA 101, AQI 101) or more, and at least annually thereafter.

Training must include: symptoms of wildfire smoke exposure, potential acute and chronic health effects, the right to report health issues related to wildfire smoke exposure, filtering facepiece respirators, Tapani's methods to protect employees from wildfire smoke, how to respond when employee report or exhibits health symptoms

CONFINED SPACES

PURPOSE

This program is intended to ensure employee safety in confined spaces. A confined space is a space that is large enough and arranged so an employee could fully enter the space and work. It has limited or restricted entry or exit.

HAZARDS

Injuries and fatalities continually occur among construction workers who are required to enter confined spaces. In confined spaces workers are exposed to multiple hazards, any of which may cause injury, illness, or death. Workers are injured and killed from a variety of atmospheric factors and physical agents in confined spaces every year.

- Restricted access and egress.
- Configuration hazards preventing escape.
- Physical hazards such as crushing or drowning.
- Atmospheric hazards.

GENERAL

The construction standard requires that companies follow code for confined spaces when working in confined spaces. All information required by the Confined Space Standard is available to our employees, through their leadership chain and 24 hours a day online. Employers of mobile workers are not required to perform an evaluation for the entire site. Mobile worker employers must evaluate the areas they are responsible for or where their employees will be working.
A confined space has three characteristics; it must have <u>all three</u> characteristics to be considered a confined space.

- Large enough to get your body entirely inside.

- Not designed or intended for continuous human occupation.
- Restricted entry or exit.

CAUTION: Confined spaces must not be entered until they have been evaluated for hazards to determine what type of entry procedure may be used.

EMPLOYEE TRAINING

Employees are trained at no cost to themselves. Training is provided so that employees can obtain knowledge, understanding and develop the skills necessary to perform their tasks. The goal of training is to establish proficiency in job tasks and to introduce new or revised procedures.

- Training topics include, but are not limited to:
    - Roles and responsibilities.
    - Hazards of the permit space.
    - Procedures of the program created to protect employees.
    - The dangers of attempting unauthorized rescue.
- Proficiency certifications are completed by the employee's supervisors and include:
    - Employee name,
    - Training topic,
    - Trainers signature and date of training.

ROLES AND RESPONSIBILITIES

- **All affected** employees must understand the hazards of going into a confined space.
- **Attendants** are the workers who watch the entrance to the confined space. They communicate with the entrants and know how many entrants are in the confined space. They also ask for help in an emergency and do not enter the confined space.
- **Entrants,** the workers who go into the confined space, must know how to use equipment and communicate with the attendant to check-in or ask for rescue.
- **Entry supervisors** check the atmospheric monitoring being done and make sure all hazards have been identified and mitigated. They also make sure help is available if a rescue is needed and keep the area free of unauthorized people.

IDENTIFY PERMIT-REQUIRED CONFINED SPACES

Identify all permit-required confined spaces in the workplace. Use a person with the knowledge, skills, and abilities, capable of identifying actual and potential hazards related to permit-required confined spaces and with the authority to take prompt corrective action, such as an entry supervisor or competent person.

Identification of a permit-required confined space is a two-step process.

- Identify confined spaces:
- A confined space is all of the following;
    - Large enough and arranged so an employee could fully enter the space and work.
    - Has limited or restricted entry or exit.
    - Is not primarily designed for continuous human occupancy.
- Evaluate the actual and potential hazards of each confined space. A permit-required confined space has one or more of the following hazards.
    - Contains or has a potential to contain a hazardous atmosphere.
    - Contains a material with the potential for engulfing someone who enters.
    - Has an internal configuration that could allow someone entering to be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward and tapers to a smaller cross section.
    - Contains any physical hazard. This includes any recognized health or safety hazards including engulfment in solid or liquid material, electrical shock, or moving parts.
    - Contains any other recognized serious safety or health hazard that could either:
        - Impair the ability to self-rescue; or
        - Result in a situation that presents an immediate danger to life or health.

EVALUATING CONFINED SPACES

Evaluate and control hazards before entry into permit-required confined spaces.

- Test for atmospheric hazards; and continuously monitor the atmosphere where employees are/will be working. Test for:
    - Oxygen.
    - Combustible gases and vapors.
    - Toxic gases and vapors.
    - Bump sniffers before each day's use. (Log must be kept with the sniffer for the life of the sniffer)
    - Before entry, using your gas monitors, test the confined space for 20 seconds at every foot.
- Determine that acceptable conditions exist for entry and that these conditions can be maintained during entry operations.
- Once determined that the confined space is safe for entry attach your gas monitor to your harness.
- Use employer's fall protection, rescue retrieval, air-monitoring, ventilation, lighting and communication equipment according to entry procedures.
- If using forced air be sure that the generator is far away from the confined space, not to contaminate your clean air supply.
- You are required to have an SRL attached to your tripod.

- The attendant must maintain contact with the entrant, either visually or by two-way radio, at all times.
- Make sure entrants of more than one employer working at the same time in or around a permit-required confined space, do not endanger each other.

CONTROL ENTRY

It is required that employee access to confined spaces be controlled. Confined spaces must not be entered until they have been evaluated to determine what type of entry procedure may be used. There are two types of confined spaces.

- Permit-required confined space (PRCS)
- Alternate Entry

It is a company responsibility to identify permit required confined spaces and to inform employees of their presence.

Manholes, Vaults, Pipes and Concrete Reservoirs are typically the kinds of confined spaces we encounter at Tapani. These confined spaces may or may not be permit required confined spaces depending on their configuration at the time. It is the competent person/persons, on the job/crews, responsibility to identify confined spaces on job sites. The company will designate competent person/persons onsite who will control entry to permit required confined spaces.

PERMIT-ENTRY PROCEDURES

Before employees enter a permit space, develop and implement procedures to remove entrants in the event of an emergency.

- Identify hazards and evaluate the space, before employees enter it.
- Complete an entry permit, before entry.
    - Tapani self-issues entry permits.
    - Identify the entry Supervisor on the permit. They must sign the permit, authorizing entry.
    - Active permits are available for review by entrants at the time of entry.
    - Permits are filled out electronically on the foreman's tablet, or on paper at the site.
    - Permits are kept open while work is ongoing. The Foreman's tablet or paper permit is kept at the site.attendants
- Previous closed (canceled) permits are available for review.
- Note any difficulties or problems encountered during the entry on the permit. This information is valuable for future entries into the confined space.
- Prevent unauthorized entry to the confined space. Implement procedures to prevent unauthorized persons from entering permit required confined spaces. No one but the entrant, or rescue personnel are allowed in the confined space.

- After the work is completed close (cancel) the permit and then turn it in. Paper permits need to be scanned and then turned in electronically.

INFORMATION REQUIRED ON AN ENTRY PERMIT

Entry permits must include all of the following:

- The space to be entered.
- Purpose of the entry.
- Date and the authorized duration of the entry.
- Hazards of the space to be entered.
- Acceptable entry conditions.
- Results of initial and periodic tests performed to evaluate and identify the hazards and conditions of the space, accompanied by the names or initials of the testers and by an indication of when the tests were performed.
- Measures taken before entry to isolate the space, and eliminate or control hazards.
- Names of entrant and attendant.
- Name of entry supervisor.
- The signature or initials of the original supervisor authorizing entry.
- Communication procedures, for entrants and attendants, used during the entry.
- Equipment needed for entry, such as:
    - Personal protective equipment (PPE).
    - Testing equipment, such as air monitor (sniffer).
    - Rescue equipment. (if any is required)
- Rescue and emergency services available, and how to contact them.
- Other information needed for safety in the particular confined space.

KEEP AND REVIEW ENTRY PERMITS

- Tapani keeps closed (canceled) entry permits for one year to facilitate the review of the permit-required confined space program.
- Tapani updates our written permit-required confined space entry processes, as necessary, to correct deficiencies before allowing subsequent entries.
- Tapani reviews this program to correct deficiencies. Tapani will also review this program and entry operation procedures when measures taken under this permit-required confined space program may not protect employees well enough.
- Tapani keeps employee exposure records according to chapter WAC 296-802, CRF 1910.1020. Employee medical and exposure records. If there is an exposure, notify safety.

PROPER EQUIPMENT

Tapani will provide, at no cost to employees, the equipment that is required for them to perform their duties in confined spaces safely and efficiently.

- Testing and monitoring equipment used to evaluate the confined space.
- Ventilation equipment used to maintain acceptable entry conditions.
- Communication equipment used to facilitate communication when standard verbal and visual communication techniques will not work.
- PPE- Personal protective equipment needed to protect employees from hazards in the space and from hazards generated by work performed in the space.
- Lighting inside the space so employees can see to perform their work and see to exit the space in an emergency.
- Barriers to protect employees from hazards outside of the space, pedestrian, vehicular, etc.
- Ladders to aid in safe access to spaces.
- Rescue and recovery equipment to facilitate safe and effective rescues in event of an emergency.

MAINTENANCE OF EQUIPMENT

The equipment used for confined space entry and rescue is maintained by the company as per the manufacturers recommendations. Employee individual respirators are maintained by the individual employee using supplies provided by Tapani.

RESCUE AND EMERGENCY SERVICES

Before employees enter a permit space, develop and implement procedures to remove entrants in the event of an emergency.

Adequate rescue and emergency services must be available during all permit-required confined space entry operations. Tapani conducts non entry rescue operations, using rescue retrieval harnesses and self-retracting life lines attached to tripods, where feasible, unless it would be impractical to do so or would increase the overall risk to the entrant.

- Select rescue teams or services who can:
    - Respond to a rescue call in a timely manner.
    - Proficiently rescue employees from a permit-required confined space.
    - One member of the rescue team must hold a current certification in first aid.
- Employees assigned to provide permit-required confined space rescue will be provided;
    - Personal protective equipment (PPE) needed for safe entry.
    - Proper rescue retrieval equipment.
    - Training - Practice sessions for confined space rescues, at least every twelve (12) months. Practice rescue training includes removing persons, dummies, or manikins from actual or representative spaces. Rescuers must have practice performing permit space rescues prior to entry, or not more than 12 mos before an entry.

- Unauthorized persons and untrained persons will not be involved in rescue operations.

TREE REMOVAL

PURPOSE

This policy establishes safety practices for logging operations and site clearing. This policy provides safety standards for the logging industry WAC296-54 and construction work in general industry WAC296-155

CHAIN SAWS

- Each hand and portable powered tool, including any tool provided by an employee, must be maintained in serviceable condition and inspected before initial use during each work shift. The inspection must include the following;
    - (a) Handles and guards, to ensure that they are sound and tight-fitting, (properly shaped, free of splinters and sharp edges, and in place);
    - (b) Controls, to ensure proper function;
    - (c) Chain saw chains, to ensure proper adjustment; Chapter 296-54 WAC Safety Standards for Logging Operations
    - (d) Chainsaw mufflers, to ensure that they are operational and in place;
    - (e) Chain brakes and/or nose shielding devices, to ensure that they are in place and function properly;
- Chain saw must be used and maintained according to the following requirements:
    - (a) No chin saw kickback device shall be removed or otherwise disabled.
    - (b) Chain saws must be operated and adjusted in accordance with the manufacturer's instructions.
- Saw pinching and subsequent chainsaw kickback must be prevented by using wedges, levers, guidelines, and saw placement, or by undercutting.

