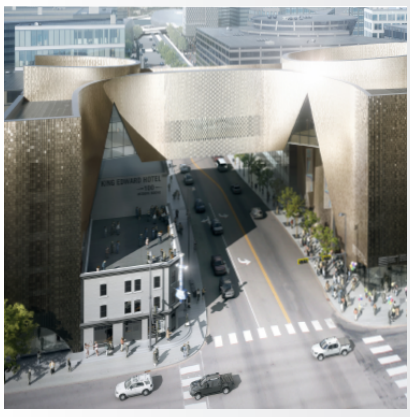
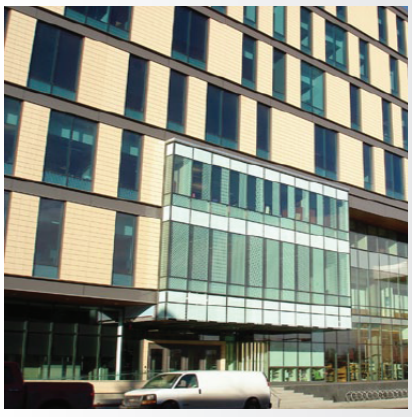
ARPI'S INDUSTRIES LTD.

Mechanical Contractor

Arpi's Safety Manual

4th Edition





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Mechanical Contractor

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INTRODUCTION

ARPI'S INDUSTRIES LTD '*Health, Safety, and Environment (HSE) Program'* was developed by the Health Safety and Environment Department, in conjunction with representatives from each division of the company.

The *HSE Program* was developed based on the ACSA COR Program, current Occupational Health and Safety Legislation, and CSA standards. It establishes the expectations and guidelines for all company personnel, including sub-contractors, to follow while conducting business for the company.

This manual is to be kept readily available to all personnel and referred to for all HSE concerns. Copies of this manual and any applicable legislation can be obtained by contacting the HSE Department.

SECTION ONE: Policy and Responsibility

1.1 COMPANY SAFETY POLICY

The Company is committed to the protection of the physical health, safety, psychological, and social well-being of its workers, contractors, and visitors as well as the protection from accidental loss of all its resources.

In fulfilling this commitment to protect both people and property, management will provide and maintain a safe and healthful work environment in accordance with industry standards and in compliance with legislative requirements, and will strive to eliminate any foreseeable hazards which may result in property damage, accidents or personal injury/illness. To accomplish this a clearly defined responsibilities are assigned to all personnel including but not limited to Managers, Supervisors, Workers, and Contractors.

All personnel will be equally responsible for minimizing accidents within our facilities. Safe work practices and procedures will be clearly defined in the safety manual, which all personnel are expected to follow.

Accidental loss can be controlled through good management in combination with active employee involvement. Safety is the direct responsibility of all managers, supervisors, workers, and contractors.

All management functions will comply with company safety requirements as they relate to planning, operation and maintenance of facilities and equipment. All personnel will perform their jobs properly in accordance with established procedures and safe work practices.

I trust that all of you join me in a personal commitment to make safety a way of life.

The safety information in this policy does not take precedence over Occupational Health & Safety (OH&S) Regulations. All employees should be familiar with the OH&S Act and Regulations.

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

1.3 POLICY FOR PROTECTION OF EXTERNAL PARTIES

It is of the utmost importance that all people outside of the Company's control are protected by the Company's operations at all times as far as reasonably practicable. This policy will outline how the external parties will be protected by dividing them into 3 groups; General Public, External Worksite Parties/Self-Employed Persons, and Visitors.

General Public

The general public will be protected using any combination of the following methods when work is being conducted that may impact them.

i. Physical Barriers
ii. Signage
iii. Spotters
iv. Traffic Re-Direction
v. Education (Direct explanation of the hazards)
vi. Any control developed in the field as per the Hazard Assessment

Contracted Employers, External Worksite Parties, and Self-Employed Persons

External Worksite Parties/Self-Employed Persons will be protected using any combination of the following methods when work is being conducted that may impact them.

i. Physical Barriers
ii. Signage
iii. Spotters
iv. Worksite Coordination
vii. Education (Direct explanation of the hazards and Hazard Assessment Review)
viii. Any control developed in the field as per the Hazard Assessment

Visitors

Visitors will be protected using any combination of the following methods when work is being conducted that may impact them.

i. Orientate them to the work environment prior to going onto the worksite
ii. Complete a sign in form
iii. Provide PPE
iv. Provide an Escort
v. Education (Direct explanation of the hazards)
vi. Any control developed in the field as per the Hazard Assessment

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

1.3 ENVIRONMENTAL POLICY

This company recognizes that its business impacts the environment. It is our policy to ensure that all environmental aspects and impacts from our operations reduce and where possibly prevent adverse effects on the environment and its resources. Our operations refer to, adopt, implement and maintain good environmental alternatives, practices and management standards.