HAZARDS

- When extreme weather or other extreme conditions create hazards additional precautions will be taken to ensure safe operation . If the operation cannot be made safe, the work must be discontinued until safe to resume.
- The following PPE must be worn; hard hats, safety glasses or face shield, chaps, earmuffs, earplugs and cut resistant boots.

SITE CLEARING

The word "clearing" means the removal of trees, stumps, logs, brush, debris and rubbish from the surface of the ground in preparation of a site for construction work of any kind. The removal of trees and logs must be in accordance with the requirements of chapter 296-54 WAC.

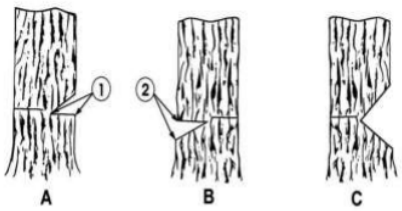
- You must maintain all equipment and tools such as axes, sledges, wedges, saws, springboards, etc.in a safe condition and guard with standard safeguards.
- Fallers must give warning to brushing crews, buckers and other persons in the vicinity where a tree is being felled; taking notice that such persons are not only out of the reach of tree, but also out of danger of possible sidewinders, snags or other trees which may be knocked over by the tree being felled.
- Trees must not be felled toward and within range of a traveled road or operational railroad unless a flagger is used to stop all approaching persons, vehicles, or railroad equipment.
- You must not place clearing crews immediately below other crews working on hillsides where there is a possible danger of skidding or rolling trees, moving earth or rock.
- Pioneer roads on clearing operations must be constructed to safely accommodate all equipment moved over the road.
- In any operation where cutting, felling trees, loading, or a combination of these duties is carried on, there must be a minimum crew of two persons who must work as a team and must be in visual or voice contact with one another. If one worker at these operations is required to be left alone for a period of time, the worker must be contacted by another person at reasonable intervals not to exceed 15 minutes unless such practice can be established to be impractical.

FALLING

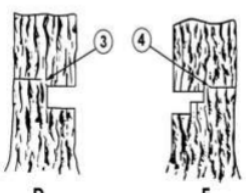
- Where felled trees are likely to roll and endanger workers, cutting must proceed from the bottom toward the top of the slope, and uphill from previously fell timber.
- A cutter must not be placed on a hillside immediately below another cutter or below other logging operations where there is probable danger.
- Cutters must be informed of the movement and location of other employees placed, passing, or approaching the vicinity of trees being fell.
- Before falling trees cutters must:
    - Ensure that all personnel are out of reach of the tree; and
    - Ensure that all personnel are in the clear of logs, fallen trees, snags, or other trees that may be struck by the falling tree.
- Trees must be fallen into the open whenever conditions permit.
- Knocking over trees larger than six inches in diameter in lieu of cutting is prohibited, except as provided in WAC 296-54-53910(9).
- Undercuts large enough to safely guide trees and eliminate the possibility of splitting must be used on all trees over six inches DBH. For example: A tree with no perceptible lean, having an

undercut depth of one-fourth of the diameter of the tree and a face opening equal to one-fifth of the diameter of the tree would meet the requirement.

- A cutter must place an adequate undercut and leave enough holding wood to ensure the tree will fall in the intended direction.
- The two cuts that form the undercut must not cross where they meet, except where a dutchman is required on either side of the cut.
- The undercut must not be made while other workers are in an area into which the tree could fall.
- A back cut must be made in each tree being fell.
    - The back cut must be as level as possible;
    - The back cut must leave enough hinge wood to hold the tree to the stump during most of its fall so that the hinge is able to guide the tree's fall in the intended direction; and
    - The back cut must be above the level of the horizontal face cut to provide an adequate platform to prevent kickback. EXCEPTION: This requirement does not apply to open-faced falling where two angled face cuts are used instead of a horizontal face cut.
    - In tree-pulling operations the back cut may be at or below the undercut hinge point.
- Cutting holding wood instead of using wedges is prohibited. Swing cuts are prohibited except by an experienced person.
- Trees with face cuts and/or back cuts must not be left standing unless all the following conditions are met:
    - The cutter clearly marks the tree;
    - Discontinues work in the hazardous area;
    - Notifies all workers who might be endangered; and
    - Take appropriate measures to ensure that the tree is safely fell before other work is undertaken in the hazardous area.
- Undercuts and back cuts must be made at a height above the highest ground level to enable the cutter to safely begin the cut, control the tree, and have freedom of movement for a quick escape from a falling tree.
- Lodged trees must be clearly marked and identified by a predetermined method and all persons in the area must be instructed not to pass or work within two tree lengths of the trees except to ground them.
- **NOTE: Illustrations of undercuts**.



(A) Conventional undercut. Can be made with parallel saw cut and axe diagonal cut or but cuts with the saw. Generally used on trees of small diameter.
(B) Humboltd undercut. Leaves square-end log. Same as (A), except that waste is put on the stump.



C) Open face undercut. Both cuts are made with the saw. The top and bottom face cuts generally form a 90 degree angle when completed. Works best on small diameter trees.
(D) Two parallel cuts with the saw. The material between the cuts is chopped out with an axe-adz (Pulaski) combination. Used on trees over 30 inches in diameter.
(E) Three parallel cuts with the saw, leaving a step. Same in principle as (C). Used on trees of very large diameters.
Item 1. Undercut depth 2. Undercut height 3. Holding wood 4. Backcut

TRAINING

Tapani will provide training for all tree removal competent persons. Training will include;

- On-site/hands on training
- Demonstration
- Sign-off by Sam Rhoades

COMPETENT PERSON

During tree removal the Tree Removal Competent Person, has the authority for the tree removal portion of the jobsite, not the onsite Super or Foreman.

LASERS - NONIONIZING RADIATION

PURPOSE

The purpose of this program is to lessen the hazards posed by lasers. The primary hazard associated with high-power lasers (Class 3B and Class 4), with their operation is potential eye damage and skin burns. The primary hazard associated with low-power lasers (Class 2 and Class 3R), used in Tapani GPS equipment, is that they are safe when used as intended but require some controls.

CONTROLS

The following are some additional guidelines that must be met to minimize exposure.

- Before operation of the lasers you must first be trained.
- Labels - must be attached to the laser and specify its classification, wavelength, pulse duration (if applicable), and maximum output power.
- Signage – An area hazard warning sign must be posted when a construction laser is in operation. The sign must be in accordance with 21 CFR 1040.10. All signs must be conspicuously displayed.

- PPE – Personal protective equipment will be provided at no cost to the employee and must be worn whenever operational conditions or maintenance of lasers may result in a potentially hazardous exposure.
- Protective eyewear is available for protection against radiation of the wavelength and radiant energy of the laser or laser system.

TRAINING

All employees who may be exposed to laser radiation shall receive laser safety training. The training must ensure that the employees are knowledgeable of the potential hazards and control measures for the laser equipment in use.
Documented Training is required for all employees at New Hire Orientation and annually thereafter.

ASBESTOS

PURPOSE

Airborne asbestos dust and particles, such as those from sprayed asbestos slurry, asbestos-coated ventilating ducts, and certain other applications of asbestos are known to produce irreversible lung damage and bronchogenic carcinoma.

CONTROLS

Tapani employees are not certified to handle Asbestos. If a jobsite contains Asbestos we must follow the following procedures.
Asbestos Removal Regulations - Construction Contractors:

- Contractors must obtain a written asbestos report from the building owner (discussed above) prior to bidding or starting any work.
- Asbestos awareness training is required for employees who do not perform asbestos abatement/removal activities, but may come into contact with asbestos while performing their jobs.
- Asbestos report must be provided to any sub-contractors involved in the project as well.
- Any employees on the job site must be notified about any asbestos materials that they may come into contact with.
- A Certified Asbestos Contractor must handle any asbestos materials that need to be removed or disturbed.

STRETCH AND FLEX PROGRAM

Tapani's stretching program is required by all employees and subs on the jobsite. Participation in the stretching programs should be conducted during the morning safety briefing. The stretch and flex component should not exceed 10 minutes. Employees should exercise judgment to the extent that their physical capabilities allow and they should not perform motions that may aggravate previous injuries or other physical conditions.

PURPOSE

The stretches diagramed on the subsequent page, can prepare the body for everyday work stresses. If performed correctly and regularly, these exercises may reduce the incidences of muscle strain, repetitive stress injuries and sprains.

Stretch, do not bounce, until mild tension is felt. Hold the stretch position 15 to 30 seconds. Then relax. Repeat stretches on the opposite side. Remember, "No quick or bouncy movements"! Be as relaxed as possible.

STRETCH AND FLEX

HOLD FOR 15-30 SECONDS - REPEAT EACH SIDE

NECK

- Tilt head sideways without twisting neck
- Using your hand, reach across head and move ear toward shoulder
- Do not pull head, use weight of arm alone
- Extend other arm

INNER THIGH & GROIN

- Stand with feet pointed straight ahead, a little more than shoulder-width apart
- Bend right knee slightly and move left hip downward toward right knee

LOWER BACK

- Stand upright with your feet shoulder width apart
- Twist and lean forward to touch your toes with opposite hand
- Extend other arm up into air behind you

SHOULDER & UPPER ARM

- Stand and place right hand on left shoulder
- With left hand, pull right elbow across chest toward left shoulder and hold

THIGH (QUADRICEP)

- Lift one leg and grasp with your arm
- Pull up on leg at ankle to stretch thigh
- Maintain balance by extending your opposite arm sideways

CALF

- Get into lunge position bending the back knee
- Lift toes on your front leg and grasp them with your hand

FOREARM & WRIST

- Extend one arm forward keeping the elbow straight
- Bend the wrist upward, and use the other hand to gently pull fingers back toward you
- Release and bend the same wrist downward, gently pulling it down and toward you

CHEST

- Lace fingers together behind your back
- Roll shoulders back while pulling hands a few inches behind your back

TAPANI INC.

MANUAL LIFTING

PURPOSE

This Policy is in place to protect Tapani employees from injuries resulting from manually lifting and moving material.

PROCEDURES

Definition and Risk Factors for Injury

Manual materials handling (MMH) means moving or handling objects, by lifting, lowering, pushing, pulling, carrying, holding, or restraining.

MMH is always hazardous, but the level of hazard depends on the type of material you are handling, what the task is, and what the conditions are at the workplace or work site. Every worker who lifts or does other MMH tasks is at some risk for work related musculoskeletal disorders (WMSDs). The complete elimination of this risk is not realistic because of the nature of MMH, but the risk of injury can be greatly reduced by using safe work practices.