Our commitment is to:

- Comply fully with all relevant environmental legislation, codes of practice and regulations as applicable with our industry sector.
- Minimize waste and increase recycling where practical.
- Identify and manage environmental risks and hazards from all our activities.
- Use where practical, more environmentally friendly materials and energy efficient resources in our operations.
- Involve subcontractors in the implementation of our environmental policy.
- Provide suitable training to enable employees to deal with their specific areas of environmental control.
- Encourage employees to contribute and participate in our environmental plan.
- Continuously improve on the environmental efficiency of our production process and transportation.
- Maintain our COR certification.
- Allocate adequate resources to achieve and maintain the goals of this policy.

This policy represents our concept for good environmental management.

Julie Berdin, President

February 26, 2024
Date

1.4 ENVIRONMENTAL RELEASE POLICY

The purpose of this procedure is to establish a standard for the prevention, clean-up, and reporting of environmental releases in association with ARPI'S INDUSTRIES LTD projects.

The following requirements shall be followed in order to minimize potential environmental releases on the project. All equipment shall be visibly inspected for leaks and repaired as required prior to arriving on the project. The use of stationary fuel tanks on the project shall be minimized and only by permission of the client. Tidy tanks, gasoline cans and solvents shall be stored in a location where they are not prone to damage. Absorbent pads or other methods of containment shall be used as required for all changes and servicing to prevent spills.

The following actions shall be taken in the event of a spill: berm or place absorbent on the spill to prevent it from spreading. Flag off or isolate the spill area with red "Danger Do Not Enter" tape. Review the product MSDS for information on the product hazards, handling and personal protective equipment requirements. Clean-up spills using absorbents. Ensure all contaminated soils are also removed. Place spilled material in appropriate containers and label for disposal. Check with supplier/landfill authority for disposal requirements.

All spills on the project must be reported to the Prime Contractor/client as per site requirements.

External reporting to the Alberta Environmental Protection and Enhancement Agency (EPEA) will be through the direction of the Prime Contractor/client.

All spills with the potential to create an environmental hazard shall be reported to management/Safety Dept. at minimum standards set forth by (EPEA) shall be followed.

Julie Berdin, President

February 26, 2024
Date

1.5 ASSIGNMENT OF RESPONSIBILITY

SENIOR MANAGEMENT

- Establish and Maintain the Health and Safety Program.
- Provide a safe work place.
- Ensure proper training of workers.
- Promote safety policy and encourage safety culture.
- Review the results and corrective actions from serious incident investigations.
- Lead by example

MANAGEMENT

- Promote safety policy and encourage safety culture.
- Review all site toolbox meeting minutes.
- Review incident reports and ensure a proper investigation was conducted and all corrective actions been implemented. Take action as needed.
- Review site safety inspections and sign off on compliance and corrective actions.
- Reviews FLHA's and follow FLHA policy.
- Ensure all New Hires complete the New Hire Orientation.
- Attend site toolbox/safety meetings as required.
- Ensure all WCB Claims are filled as required
- Ensure that employee training records are maintained
- Lead by example.

SUPERVISOR (FOREMAN/SUPERINTENDENT/CREW LEADER)

- Promote safety awareness.
- Develop safe work procedures in conjunction with the Safety Department.
- Correct unsafe practices/conditions.
- Enforce Safety rules and follow the disciplinary action policy.
- Investigate all incidents immediately and report the findings to Management
- Ensure proper maintenance of equipment and tools.
- Comply with regulations.
- FLHA – review and confirm form is accurate and completed properly. Sign off on form and give any coaching needed to raise awareness and proper use of the form.
- PPE – ensure all employees are wearing proper PPE. Ensure damaged or unusable PPE is replaced.
- Observe crews and area for safety concerns or hazards. Take necessary action to promote a safe work environment.
- Ensure daily housekeeping standards are met for all work areas. Materials are stored correctly and all tools are secure.
- Confirm all employees have correct and up to date courses/certificates to safely do the work assigned to them.
- Verify that workers are competent in the tasks assigned to them.

- Conduct weekly toolbox/safety meeting and submit the meeting minutes to Management.
- Conduct site safety inspections as per the inspection policy.
- Lead by example.

WORKERS AND CONTRACTORS

- Follow all Safe Work Practices and Procedures.
- Report unsafe conditions.
- Correct unsafe conditions
- Report unsafe acts.
- Report any injury and incidents.
- Comply with rules and regulations.
- Make safety suggestions.
- Ensure housekeeping standards are met as per the Housekeeping Policy.
- Ensure all tools are secure.
- Attend weekly Toolbox/Safety Meetings and sign off on participation.
- Participate in the FLHA process and sign off as per the FLHA policy.
- Ensure tools are protected and treated in a proper manner.
- Wear required PPE as per the PPE Policy.
- Set a good example.