Risk factors for injury associated with MMH include:

- Weight of the load lifted
- The range of the lift
- The location of the load in relation to the body
- The size and shape of the load
- The number and frequency of lifts performed
- Excessive bending and twisting
- The improper selection of personal protective equipment for performing MMH tasks

Preventing injuries-planning ahead

Preventing injuries from MMH must combine many approaches:

Musculoskeletal injuries caused by improper lifting must be investigated and documented. Incorporation of investigation findings into work procedures must be accomplished to prevent future injuries.

Supervision must periodically evaluate work areas and employees' work techniques to assess the potential for and prevention of injuries. New operations should be evaluated to engineer

Training-Field Employees

Training should include general principles of ergonomics, recognition of hazards and injuries, procedures for reporting hazardous conditions, and methods and procedures for early reporting of injuries. Additionally, job specific training should be given on safe lifting and work practices, hazards, and controls.

Job Safety Analysis

Before manual lifting is performed, a hazard assessment must be completed. The assessment must consider size, bulk, and weight of the object(s), if mechanical lifting equipment is required, if two-man lift is required, whether vision is obscured while carrying and the walking surface and path where the object is to be carried.

Supervision must periodically evaluate work areas and employees' work techniques to assess the potential for and prevention of injuries. New operations should be evaluated to engineer

Preventing Injuries while Handling Loads

When it is not possible to eliminate a MMH task, take steps to reduce your risk of injury when handling a load.

Manual lifting equipment such as dollies, hand trucks, lift-assist devices, jacks, carts, hoists are provided for employees.

Manual lifting where possible. Supervisors should enforce the use of lifting equipment.

CRANE

PURPOSE

To establish the requirements, responsibilities, and procedures for the selection of cranes and personnel that are associated with each crane operation. Furthermore, the purpose of this policy is to ensure compliance with the Federal and State Regulations.

DEFINITIONS

- **Articulating Boom Crane**- 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 Director**- A supervisory person that oversees the assembly and disassembly of the crane. This person must meet the criteria for both a competent person and a qualified person, or be a competent person who is assisted by one or more qualified persons.
- **Anti-two-block device**- a device that when activated, disengages all crane functions whose movement can cause two-blocking.
- **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.
- **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.

- **Certified Operator**- A crane operator certified by the National Commission for the Certification of Crane Operators (NCCCO) or other recognized training course certified by the state of the operator.
- **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.
- **Critical Lift**- Any lift that meets one or more of the following: 1) A lift that is equal to or greater than 75 percent of the crane's chart capacity; 2) When the pick requires using two lines, or a multiple crane lift; 3) Hoisting personnel; 4) Hoisting hazardous materials (explosives, highly volatile substances, etc.).
- **Dedicated Spotter (power lines)** - a person who's 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.
- **Derrick**- an apparatus consisting of a mast or equivalent member held at the end of guys or braces, with to without a boom, for use with a hoisting mechanism and operating ropes.
- **Engineered Lift**- Any lift that meets one or more of the following criteria: 1) any lift that is equal to or greater than 90 percent of the crane's chart capacity; 2) The load exceeds 60,000 lbs.; 3) A lift deemed engineered by project management.
- **Fall Zone**- 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.
- **Functional Testing**- the testing of a crane, typically done with a light load or no load, to verify the proper function of a crane's primary function (i.e. hoisting, braking, booming, swinging, etc.) A functional test is contrasted to testing the crane's structural integrity with heavy loads.
- **Jib-** an extension attached to the boom point to provide added boom length for lifting specified tasks.
- **Lifting Device**- Any machine or device used to lift a load, including but not limited to a crane, hoist, chain fall, come-along, jack, jacking system, derrick, monorail hoist, gantry crane, or pulley system.
- **Lift Director**- A supervisory person that oversees the work being performed by a crane and the associated rigging crew. This person must meet the criteria for both a competent person and a qualified person, or be a competent person who is assisted by one or more qualified persons.

- **Mobile Crane**- 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.
- **Operational Aid**- an accessory that provides information to facilitate operation of a crane or that takes control of particular functions without action of the operator when a limiting condition is sensed. Examples include but are not limited to: anti-two blocking device, rated capacity indicator, load indicator and wind speed indicator.
- **Overhead/bridge ad gantry crane**- includes cranes on monorails, cantilever gantry, under hung cranes and similar equipment, irrespective of whether it travels on tracks, wheels, or other means.
- **Rigging**- Any material used to attach loads including but not limited to: chain, wire rope, synthetic slings, and miscellaneous hardware.
- **Site Supervisor**- Controlling organization supervisor that has control over the work site that the crane is being used in and over the work that is being performed at the site.
- **Standard lift**- crane operations that do not exceed 75 percent of the cranes chart capacity.
- **Tower crane**- a type of lifting structure which utilizes a vertical mast or tower to support a working boom (jib) in an elevated position. Tower base may be fixed in one location or ballasted and movable between locations. Loads are suspended from the working boom, which may be a fixed type of have luffing capacity. Working boom can always rotate to swing loads, either by rotating on the top of the tower or by the rotation of the bottom slewing.
- **Two-blocking**- 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.
- **Qualified Person**- A person who by possession of a recognized degree, certificate or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems relating to the subject matter, the work, or the project.
- **Qualified Rigger**- A person that is within the fall zone and hooking, unhooking, guiding a load, or doing the initial connection of a load to a component or structure who understands and demonstrates knowledge of the hazards and controls associated with rigging operations.
- **Qualified Signalman**- A person that is giving any signals to a crane/derrick operator and that has met the qualification requirement in the latter part of this policy.

PERSONAL QUALIFICATIONS AND RESPONSIBILITIES

Site Supervisor

- Ensure crane, operator, and certified rigger/signalman lift director and assembly director meets all regulatory requirements prior to arriving on site (i.e. current annual crane inspection, operator's/rigger/signalman certification, etc.).
- Ensure all documentation associated with the **Pre-Task** Checklist is current and available on site prior to mobilization, crane set up and operation. Located in Key Style
- Ensure that crane operations are coordinated with other job site activities that will be affected by or will affect lift operations.
- Ensure that the area for the crane is adequately prepared, (i.e. access roads, sufficient room for assembly/disassembly, site is level and stable, traffic control plans when necessary, etc.) before crane operations commence.
- Ensure a Lift Director and an Assembly/Disassembly Director are assigned to supervise the assembly/disassembly of the crane. Supervisor may act as Lift Director if he/she meets the requirements of a qualified person.
- Ensure that work involving the assembly and disassembly of a crane is supervised by an assembly/disassembly director.
- Ensure that conditions which may adversely affect crane operations are addressed (i.e. poor soil condition, wind, fog, artificial lighting, etc.).
- Addressing and controlling crane operations near electric power lines.
- Acquiring permits for special lifting operations (i.e. multiple crane lifts, lifting personnel, mobile/articulating cranes operating on barges, etc.).
- Ensure that work performed by the rigging crew is supervised by a qualified rigger.
- Ensure that crane maintenance is performed by a qualified person.
- Stop crane operations if alerted to an unsafe condition affecting those operations.

Lift Director

- Site Supervisor may be the designated Lift Director if he/she meets the requirements of a qualified person.
- See Site Supervisor Responsibilities. In addition to those responsibilities, Lift Director must:
- Must be <u>on site</u> and oversee the lifting operation at all times.
- Ensure that the preparation of the area needed to support crane operations has been completed before crane operations commence.
- Ensure necessary traffic controls are in place to restrict unauthorized access to the crane's work area.
- Ensure that personnel involved in crane operations understand their assigned duties and the associated hazards.
- Address safety concerns raised by the operator or other personnel and decide if it is necessary to overrule those concerns and direct the crane operations to continue. In all cases, the

manufacturer's criteria for safe operation must be adhered to. **When safety issues are overruled, crane operations will not continue without approval from Safety.**

- Ensure precautions are implemented when hazards associated with special lifting operations are present. (i.e. multiple crane lifts, lifting personnel, mobile/articulating cranes operating on barges, etc.).
- Assigning qualified signal person(s) and conveying that information to the operator.
- Allowing crane operation near electric power lines only after the work zone has been evaluated and precautionary measures were met.
- Inform the crane operator of the weight of the loads to be lifted, as well as the lifting, moving and placing locations for these loads.
- Obtain the crane operator's verification that this weight does not exceed the crane's rated capacity.
- Ensure crane load rigging is performed by qualified riggers.
- Ensure the load is properly rigged and balanced before it is lifted more than a few inches.

Assembly/Disassembly Director

- Ensure the assembly/disassembly of the crane complies with the manufacturer's procedures.
- Must meet the criteria of both a qualified and competent person.
- Where assembly/disassembly is being performed by only one person, that person must meet the criteria for both a competent person and a qualified person.
- Inspect and document all crane/derrick components and attachments prior to and post assembly/disassembly completion. This inspection must include a visual inspection to ensure that the components and attachments are of sound physical and functional within manufacturer's recommendation.
- Conduct a pre-assembly/disassembly meeting with crew members involved that covers their tasks, the hazards associated with their tasks, and hazardous positions/locations they need to avoid. Must conduct another meeting covering the same information before a crew member takes on a new/different task, or when adding personnel during operations.
- Address and control specific hazards associated with the assembly/disassembly process including but not limited: site and ground bearing conditions; blocking material; proper location of blocking; verifying assist crane loads; boom and jib pick points; center of gravity; stability upon pin removal; snagging; struck by counterweight; boom hoist brake failure; loss of back stability; Wind speed and weather; weight of components; component and configuration; shipping pins; cantilevered boom sections).
- Protect assembly/disassembly crew members out of operator's view.

Operator

- Possess a current certification by an accredited (a nationally or State recognized accrediting agency) crane/derrick operator testing organization (i.e. NCCCO Certification) and a current medical card.
- Review the lift plan with Lift Director and/or Site Supervisor prior to operation to review the requirements for the crane; identify site conditions that could adversely affect the operation (i.e. power lines, ground conditions, etc.); confirm the net capacity for all crane configurations are correct using load/capacity chart(s); ensure the load and rigging weights have been provided.
- Consider all factors known that might affect the crane capacity and inform the lift director of the need to make appropriate adjustments.
- Understand and apply the information contained in the crane manufacturer's operating manual.
- Know how to travel the crane.
- Conduct a meeting with a designated certified signal person to ensure both parties understand the hand signals that are going to be used during crane operation.
- Perform the daily visual crane inspection.
- Before starting the engine, the operator must verify that all controls are in the proper starting position and that all personnel are in the clear.
- Follow applicable Overhead Hazards Procedure.
- Promptly report any deficiencies from the crane inspection to the appropriate person.
- Operator obtains the right to "Stop Work Authority" and has the ability to stop any lift and refuse a load if there are any safety concerns.
- Test the crane function controls prior to using the crane and operate the crane in a smooth and controlled manner.
- Know and understand the procedures specified by the manufacturer for assembly, disassembly, setting up, and reeving the crane.
- Observe each outrigger during extension, setting, and retraction.
- Does not engage in any practice that will divert their attention while actually operating the crane controls.
- Operate cranes functions, under normal operating conditions, in a smooth and controlled manner.
- Must be in good physical and mental health.

GENERAL REQUIREMENTS

This procedure applies to power-operated equipment, when used in construction that can hoist, lower and horizontally move a suspended load. Such equipment includes, but is not limited to:

- Articulating cranes (such as knuckle-boom cranes); Mobile cranes (such as wheel-mounted, rough-terrain, all-terrain, commercial truck-mounted, and boom truck cranes); Multi-purpose machines when configured to hoist and lower (by means of a winch or hook) and horizontally

move a suspended load; Mechanic trucks with a hoisting device; Tower cranes (such as a fixed jib, i.e., "hammerhead boom"), luffing boom and self-erecting); Overhead and gantry cranes; Derricks; and Variations of such equipment.

- All cranes and derricks must be certified annually by an accredited certifier. A copy of the annual inspection must be displayed in the cab of the crane and a copy obtained by the Lift Director prior to crane arriving on site.
- The Operator must not engage in any practice or activity that diverts his/her attention while actually engaged in operating the crane/derrick.
- The Operator must not leave the controls while the load is suspended.
- If there is a warning (tag-out or maintenance/do not operate) sign on the crane/derricks starting controls or any other switch or control, the operator must not activate or start the crane/derrick until the sign has been removed by a person authorized to remove it, or until approval from the Site Supervisor has been granted.
- No employee shall travel under a suspended load.
- When the operator has a stationary suspended load, no employee is allowed to be within the fall zone except those engaged in hooking, unhooking or guiding the load or are engaged in the initial attachment of the load. Only employees needed to receive a load are permitted to be within the fall zone when a load is being landed.
- Site Supervisor will take steps to prevent employees from entering swing radius by training employees assigned to work on or near the crane to recognize struck-by and pinch/crush hazard areas. Employees will also be trained how to erect and maintain control lines, warning lines or other distinguishable boundaries.
- No modifications or additions which may affect the capacity of the crane shall be performed by Apollo without the manufacturer’s written approval.
- On wheel-mounted cranes, loads must not be lifted over the front area, except as permitted by the crane manufacturer.
- Crane supports (i.e. timbers, cribbing, etc.) for individual stabilizer/outrigger pads must be level, extended and set per manufacturer’s specifications, strong enough to prevent crushing and of such width and length as to completely support the pad.
- Before erecting tower cranes, discuss with the Safety Department.
- The procedures applicable to the operation of the equipment, including rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions, and operator's manual, must be readily available in the cab at all times for use by the operator.

ASSEMBLY AND DISASSEMBLY

- Crane assembly and disassembly will be in accordance with the manufacturer’s specifications and procedures.

- Assembly/Disassembly director (A/D Director) will supervise all Assembly/ Disassembly (A/D) activities and identify specific hazards including but not limited to:
- Site conditions; overhead hazards; Blocking material (the size, amount, condition and method of stacking the blocking must be sufficient to sustain the loads and maintain stability); Proper location of blocking; Verifying assist crane loads; Boom and jib pick points; Center of gravity; Identify and barricade off areas where people have the potential to be struck by counterweights; and wind speed and weather; Stability upon pin removal; Snagging; Boom hoist brake failure; Loss of backward stability; weight of components; Components and configuration; Shipping pins.
- A pre-task meeting will be conducted with all personnel involved prior to every assembly/disassembly operation that includes their tasks, hazards associated and controls for those hazards. Before a new crew member takes on a different task or when adding new personnel during the operations a new PTP meeting must be conducted.
- Crane will be set up on firm and stable ground and level within 1 degree.
- When pins (or similar devices) are being removed, employees must not be under the boom, jib, or other components.
- When the load to be handled and the operating radius require the use of outriggers or stabilizers they must be fully extended and set to remove the equipment weight from the wheels.
- During all A/D operations, a qualified person will take actions to prevent unintended dangerous movement and prevent collapse of any part of the equipment; Provide adequate support and stability of all parts of the equipment; and position employees involved in the A/D operation so that their exposure to unintended movement or collapse of a part or all of the equipment is minimized.

INSPECTION AND MAINTENANCE

Inspection

- Annual - Crane must be inspected every 12 months. Copy of certificate to be kept in the cab of crane and on file in the office.
- Initial/prior to each shift- Operator shall visually inspect all parts of the crane to assure that it is configured in accordance with manufacturer equipment criteria upon the completion of assembly and prior to each use.
- Inspection includes a functional test/test pick.
- Once a month the crane will be performed by a competent person and records of such inspections will be kept for 3 months.
- NOTE: Cranes that have been idle for three months or more must be inspected by a qualified person prior to use unless the three months overlap the previous 12-month period. In such a case, an annual inspection from an accredited agency will be conducted.

- If any deficiency is identified, an immediate determination must be made by a qualified person as to whether the deficiency constitutes a safety hazard. If a deficiency with a safety device or operational aids is identified, the crane will be tagged out of service until deficiency is corrected.
- Cranes that have had modifications, additions, and significant repairs must be inspected by an accredited crane certifier after such modifications/additions/repairs have been completed.

Maintenance

A preventative maintenance program must be established based on the recommendation of the manufacturer.

Operation

- When planning a lift, Site Supervisor and Lift Director shall determine what category it will falls into:
- Standard Lift
- Critical Lift
- Engineered Lift
- Prior to starting lift the operator and rigger shall check that:
- The hoist rope is not kinked;
- Multiple-part lines must not be twisted around each other;
- The hook must be brought over the load in such a matter as to minimize swinging;
- That all slack in the rigging is removed; and
- Load is not caught or attached to anything
- The operator must verify that the load is within the rated capacity of the crane.
- The operator must not leave the controls while the load is suspended.
- Tag lines must be used when rotation or swinging of the load is hazardous or if the load needs guidance.

Safety Devices

- The following are required on all cranes (except tower cranes) and must be in good working order:
- Crane level indicator
- Boom stops (except for derricks and hydraulic booms)
- Jib stops (if a jib is attached), except for derricks
- Equipment with foot pedal brakes must have locks
- Hydraulic outrigger jacks and hydraulic stabilizer jacks must have an integral holding device/check valve
- Equipment on rails must have rail clamps and rail stops, except for portal cranes

- Horn
- Safety Devices must not be used as a substitute for the exercise of professional judgment by the operator.
- If a safety device stops working properly during operations, the operator must safely stop operations. If any of the devices listed are not in proper working order, the equipment must be taken out of service and operations must not resume until the device is again working properly.

Operational Aids

- The following are required on all cranes (except tower cranes) and must be in good working order:
- Boom hoist limiting device (except for derricks with base mounted drum)
- Luffing jib limiting device
- Anti-two-blocking device
- Boom angle or radius indicator
- Jib angle indicator (if the crane has a luffing jib)
- Boom length indicator (if the crane has a telescopic boom)
- Load weighing and similar devices
- Outrigger/stabilizer position sensor/monitor (if the crane has outriggers or stabilizers)
- Hoist drum rotation indicator (if the crane has a hoist drum and is not visible from the operator's station)
- Operations must not begin unless the listed aids are in proper working order, except where more protective alternate measures can be implemented while it is being repaired.
- If operational aids are inoperative or malfunctioning, the crane and/or device manufacturer's recommendations for continued operations or shutdown of the crane must be followed until problems are corrected. If a replacement part is no longer available, the use of a substitute device that performs the same type of function is permitted and is not considered a modification. Recalibration or repair of the operational aid must be accomplished as soon as possible.

Testing

- The operator shall conduct an operational test in accordance with the manufacturer's recommendations prior to the initial pick.
- Proof load tests will be completed on all hoist lines to at least 100%, but not to exceed 110% as configured.
- Proof testing will be selected in a safe area where all unauthorized personnel, traffic and equipment must be cleared. Test area will be roped off.
- Rigging gear must be inspected prior to proof test.

- Personnel must remain clear of suspended loads and areas where they could be struck in the event of boom failure.
- Proof testing must not exceed manufacturer's specifications.

Communication

- Standard communications such as hand, voice, and audible will be used in all crane operations and will be discussed and understood by both the operator and the signal person prior to crane operation. They do not need to meet again to discuss voice signals unless another employee is added or substituted, there is confusion about the voice signals, or a voice signal is to be changed.
- Each voice signal must contain the following 3 elements, given in the following order: function (such as hoist, boom, etc.) and direction; distance and/or speed; function stop.
- Where a signal person(s) is in communication with more than one crane/derrick, a system for identifying the crane/derrick for which each signal is intended must be used.
- Radio or telephone communication shall be used when the distance between the operator and the signal person is more than 100 feet or if they cannot see each other. The operator's reception of signals must be made by a hands-free system.
- Only one person gives signals to the operator at a time unless an emergency stop signal is given (which may be given by anyone and must be obeyed by the operator).

Critical Lifts

- Critical lift plans shall be developed by a qualified person and shall include the operator, lift supervisor, site supervisor, and rigger/signalman. Plan will be signed by all involved personnel prior to lift.
- Plan will include:
- Specific make and model of the crane
- Exact size and weight of the load to be lifted and all crane and rigging components that add to the weight
- Specify the lift geometry and procedures including crane position, height of the lift, load radius, boom length/angle
- Shall designate the crane operator, lift supervisor, certified rigger/signalman and include their credentials
- Describe ground conditions and environmental conditions under which the lift will be stopped
- Specify coordination and communication that will be used
- All Critical Lifts will be approved by the Lift Director.

Engineered Lift

No engineered lifts shall be performed without the authorization of the Site Supervisor.

Hoisting Personnel

The use of cranes and derricks to hoist employees is prohibited.

ENVIRONMENTAL CONDITIONS

Ground Conditions

- Lift Director is responsible for determining if ground conditions are adequate for supporting crane operations.
- Site Supervisor will identify the location of hazards beneath the equipment set-up area (such as voids, tanks, utilities) based on site drawings, as-built drawings, and/or soil analyses and communicate them with Lift Director and Operator prior to crane assembly.
- Cribbing 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.