SECTION TWO: Hazard Assessment

2.1 HAZARD ASSESSMENT POLICY

The Company recognizes that hazards can be present in any work environment whether an office, yard/warehouse/manufacturing/fabrication shop, construction site, or service site. This policy was developed to outline how ARPI'S INDUSTRIES LTD will assess these diverse environments. Each of these environments is unique and requires different criteria to adequately address the hazards contained in them. All workers involved in the Hazard Assessment process will be trained to do so during their initial orientation and update training will be completed twice per year through safety meetings.

FLHAs must be completed;

- When work is at temporary/mobile worksites
- When workers are conducting activities at a worksite not owned by their employer
- When a new activity starts at a worksite
- Before a job or task begins
- When changes occur at a worksite
- At minimum daily for all field sites and weekly for all shop/yard facilities

FIELD LEVEL HAZARD ASSESSMENTS (FLHA)

Yard/Warehouse/Manufacturing/Fabrication Shop Environments

Yard, Warehouse, manufacturing, and fabrication shops (Shop) are generally fairly static work environments; however, due to the nature of the work conducted in them they are rated as a moderate hazard area. As such all ARPI'S INDUSTRIES LTD controlled warehouse, manufacturing, and fabrication shop environments are to be assessed using the following criteria:

- A hazard assessment is to be conducted on a weekly basis on the first working day of that week prior to any work commencing.
- If a unique task is to be done a separate hazard assessment must be conducted for that task.
- All warehouse/manufacturing/fabrication shop employees (The Assessment Team) will be involved in the hazard assessment process from start to finish.
- The assessment team will tour through all shop and yard areas they will potentially be working in for that week.
- All hazards observed on the tour will be noted on a field level hazard assessment (FLHA) form by the shop foreman.
- All hazards involved with specific tasks to be conducted in the shop will be noted on the FLHA.
- The written FLHA will be reviewed and signed by all employees working in the shop areas.
- The FLHA must be clearly posted in the shop office or shop safety board for the duration of the week it is valid for.
- Any visitors to the shop must be informed of any hazards they may encounter prior to entering the shop areas.

- At the end of the last working day that the FLHA is valid for the shop foreman must submit the FLHA to their Department Manager.
- Once reviewed by the Department Manager the FLHA will be submitted to the Safety Department.
- Where digital versions of the FLHAs are being used electronic submission to all parties in one email is allowable. It must be ensured that all parties are able to complete their review requirements.

Construction Site Environments

Construction sites are very dynamic work environments involving varying levels of hazard based on the tasks being performed by ARPI'S employees, other trade employees, and work conditions. They are rated at a moderate to high hazard area. As such construction site environments are to be assessed using the following criteria:

- A hazard assessment must be conducted at the start of each working day (before any work is started), prior to a new task starting during the day, and if conditions in a given work area change.
- Hazard assessments are to be conducted by each crew working on a particular task in a given work area.
- All members of the work crew must tour through the entire area that they are to work in.
- All hazards observed on the tour will be noted on a Field Level Hazard Assessment Form (FLHA) by the crew leader (foreman, supervisor, journeyman, or person designated by a supervisor).
- All hazards associated with the tasks to be performed in the work area will be noted on the FLHA.
- The written FLHA will be reviewed and signed by all members of the crew.
- The foreman overseeing the work conducted by the crew will review and sign the FLHA.
- After reviewing and signing, the foreman will take a copy of the form to submit to the site's prime contractor (if required by the prime contractor).
- The crew leader will retain the original copy in the work area for the duration of the task and/or day.
- At the end of the work day the crew leader will submit the original copy to the ARPI'S INDUSTRIES LTD site office.
- The site management will collect all completed FLHAs on a weekly basis and submit them to the Project Manager.
- The Project Manager will submit all completed FLHAs to the Safety Department on a weekly basis.
- Where digital versions of the FLHAs are being used electronic submission to all parties in one email is allowable. It must be ensured that all parties are able to complete their review requirements.

Service Site Environments

Service sites are very dynamic work environments involving varying levels of hazard based on the tasks being performed by ARPI'S employees, other trade employees, the presence of building occupants, and work conditions. They are rated at a moderate to high hazard area. As such service site environments are to be assessed using the following criteria:

- A hazard assessment must be conducted at the start of each service call (before any work is started), prior to a new task starting during the day, and if conditions in a given work area change.
- Hazard assessments are to be conducted by the lead technician with input from any other technicians onsite and reviewed by all.
- All members of the service crew must tour through the entire area that they are to work in.
- All hazards observed on the tour will be noted on a Field Level Hazard Assessment Form (FLHA) by the lead technician.
- All hazards associated with the tasks to be performed in the work area will be noted on the FLHA.
- The written FLHA will be reviewed by all members of the crew.
- At the completion of the service call the FLHA will be submitted with the Work Order to ARPI'S INDUSTRIES LTD office.
- All completed FLHAs will be kept on file for review by the Safety Department and Management.
- Where digital versions of the FLHAs are being used they will be saved in the software used for review by the Safety Department and Management.