Overhead Hazards

If the crane will be operating near an overhead power line, do both of the following before the work begins:

- Determine the power line’s voltage. (Ask the utility owner or utility operator for the information. Allow the utility two working days to give you the information.)
- Use Table A to determine the crane’s minimum approach distance to the power line.
- If any part of the crane, including rigging and lifting accessories, could get closer to the power line than the minimum approach distance in Table A — ask the utility to de-energize and ground the power line. Do this before you begin work.
- If the utility can’t ground and deenergize the power line, or if you’re unable to confirm from the utility that the power line is de-energized, you must identify the work zone by doing “A” or “B”.
- Mark the boundaries of the work zone using items such as flags, a range-limit device, or a range-control warning device and prohibit the crane operator from operating beyond those boundaries. Once you have established the boundary (based on Table A) and prohibited crane operations from going beyond that boundary, you do not need to do anything else.
- Define the work zone as an area 360 degrees around the crane, up to the crane’s maximum working radius for the actual crane work. If the crane can get within 20 feet of the power line, do one of the following:
- Ground and de-energize the power line
- Maintain 20 feet and ensure that no part of the crane, load line, or load (including rigging and lifting accessories), gets closer than 20 feet by following the requirements for preventing encroachment or electrocution below

- Maintain the required minimum approach distance in Table A and ensure that no part of the crane, load line, or load (including rigging and lifting accessories), gets closer than the required Table A distance by following the requirements for preventing encroachment or electrocution below

REQUIREMENTS FOR PREVENTING ENCROACHMENT OR ELECTROCUTION

- Conduct a planning meeting. Meet with the operator and other workers who will be in the area to review the location of the power line and the steps necessary to prevent encroachment or electrocution.
- Use nonconductive taglines. If you use tag lines, they must be nonconductive.
- Erect an elevated warning line, barricade, or line of signs, in view of the operator. The warning line must have flags or similar high-visibility markings at the minimum approach distance under Table A. If the operator can't see the warning line, you must use a dedicated spotter who is in continuous contact with the operator.
- Do at least one of the following:
- Use a proximity alarm that warns the operator when to stop movement.
- Use a dedicated spotter who is in continuous contact with the operator.
- The spotter must:
    - Use a clearly visible visual aid to identify the minimum clearance distance
    - Be positioned to gauge the distance accurately
    - Ensure that the operator maintains the distance.
    - Examples of visual aids are lines painted on the ground, stanchions, and line-of-sight landmarks.
- Use a device, such as a range-control warning device, that automatically warns the operator when to stop movement.
- Use a device that automatically limits range of movement.
- Use an insulating link or device, installed between the end of the load line (or below) and the load.
- This diagram illustrates a simple solution related to power-line safety under WAC 296-155-53408
- The job is a bridge replacement on a two-lane road.
- The power lines were initially seven feet from the proposed work.
- The construction company contacted the power company and arranged to move the 12.5kV line (north) six feet making the minimum clearance 13 feet.
- At the same time, the power company agreed to install cross arms and hang a series of flags parallel to the power line.
- The flags hang from the utility pole at eye level to the operator establishing the crane's work zone.

*** Refer to Power Line Encroachment From.

WIND

Crane operations will not be conducted if wind velocities exceed manufacturer's recommendations. At wind speeds of 20 mph, crane operations shall be ceased and the lift director will evaluate the conditions and determine if the lift shall proceed.

NIGHT OPERATIONS

Provide lighting adequate to illuminate the working area without interfering with the operator's vision.

RIGGING AND SIGNALING

Refer to Tapani APP, Rigging, Signaling and Material Handling

TRAINING

- Employees involved in all crane operations shall be trained in:
- Overhead Power lines
- Crush/pinch points
- Lock-out-tag-out
- Qualifications for the rigger, signalman and operator are required and will be sufficient to satisfy the training requirements.
- Refresher training will be provided in relevant topics based on the conduct of the employee and/or an evaluation of their knowledge and at a minimum annually.

RECORD KEEPING

Copies of the all crane inspections will be kept in Key Style for a minimum of 3 years

COMPRESSED AIR

PURPOSE

The purpose of this policy is to provide the minimum requirements for the use of compressors, compressed air receivers, and other equipment that utilize compressed air for performing operations such as cleaning, drilling, hoisting, and chipping.

SCOPE

This procedure applies to Tapani employees and on-site contractors who utilize compressors, compressed air receivers, and other equipment that use compressed air for performing operations

such as cleaning, drilling, hoisting, and chipping while working on behalf of USPL. See the Respiratory Protection policy for any questions regarding compressed breathing air.
Additional sections of this safety manual contain related policies and should be consulted for specific requirements and guidance: Personal Protective Equipment

GENERAL REQUIREMENTS

Compressed air shall not be used for cleaning purposes except where reduced to less than 30 psi and then only with effective chip guarding and personal protective equipment.
The phrase “reduce to less than 30 psi” means that the downstream pressure of the air at the nozzle (nozzle pressure) or opening of a gun, pipe, cleaning lance, etc.,BP U.S. Pipelines and Logistics (USPL) Compressed Air

Air receivers need to be equipped with a readily visible pressure gauge that is equipped with spring-loaded safety valves. The total relieving capacity of these safety valves should prevent the receiver from exceeding the maximum allowable working pressure by more than 10 percent.

Safety valves need to be tested frequently to ensure they are in proper operating conditions and that they cannot be made inoperable by any means.
Regular equipment inspection should be performed according to the manufacturer's recommended methods and frequency.

The requirements for dynamic flow are such that in the case when dead ending occurs, a static pressure at the main orifice shall not exceed 30 psi.
“Effective chip guarding” means any method or equipment which will prevent a chip or particle of whatever size from being blown into the eyes or unbroken skin of the operator or other workers. Effective chip guarding may be separate from the air nozzle as in the case where screens or barriers are used. The use of protective cone air nozzles are acceptable in general for protection of the operator but barriers, baffles or screens may be required to protect other workers if they are exposed to flying chips or particles.

Compressed air shall not be used to clean workers or their clothing.
Installation of all new air receivers shall be constructed in accordance with the 1968 edition of the A.S.M.E. Boiler and Pressure Vessel Code Section VIII.
Air receivers shall be installed such that all drains, handholes, and manholes therein are easily accessible. Under no circumstances shall an air receiver be buried underground or located in an inaccessible place.

A drain pipe and valve shall be installed at the lowest point of every air receiver to provide for the removal of accumulated oil and water. Adequate automatic traps may be installed in addition to drain valves. The drain valve on the air receiver shall be opened and the receiver completely drained frequently and at such intervals as to prevent the accumulation of excessive amounts of liquid in the receiver.

Every air receiver shall be equipped with an indicating pressure gauge (so located as to be readily visible) and with one or more spring-loaded safety relief valves. The total relieving capacity of such safety relief valves shall be such as to prevent pressure in the receiver from exceeding the maximum allowable working pressure of the receiver by more than 10 percent.

Safety appliances, such as safety relief valves, indicating devices and controlling devices, shall be constructed, located, and installed so that they cannot be readily rendered inoperative by any means, including the elements.

CYBER SECURITY

The Company recognizes that use of the internet has many benefits for the Company and its employees. The internet and email make communication more efficient and effective. Therefore, employees are encouraged to use the internet appropriately if required by their job. Use of the internet for non-work purposes should be held to a reasonable limit; reasonableness will be determined by management. Non-work internet usage may be prohibited. If employees have questions about what constitutes reasonable usage they should not hesitate to contact their manager or supervisor.

The following guidelines have been established for using the internet and email in an appropriate, ethical, and professional manner:

- Employees are prohibited from placing any passwords or restrictors on any document, computer, or computer software without the prior permission of their supervisor or manager. Any password or restrictor must be revealed to and maintained by a second authorized source. Removing, changing, deleting, or erasing any Company information without the appropriate authorization is strictly prohibited.
- Company internet and email access may not be used for transmitting, retrieving, or storing of any communications of a defamatory, discriminatory, or harassing nature, or materials that are obscene or X-rated. No messages with derogatory or inflammatory remarks about an individual’s race, age, disability, religion, national origin, physical attributes, sexual preference, or any other federal or state protected status shall be transmitted. Harassment of any kind is prohibited.

- Disparaging, abusive, profane, or offensive language (materials that would adversely or negatively reflect upon the Company or be contrary to the Company best interests) and any illegal activities including piracy, cracking, extortion, blackmail, copyright infringement, and unauthorized access to any computers on the internet or email are forbidden.
- Copyrighted materials belonging to entities other than the Company may not be transmitted by employees on the Company's network. All employees obtaining access to another company's or individual's materials must respect all copyrights and may not copy, retrieve, modify, or forward copyrighted materials except with permission or as a single copy to reference only. If employees find something on the internet that may be interesting to others, they should not copy or download it. Instead, they can give the URL (uniform resource locator or "address") to the person who may be interested in the information and have that person look at it on their own.
- Employees should not use the system in a way that disrupts its use by others. This includes but is not limited to streaming of any video, unless work-related, streaming of music unless approved by management, sending or receiving many large files, and sending email messages to an excessive number of users or sending emails that are not work-related in content.
- The internet is full of useful programs that can be downloaded, but some of them may contain computer viruses or spyware that can extensively damage our computers and compromise the security of Company information. Be sure to virus-check downloaded files immediately. Also, many browser add-on packages (called "plug-ins") are available to download. There is no guarantee that such will be compatible with other programs on the network and such may cause problems; therefore, please refrain from downloading such plug-ins.
- Each employee is responsible for the content of all text, audio, or images that they place on Company drives or send over the Company's internet and email system. No email or other electronic communications may be sent which hides the identity of the sender or represents the sender as someone else. Also, be aware that the Company's name is attached to all messages so use discretion in formulating messages.
- **Email is not guaranteed to be private or confidential. All electronic communications are Company property. Therefore, the Company reserves the right to examine, monitor and regulate email messages, directories and files, as well as internet usage. Also, the internet is not secure so don't assume that others cannot read or possibly alter messages.**
- Internal and external email messages are considered business records and may be subject to discovery in the event of litigation. Be aware of this possibility when sending email within and outside the Company.

All Company-supplied technology including computer systems and Company-related work records belong to the Company and not the employee. The Company routinely monitors usage patterns for its

email and internet communications. Although encouraged to explore the resources available on the internet, employees should use discretion in the sites that are accessed.
Since all the computer systems and software, as well as the email and internet connection are Company-owned, all Company policies are in effect at all times. Any employee who abuses the privilege of Company-facilitated access to email or the internet may be denied access to the internet.

DEVICE SECURITY

To ensure the security of all company-issued devices and information, Tapani employees are required to:

- Keep all company-issued devices password-protected (minimum of 8 characters). This includes tablets, computers, and mobile devices.
- Secure all relevant devices before leaving their desk.c
- Obtain authorization from the Office Manager and/or Inventory Manager before removing devices from company premises.
- Refrain from sharing private passwords with coworkers, personal acquaintances, senior personnel, and/or shareholders.
- Regularly update devices with the latest security software.
- Cyber security must be included in employee training when an employee is hired. By including this topic in the initial or onboarding training,
- Employees must be re-trained on cyber security topics. Re-training helps keep employees up-to-date on your company's policy and makes sure they keep it in mind while working.
- Cyber security training must cover common ways that cyber security attacks occur and how to defend against them. Some examples of these include: social engineering, phishing, malware attacks, and impersonation.
- Employees are to report a cyber security issue to help@tapani.com. IT will respond with how that issue will be handled. Reporting is how Tapani will know when an issue has happened.
- Every employee at your organization must have a unique identifier, such as a username, when accessing any organizational systems. An example of this is each employee having their own username and password to log in to a company network. A unique identifier helps show who is using your network and what they have done.

USE OF PERSONAL ELECTRONICS

Use of personal electronic devices for work purposes, including but not limited to smartphones, tablets, laptops, and computers is allowed only when management has provided written authorization and may be limited to certain employees or departments.
During working hours and while conducting Company business, employees must exercise the same discretion in using their personal devices as is expected for the use of Company devices. All Company policies in effect pertaining to harassment, discrimination, retaliation, proprietary

information, trade secrets, confidential information, and ethics apply to the use of personal devices for and during work-related activities.

Non-exempt hourly employees will generally not be authorized to use their personal devices for work purposes. In the event that an hourly employee receives management authorization to use personal devices, the employee may not use their device for work purposes outside of their normal work schedule without authorization in advance from management. This includes but is not limited to reading, sending and/or responding to work related emails, text messages, or phone calls (answering and initiating). Hourly employees will be paid in accordance with federal and state law for all hours worked.

Employees may not use their personal devices for work purposes during periods of unpaid leave without prior management authorization. The Company reserves the right to deactivate the Company's information and access on the employee's personal device during periods of unpaid leave.

To ensure the security of proprietary Company information and technology, employees who have been authorized by management to use personal devices are required to comply with Company requirements regarding the installation of antivirus software, additional encryption software, and "remote-wipe" software. All Company-related information and applications must be stored in a way that is password-protected and secure. Cloud-based applications or backup software programs may not be used unless authorized specifically by management as these programs may allow Company-related information to be transferred to unsecure parties. Additionally, employees may not use unsecure internet connections.

When personal devices are being used for work purposes, employees should not expect any privacy except that which is governed by law. The Company has the right, at any time, to monitor any communications that utilize the Company's networks in any way, including data, voicemail, telephone logs, internet use, network traffic, etc. to determine proper use. The Company reserves the right to review, retain, monitor, or release personal and/or Company-related data on personal devices to government agencies or third parties during an investigation or litigation. The Company may review the activity and analyze usage patterns and may choose to publicize the data to assure that the Company's resources in these areas are being utilized according to this policy. Finally, no employee shall knowingly disable, tamper with, alter, or destroy any network software or system.

Employees are expected to reasonably protect personal devices used for work-related purposes from loss, damage, and theft. If a personal device is lost or stolen the employee must notify the Company immediately. The Company may choose to remotely wipe Company-related data. The Company is not responsible for the loss or damage of other data and applications on the device when it is remotely wiped. The Company bears no responsibility for replacing or repairing personal devices that are damaged, even if that damage occurs on Company property and/or during working hours.

The employee may be asked to produce any personal device used for work purposes at any time for inspection or review of compliance with policy. When an employee resigns or is terminated, the employee must cooperate in allowing access to the personal device so that the Company can remove all Company data.

SOCIAL MEDIA

The Company understands that social media can be a fun and rewarding way to share an employee's life and opinions with family, friends, and co-workers around the world. However, use of social media also presents certain risks and carries with it certain responsibilities. To assist employees in making responsible decisions about their use of social media, we have established a social medical policy with guidelines for appropriate use of social media. This policy applies to all employees of the Company. The complete Social Media policy is kept in the employee ARCORO / BirdDogHR portal.

COMPANY PHONE USAGE AND PERSONAL CELL PHONES

Company telephones are to be restricted to calls for business purposes. All employees are required to be professional and conscientious at all times when using Company phones.
The use of personal cell phones or other devices during working hours should be held to a reasonable limit. Reasonableness of cell phone usage will be determined by management.

DRIVING SAFETY

As part of your job description, Tapani Inc allows assigned Foreman, Superintendents, and Field Mechanics to drive company owned vehicles (crew trucks, maintenance trucks) to and from your home to project sites each day to perform the essential functions and duties of your job. Certain requirements and responsibilities, as outlined below, must be met and consistently adhered to on a regular basis by the employee who is assigned a company owned vehicle. These requirements are listed within the guidelines of this policy. We ask you to take pride and care in the vehicle that the company has assigned you to drive. If you are unable to meet any of the criteria of the responsibilities and requirements listed in these policy guidelines below, it is of Tapani's option and discretion to require you to coordinate to leave the company owned vehicle parked at the shop each night and on the weekends or not have a company owned vehicle issued to you to drive.

HIRING CRITERIA AND SCREENING DRIVERS:

Tapani will check Motor Vehicle Records (MVRs) on all employees that drive company vehicles and drivers who routinely drive their own vehicles upon hiring and annually thereafter. Employees are responsible for possessing a valid driver's license for the type of motor vehicle they operate.

An employee with two minor violations in a three year period will be considered “Borderline”.Tapani will notify borderline drivers, letting them know of any and all violations. Any employee with three minor violations in the last three years, one major violation in the last three years or a DUI within the past five years is automatically considered “No Drive”. Borderline drivers will be monitored more frequently and No Drive employees will have their driving privileges revoked. No Drive employees, due to three minor violations, must complete a certified driver training program e.g. Evergreen Safety Council’s “EverSafe Driving Program”, at their own expense in order to regain their driving privileges.

THE FOLLOWING ARE CONSIDERED MINOR AND MAJOR VIOLATIONS

Minor Violations

- Speeding, U-Turn, etc., and any violation other than major including:
- Motor vehicle equipment, load or size requirement
- Improper/failure to display license plates
- Failure to sign or display registration
- Failure to have driver’s license in possession
- Careless Driving
- Use of handheld device while driving

Major Violations

- Driving under influence (DUI)
- Failure to stop/report an accident
- Reckless driving/speed contest
- Driving while impaired
- Making a false accident report
- Homicide, manslaughter, or assault arising from the use of a vehicle
- Driving while license is suspended/revoked
- Attempting to elude a police officer
- Deferred prosecution (will only show up on a five-year abstract report in Washington)

POLICY GUIDELINES

- All employees are expected to wear seat belts at all times while in a moving vehicle being used for Company business, whether they are the driver or a passenger.
- Use of handheld devices, whether personal or Company-owned, while behind the wheel of a moving vehicle is strictly prohibited. This includes the use for making or receiving phone calls, sending or receiving text messages or emails, and downloading information from the web. If an employee needs to engage in any of these activities while driving, they must pull over to a safe location and stop the vehicle prior to using any device.

- Employees are required to turn off cell phones or put them on vibrate before starting their car. Employees may consider changing their voicemail message to indicate that they are unavailable to talk, as they are driving. Employees are permitted and encouraged to communicate to clients, associates, and business partners of the policy as an explanation as to why calls may not be returned immediately.
- Although use of cell phones under any circumstances is prohibited while driving, the use of hands-free technology may be warranted in certain circumstances only.
- The use of other handheld electronic devices, such as iPads, iPods, laptops, electronic readers, etc. is strictly prohibited while driving a vehicle on Company business.
- Engaging in other distracting activities including, but not limited to, eating, putting on makeup, reading, or changing radio stations or music is also strongly discouraged while driving, even when in slow-moving traffic.
- The use of alcohol, drugs, or other substances including certain over-the-counter cold or allergy medications that in any way impair driving ability is prohibited.
- All employees must follow all driving laws and safety rules, such as adherence to posted speed limits and directional signs, use of turn signals, and avoidance of confrontational or offensive behavior while driving.
- All passengers in company vehicles must be approved by management in advance of travel.
- Employees will never allow anyone to ride in any part of the vehicle not specifically intended for passenger use and/or any seat that does not include a working seat belt.
- Employees must promptly report any accidents to local law enforcement as well as to the Company in accordance with established procedures.
- Employees are also required to report any moving or parking violations received while driving on Company business and/or in Company vehicles.
- Insurance must be maintained current as a term and condition of continuing employment in positions that require driving.
- You may not loan our company vehicles to others. Only the assigned person to each vehicle is allowed to operate said vehicle.
- You are responsible for the security of your vehicle during off work and non-business hours at your residence. This includes, locking and securing all applicable tool boxes, all visible small tools, i.e.; jumping jacks, pumps, generators, plate compactors, GPS and electronic equipment.
- To uphold the standard, accountability and cleanliness of Tapani Inc, you are responsible for the cleanliness and overall appearance of your vehicle.
- You are required to return your company vehicle to the shop during times of vacation or at Tapani's discretion.
- You are responsible for scheduling services including oil changes and routine maintenance every 4000 miles, and any repairs of your vehicle including tires (with shop approval). You

must give a three day notice and expect 1-2 hour minimum for routine maintenance. You must include a list of any items needing service or repair other than routine maintenance.

- Loaner vehicles may not always be available; therefore we may have to schedule weekend service. You are responsible to schedule a Saturday or weekend service appointment and have the vehicle left at the shop on Friday evening prior or by 8:00 a.m. on Saturday of your scheduled service. You must leave a list of items that need service or repair other than routine maintenance.
- Employees are not to drive a personal vehicle for Company business unless authorized to do so. If the job requires an employee to operate their personal vehicle, the employee shall be required to submit proof of a current and valid state driver's license and valid insurance.
- Any cargo on or in motor vehicles must be adequately stored and secured to prevent unintentional movement of the equipment which could cause spillage, damage to the vehicle, or injury to the operator.
- Pre-use inspections should be performed before operating a vehicle. This consists of a walk-around the vehicle to check for any defects to the vehicle and ensure there are no barriers blocking the path. Company-owned vehicles shall have a maintenance program in place meeting the minimum manufacturer's recommendation.

AUTOMOBILE ACCIDENT EMPLOYEE RESPONSIBILITIES

If an employee is involved in an automobile accident while on Company business (in a personal or Company vehicle) they must report the accident to their supervisor or manager immediately. Employees must fill out a Tapani Inc. incident investigation report. Employees should request and obtain a police report and police investigation at the scene of the accident. Employees should not admit liability or guilt and should not apologize or say they are sorry under any circumstances, even if they believe they are at fault.

AUTOMOBILE ACCIDENT SUPERVISORS AND MANAGERS RESPONSIBILITIES

Management is responsible for obtaining the accident data, understanding and complying with this policy and reporting to Risk Management. It is important for management to determine the extent of the accident, especially if it involves injury or death to the driver, passengers, or other parties.

WORK ZONE - FLAGGING SAFETY

POLICY STATEMENT

Tapani is committed to providing a safe and secure work environment for all employees, contractors, and visitors involved in construction activities that require the use of flagging procedures. This policy

aims to establish guidelines and procedures to ensure the safety of workers and the public in and around work zones where flagging is employed.

SCOPE

This policy applies to all construction activities conducted by Tapani that involve work zone flagging. It includes road construction, maintenance, utility work, and any other activities that require the control of traffic through flagging.

RESPONSIBILITIES

- **TCS Supervisor**
    - TCS is responsible for implementing and maintaining effective work zone flagging safety procedures.
    - Allocate resources to ensure the proper implementation of this policy.

- **TCS**
    - Ensure that all workers under their supervision are adequately trained in flagging procedures and adhere to safety protocols.
    - Monitor and enforce the use of personal protective equipment (PPE) and other safety measures.

- **Flaggers**
    - Flaggers are responsible for controlling traffic in work zones safely.
    - Follow established flagging procedures and guidelines.
    - Wear the designated PPE, including high-visibility clothing and appropriate signage.

- **Employees**
    - All workers are required to follow safety guidelines and procedures related to work zone flagging.
    - Participate in training programs to enhance awareness and understanding of work zone flagging hazards.

CONTROL MEASURES

- **Training**
    - Provide comprehensive training for all flaggers on proper flagging techniques, communication, and the use of flagging equipment.
    - Ensure that flaggers are aware of the specific hazards associated with work zone flagging.

- **Personal Protective Equipment (PPE)**
    - Provide appropriate PPE, including high-visibility vests, hard hats, and gloves, to all flaggers.
    - Train workers on the proper use, maintenance, and disposal of PPE.

- **Traffic Control Devices**
    - Utilize proper traffic control devices, including warning signs, cones, and barriers, to guide motorists safely through work zones.
    - Regularly inspect and maintain traffic control devices to ensure their effectiveness.

- **Communication**
    - Establish clear communication channels among flaggers and with other workers in the work zone.
    - Use standardized signals and communication methods to coordinate traffic flow and ensure the safety of workers.

- **Emergency Response**
    - Develop and communicate emergency response procedures specific to work zone flagging.
    - Conduct drills to ensure all flaggers are familiar with emergency response protocols in case of incidents or accidents.

COMPLIANCE

All employees, contractors, and visitors are required to comply with this policy. Non-compliance may result in disciplinary action, up to and including termination of employment or contract.

REVIEW AND REVISION

This policy will be reviewed periodically to ensure its effectiveness and relevance. Any necessary revisions will be made to reflect changes in technology, regulations, or the work environment.

MECHANIZED EQUIPMENT MARINE POLICY

PURPOSE

The purpose of this policy is to establish safety and health standards to protect workers from hazards associated with the use of construction motor vehicles, mechanized equipment, and marine operations. This policy complies with OSHA regulations and applicable state-level LNI requirements.

SCOPE

This policy applies to all employees, contractors, and subcontractors involved in construction motor vehicle operations, mechanized equipment use, and marine operations at Tapani.

GENERAL SAFETY STANDARDS

- **Training and Certification**
    - All operators of construction motor vehicles and mechanized equipment must be properly trained.
- **Pre-Operation Inspections**
    - Conduct thorough inspections of equipment before each use to ensure it is in safe working condition.
    - Report and tag out defective equipment immediately.
- **Use of Personal Protective Equipment (PPE)**
    - Enforce the use of appropriate PPE such as hard hats, safety glasses, gloves, and life jackets as required.
    - You must meet the following requirements for personal flotation devices:
        - You must provide and direct the wearing of personal flotation devices for those employees, such as line handlers, who are engaged in work in which they may be pulled into the water:
            - When such employees are working in isolation: or
            - Where physical limitations of available working space creates a hazard of falling into the water; or
            - Where the work area is obstructed by cargo or other obstacles so as to prevent employees from obtaining safe footing for their work.
    - Employees working on, over or along water, where the danger of drowning exists, must be provided with and must wear approved personal flotation devices.
        - Employees are not considered exposed to the danger of drowning when:
            - Working behind standard height and strength guardrails;
            - Working inside operating cabs or stations which eliminate the possibility of accidental falling into the water;

        - Wearing approved safety belts with lifeline attached so as to preclude the possibility of falling into the water.
    - Prior to and after each use, personal flotation devices must be inspected for defects which would reduce their designed effectiveness. Defective personal flotation devices must not be used.
    - To meet the requirement of (b) of this subsection, a personal flotation device must be approved by the United States Coast Guard as a Type I PFD, Type II PFD, Type III PFD, or Type V PFD, or equivalent, pursuant to 46 CFR 160 (Coast Guard Lifesaving Equipment Specifications) and 33 CFR 175.23 (Coast Guard Table of Devices Equivalent to Personal Flotation Device
- **Emergency Preparedness**
    - Develop and implement comprehensive emergency action plans, including drills for evacuations and rescues.
    - Ensure all workers are familiar with emergency procedures.
- **Communication Systems**
    - Establish effective communication systems for workers, especially during marine operations.
    - Ensure communication devices are functional and accessible.
- **Traffic Control**
    - Implement traffic control measures to prevent accidents involving construction motor vehicles and mechanized equipment.
    - Use signage, barriers, and designated pathways for safe movement.

BASIC CONSTRUCTION MOTOR VEHICLES AND MECHANIZED EQUIPMENT REQUIREMENTS

Earthmoving Equipment - Applies to scrapers, loaders, crawler or wheel tractors, bulldozers, off-highway trucks, graders, agricultural and industrial tractors, and similar equipment.

- **Windshields and Wipers**
    - Vehicles with windshields must have working powered wipers and an effective defroster.
    - There must be no broken glass that impairs the driver’s vision.
- **Mirrors**
    - When the load or passengers obstruct the use of the interior rear view mirror, there must be an outside rear view mirror on each side of the vehicle.
- **Seat Belts**
    - Seat belts must be provided on all equipment covered by this section and meet SAE J386-1969 and J333a-1970 standards.
- **Access Roadways and Grades**

    - Equipment must be moved only on access roadways or grades constructed and maintained for safe movement.
    - Emergency access ramps and berms must restrain and control runaway vehicles.
- **Brakes**
    - All earthmoving equipment must have a service braking system capable of stopping and holding the fully loaded equipment as per SAE standards.
- **Fenders**
    - Pneumatic-tired earth-moving haulage equipment exceeding 15 mph must have fenders on all wheels.
- **Rollover Protective Structures (ROPS)**
    - Follow Subpart W requirements for ROPS and overhead protection.
- **Audible Alarms**
    - Bidirectional machines must have a horn distinguishable from the surrounding noise.
    - Earthmoving or compacting equipment with obstructed rear views must have a reverse signal alarm or be signaled by an employee.
- **Scissor Points**
    - Front-end loader scissor points must be guarded if they pose a hazard during normal operation.
- **Excavating Equipment**
    - Tractors with attachments must have seat belts when the operator is seated in the normal seating arrangement.
- **Lifting and Hauling Equipment**
    - Lift trucks and stackers must have the rated capacity posted visibly to the operator.
    - Unauthorized modifications or additions affecting capacity or safety are prohibited without the manufacturer's approval.
- **Overhead Guards**
    - High lift rider industrial trucks must be equipped with overhead guards meeting ANSI B56.1-1969 standards.

MATERIAL HANDLING OPERATIONS

All material handling operations must comply with the applicable requirements of part 1918, "Safety and Health Regulations for Longshoring." Longshoring operations include the loading, unloading, moving, or handling of construction materials, equipment, and supplies into, in, on, or out of any vessel from a fixed structure or shore-to-vessel, vessel-to-shore, fixed structure, or vessel-to-vessel.

ACCESS TO BARGES

- **Ramps**

    - Ramps for vehicle access to or between barges must be of adequate strength, provided with side boards, well maintained, and properly secured.
- **Safe Walkways**
    - If employees cannot safely step to or from the wharf, float, barge, or river towboat, a ramp or safe walkway meeting the above requirements must be provided.
- **Jacob's Ladders**
    - Jacob's ladders must be of the double rung or flat tread type, well maintained, and properly secured.
    - Jacob's ladders must either hang without slack from their lashings or be pulled up entirely.
- **Steps and Handrails**
    - When the upper end of the means of access rests on or is flush with the top of the bulwark, substantial steps properly secured and equipped with at least one substantial handrail approximately 33 inches in height must be provided between the top of the bulwark and the deck.
- **Gangway Obstructions**
    - Obstructions must not be laid on or across the gangway.
- **Illumination**
    - The means of access must be adequately illuminated for its full length.
- **Load Passing**
    - Unless structurally impossible, the means of access must be located to ensure that loads will not pass over employees.

WORKING SURFACES OF BARGES

- **Walkways**
    - Employees must not walk along the sides of covered lighters or barges with coamings more than 5 feet high unless there is a 3-foot clear walkway, grab rail, or taut handline.
- **Decks Maintenance**
    - Decks and other working surfaces must be maintained in a safe condition.
- **Safe Passage**
    - Employees must have safe passage to move fore and aft, over, or around deckloads.
- **Protection Against Falling**
    - Employees must not walk over deckloads from rail to coaming unless there is a safe passage. If necessary to stand at the outboard or inboard edge of the deckload with less than 24 inches of protection, suitable means of protection against falling must be provided.

FIRST-AID AND LIFESAVING EQUIPMENT

- **First-Aid**
    - Provisions for rendering first aid and medical assistance must comply with Subpart D of this part.
- **Lifesaving Equipment**
    - There must be at least one U.S. Coast Guard-approved 30-inch lifering with not less than 90 feet of line attached and at least one portable or permanent ladder reaching the top of the apron to the surface of the water in the vicinity of each barge in use. If not available at the pier, the employer must furnish this equipment while working the barge.
- **Work Vests**
    - Employees working on unguarded decks of barges must wear U.S. Coast Guard-approved work vests or buoyant vests.

SMALL BOAT POLICY

SMALL BOAT OPERATORS (SBO)

- 1. Only persons who have been authorized as Small Boat Operators may operate small boats under Tapani Policy.
- 2. The designated Small Boat Operator is responsible for all aspects of boating operations,
- regardless of any senior personnel present in the boat. These responsibilities include, but are
- not limited to:
    - Safety of the vessel and all persons on board.
    - Operation of the vessel in compliance with federal, state, and local regulations and
    - Safe transport of the vessel to and from the launch site.
    - The safe operation of all equipment.
    - Ensuring that all required operational and safety equipment is on board and that crew
    - members know the location and how to operate safety/survival equipment.
- Failure to comply with provisions of Tapani's Small Boat Safety Plan may be cause for the revocation or restriction of the operator's authorization. However, any operator may deviate from the requirements of the boating safety policy to the extent necessary to prevent or minimize a situation that is likely to cause death, serious physical harm, damage to the vessel, or major environmental damage.
- The operator or person in charge of a vessel is obligated by law to provide emergency assistance that can be safely provided to any individual in danger at sea. The operator or person in charge is subject to a fine and/or imprisonment for failure to do so.

ADMINISTRATIVE PROCEDURES AND TRAINING REQUIREMENTS

The small boats are to be used for Tapani approved purposes. Authorized operators must obtain a boaters license and have completed a safe boating course. This is to allow for safe, effective use of vessels and ensure reasonable care of Tapani equipment.

AUTHORIZATION OF BOAT OPERATORS

To become an authorized boat operator:

- Complete the free Boating Safety Course www.boatus.org/washington
- Provide documentation of and acquire practical experience in operating a boat.
- Demonstrate proficiency in the safe operation of the proposed type of boat in local conditions.

Proficiency will be evaluated by the BSO through a practical exam.

MAINTAINING AUTHORIZATION

The Small Boat Safety Program shall set standards for maintaining authorization.

REVOCATION OF AUTHORIZATION

An SBO's authorization may be revoked for any action deemed unsafe or unlawful or for not meeting the procedural requirements of the Small Boat Safety Program.

TRAILERING, LAUNCHING AND RETRIEVING

Procedures for pulling trailers will be covered during your check-out. When the boat is to be trailered, it should not be loaded with gear and speed should not exceed 50 mph.

ADMINISTRATIVE PROCEDURES AND RECORD KEEPING

MAINTENANCE OF RECORDS

The Boating Safety Officer or designee shall keep a file of usage for all boats, including a log of scheduled and unscheduled maintenance for each boat, boat trailer and outboard engine. Records shall be maintained for a period of 5 years.

ACCIDENT REPORTING

All incidents should be reported to Safety within 24 hours of the incident. A reportable incident is defined as follows:

EQUIPMENT

Each boat must be equipped with enough life jackets (one per person) to meet the USCG maximum occupancy rating, fire extinguishers, anchors with rope (line), first aid kits, oars (one required per

boat), flares/signal kits, whistles, vessel registration and throwable (type 4) PFDs. Lights are also to be carried and used after dark, or in restricted visibility (rain, fog, etc.). SBO's are responsible for verifying this equipment is onboard before departing.

Life jackets can be stored underneath the seat during your trip. You are required to have one Type-I life preserver for each passenger and one Type-IV life preserver for each boat, it is your responsibility to ensure they are onboard prior to departure. Do not use them as seat cushions. The anchor line can be attached to the forward bow cleat. The fire extinguishers should be stored securely. Vessel registration forms are stored in orange dry boxes / first-aid kits located on each boat.

COMMUNICATIONS

All boats will be equipped with a VHF communications device that permits it to communicate ashore from the maximum distance offshore where the boat will operate. Additionally, small boat operators must bring a working cell phone.

WEATHER

No small boats are to go out when small craft are cautioned to stay in port (i.e. small craft advisories). Small craft advisories are issued by the National Weather Service (NWS).

DEPARTURE THE BOAT OPERATOR SHALL:

- Inform all passengers of emergency procedures – man overboard, fire, and abandonment and methods for seeking assistance.
- Inform all passengers of the location of emergency equipment.
- Inform all passengers of additional hazards and appropriate precautions for the environment, weather and objectives of the operation.

REMEMBER, ABSOLUTELY NO ALCOHOL OR DRUGS ARE EVER ALLOWED!

EMERGENCY

In the event of an accident or injury, render required first aid on the scene (first-aid kit located onboard), and secure professional medical attention as needed. Any such incident is to be reported immediately Safety.

SANDBLASTING SAFETY POLICY

POLICY STATEMENT

The purpose of this safety policy is to ensure a safe working environment for all employees involved in sandblasting operations. The policy outlines procedures, responsibilities, and safety measures to minimize risks associated with sandblasting.

SCOPE

This policy applies to all employees, contractors, and visitors engaged in or present at sandblasting operations on company premises or project sites.

RESPONSIBILITIES

- **Management**: Ensure the provision of necessary resources, training, and PPE. Conduct regular safety audits and ensure compliance with the policy.
- **Supervisors**: Oversee sandblasting operations, enforce safety procedures, and ensure workers are trained and equipped with appropriate PPE.
- **Workers**: Adhere to safety procedures, use required PPE, report unsafe conditions, and participate in safety training.

HAZARD IDENTIFICATION AND RISK ASSESSMENT

- Conduct a hazard assessment before starting sandblasting operations.
- Identify potential hazards, such as:
    - Inhalation of dust and harmful particles
    - Noise exposure
    - Flying debris causing physical injuries
    - Electrical hazards from equipment

  Chemical exposure from abrasive materials

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- **Respiratory Protection**: Use NIOSH-approved respirators to protect against dust and particulate inhalation.
- **Eye and Face Protection**: Wear safety goggles or face shields to prevent injuries from flying debris.
- **Hearing Protection**: Use earplugs or earmuffs to protect against high noise levels.
- **Body Protection**: Wear abrasive blasting suits, gloves, and steel-toed boots to protect against physical injuries.

ENGINEERING CONTROLS

- Use appropriate ventilation systems to control dust and maintain air quality.
- Install barriers or enclosures to contain the blasting area and protect other workers.
- Employ dust suppression techniques, such as water sprays, to minimize airborne particles.

ADMINISTRATIVE CONTROLS

- **Training**: Provide comprehensive training on sandblasting safety, proper use of equipment, and emergency procedures.
- **Work Schedules**: Implement work-rest cycles to limit exposure time and reduce fatigue.
- **Signage**: Post warning signs and safety instructions in areas where sandblasting is performed.
- **Monitoring**: Conduct regular air quality monitoring to ensure safe levels of airborne contaminants.

SAFE WORK PRACTICES

- Inspect all sandblasting equipment and PPE before use.
- Ensure all connections and hoses are secure and in good condition.
- Do not direct the blast stream towards yourself or others.
- Keep bystanders away from the blasting area.
- Use proper grounding techniques to prevent static electricity buildup.

EMERGENCY PROCEDURES

- **First Aid**: Provide first aid kits and ensure personnel are trained in first aid and emergency response.
- **Emergency Contacts**: Maintain a list of emergency contacts, including medical facilities and poison control centers.
- **Spill Response**: Establish procedures for handling spills of abrasive materials and other hazardous substances.
- **Evacuation Plan**: Develop and communicate an evacuation plan in case of emergencies such as fires or severe injuries.

HEALTH MONITORING

- Conduct regular health assessments for workers to monitor for symptoms of exposure to hazardous materials.
- Maintain health records and exposure data for all employees involved in sandblasting operations.

RECORD KEEPING

- Keep records of:
    - Training sessions
    - Safety inspections
    - Incident and injury reports
    - Health monitoring results
    - Equipment maintenance and inspections

CONTINUOUS IMPROVEMENT

- Review and update the safety policy regularly to reflect changes in regulations, operations, or new hazards identified.
- Encourage feedback from employees to improve safety practices and address any concerns.

COMPLIANCE

- Adhere to relevant occupational safety and health regulations, such as OSHA standards (e.g., 29 CFR 1910.94) and any applicable state and local regulations.
- Ensure all sandblasting operations comply with industry best practices and manufacturer's safety recommendations.

WILDLIFE HAZARD SAFETY POLICY

POLICY STATEMENT

The purpose of this policy is to establish procedures for preventing and responding to wildlife-related incidents, including snake bites, bee stings, and encounters with bears and cougars, to protect the health and safety of all individuals on company premises or project sites.

SCOPE

This policy applies to all employees, contractors, and visitors who may encounter wildlife hazards in their work environment.

RESPONSIBILITIES

- **Management**: Provide resources for training, safety equipment, and emergency response. Ensure policy compliance.
- **Supervisors**: Monitor work areas for wildlife hazards, enforce safety procedures, and ensure workers are trained and equipped.

- **Workers**: Follow safety procedures, use appropriate PPE, and report wildlife sightings or incidents.

SNAKE BITE SAFETY POLICY

PREVENTION

- **Awareness**: Educate workers about snake habitats and behaviors.
- **Avoidance**: Instruct workers to avoid areas where snakes are likely to be found (e.g., tall grass, piles of debris).
- **Protective Clothing**: Wear long pants, boots, and gloves in areas where snakes may be present.
- **Inspection**: Check work areas and equipment for snakes before starting work.

RESPONSE TO SNAKE BITES

- **First Aid**:
    - Keep the victim calm and still to slow the spread of venom.
    - Immobilize the bitten area and keep it at or below heart level.
    - Remove tight clothing and jewelry near the bite site.
    - Wash the bite area with soap and water.
    - Do not apply ice, tourniquets, or attempt to suck out the venom.
- **Medical Assistance**: Call emergency services immediately and transport the victim to the nearest medical facility.
- **Reporting**: Report the incident to a supervisor and document the circumstances of the bite.

BEE STING SAFETY POLICY

PREVENTION

- **Avoidance**: Identify and avoid areas with high bee activity, such as hives and nests.
- **Protective Clothing**: Wear long sleeves, pants, and gloves when working near potential bee habitats.
- **Fragrance Avoidance**: Avoid wearing perfumes, scented lotions, or brightly colored clothing that may attract bees.

RESPONSE TO BEE STINGS

- **First Aid**:
    - Remove the stinger by scraping it out with a blunt object (e.g., credit card). Do not pinch the stinger.

    - Wash the sting area with soap and water.
    - Apply a cold pack to reduce swelling.
    - Administer antihistamines or pain relievers if needed.
- **Allergic Reactions**:
    - Be aware of signs of an allergic reaction (e.g., difficulty breathing, swelling of the face or throat, dizziness).
    - Use an epinephrine auto-injector (EpiPen) if the victim has one.
    - Call emergency services immediately for severe reactions.
- **Reporting**: Report the incident to a supervisor and document the circumstances of the sting.

BEAR ENCOUNTER SAFETY POLICY

PREVENTION

- **Avoidance**: Identify and avoid areas with known bear activity.
- **Food Storage**: Store food and waste in bear-proof containers or away from the work site.
- **Noise**: Make noise to alert bears to your presence, especially in dense vegetation or near streams.

RESPONSE TO BEAR ENCOUNTERS

- **Remain Calm**: Do not run. Speak calmly and slowly back away.
- **Group Together**: Stay in a group and make yourselves appear larger.
- **Bear Spray**: Carry bear spray and know how to use it.
- **Defensive Stance**: If the bear charges, use bear spray. If contact is made, play dead for grizzly bears and fight back against black bears.

COUGAR ENCOUNTER SAFETY POLICY

PREVENTION

- **Avoidance**: Identify and avoid areas with known cougar activity.
- **Awareness**: Stay alert and watch for signs of cougar presence (e.g., tracks, scat).
- **Noise**: Make noise to alert cougars to your presence.

RESPONSE TO COUGAR ENCOUNTERS

- **Remain Calm**: Do not run. Maintain eye contact and stand your ground.
- **Appear Larger**: Raise your arms, open your jacket, and make yourself appear larger.
- **Back Away Slowly**: Slowly back away while maintaining eye contact.

- **Defensive Measures**: If the cougar acts aggressively, throw objects, speak loudly, and fight back if attacked.

GENERAL EMERGENCY PROCEDURES

FIRST AID AND EMERGENCY RESPONSE

- Provide first aid kits and ensure personnel are trained in first aid and emergency response for wildlife incidents.
- Maintain a list of emergency contacts, including local medical facilities and wildlife control authorities.
- Develop and communicate an evacuation plan for severe wildlife incidents.

TRAINING AND AWARENESS

- Conduct regular training sessions on wildlife hazard awareness, prevention, and response.
- Educate workers on the specific wildlife hazards present in their work area.