FORMAL HAZARD ASSESSMENTS

Formal Hazard Assessments (FHA) are completed for the Company's overall operation based on Job/Position/Role, for all major construction projects using the Project FHA Template (90 day duration or longer), and for the Office Environment. All FHAs must be completed prior to project start-up. Reviews must be completed; when new operations, work processes, equipment, materials or products are introduced, when operations work-related processes or equipment are modified, when site-specific hazard assessments, inspections, or investigations identify a previously unrecognized hazard, and at minimum annually.

GENERAL HAZARD ASSESSMENT REVIEW REQUIREMENTS

- Foreman/Supervisors – Review FLHAs on a daily basis. Review FHA prior to project start and as per policy.
- Site Management / Project Manager – Review 1 in 100 completed FLHAs. Review FHA prior to project start and as per policy
- Department Manager – Review 1 in 500 completed FLHAs completed in their department. Review FHA prior to project start and as per policy
- Safety Department – Review 1 in 500 completed FLHAs completed for ARPI'S INDUSTRIES LTD.

Review FHA prior to project start and as per policy

Julie Berdin, President

February 26, 2024

Date

2.2 FORMAL HAZARD ASSESSMENT

Position and Task Formal Hazard Assessment

Job/Position/Role	Tasks/Activities	Hazards	Ranking	Controls
Senior Management	General Office Work	Ergonomics	2	Conduct Ergonomic assessment and ensure proper setup of work area. Utilize ergonomic devices if required.
		Repetitive Strain	2	Take regular breaks throughout the day and stretch.
		Exposure to Office Chemicals	1	Train in WHMIS 2015. Ensure all SDS Sheets are up to date and readily available.
	Critical Decision Making	Increased Injury Potential to Workers	2	Ensure all available data is considered. Refer to all applicable legislation. Consult with subject matter experts. Conduct a hazard analysis if applicable.
		Risk of Financial Loss to Company	2	Ensure all available data is considered. Refer to all applicable legislation. Consult with subject matter experts. Conduct a cost-benefit analysis.
		Stress	2	Take breaks as needed. Utilize benefits program to reduce stress.
	Documentation Review	Insufficient Review Resulting in Missed Opportunity for Improvement	2	Schedule sufficient time to completely review documentation. Make notes based on your review for follow up items and corrective actions. Delegate corrective actions to the appropriate personnel with expected timelines. Diarize to follow up to ensure proper implementation of corrective actions
		Ergonomics	1	Conduct Ergonomic assessment and ensure proper setup of work area. Utilize ergonomic devices if required.
	Create and Maintain the Company Safety Program	Insufficient Content/Overly Complicated Content	2	Involve personnel from all employment levels during development and updates. Utilize the JWHSC to develop and/or review new content. Conduct annual reviews and audits to identify strengths and weaknesses. Implement all required updates in a timely manner.
Management	General Office Work	Ergonomics	2	Conduct Ergonomic assessment and ensure proper setup of work area. Utilize ergonomic devices if required.
		Repetitive Strain	2	Take regular breaks throughout the day and stretch.

		Exposure to Chemicals	1	Train in WHMIS 2015. Ensure all SDS Sheets are up to date and readily available.
	Critical Decision Making	Increased Injury Potential to Workers	2	Ensure all available data is considered. Refer to all applicable legislation. Consult with subject matter experts. Conduct a hazard analysis if applicable.
		Risk of Financial Loss to Company	2	Ensure all available data is considered. Refer to all applicable legislation. Consult with subject matter experts. Conduct a cost-benefit analysis.
		Stress	2	Take breaks as needed. Utilize benefits program to reduce stress.
	Documentation Review	Insufficient Review Resulting in Missed Opportunity for Improvement	2	Schedule sufficient time to completely review documentation. Make notes based on your review for follow up items and corrective actions. Delegate corrective actions to the appropriate personnel with expected timelines. Diarize to follow up to ensure proper implementation of corrective actions
		Ergonomics	1	Conduct Ergonomic assessment and ensure proper setup of work area. Utilize ergonomic devices if required.
	Inspect Worksites	Exposure to Active Construction Processes	2	Do not enter areas that are not relevant to the Company's work. Review and sign hazard assessments for the work areas to be entered. In the absence of a relevant hazard assessment create one. When entering areas that are unfamiliar or where unfamiliar processes are taking place ensure an escort is utilized that is familiar with the area and processes. Wear appropriate PPE as per the PPE Policy
		Exposure to Unfinished Construction Site Conditions	2	Do not enter areas that are not relevant to the Company's work. Review and sign hazard assessments for the work areas to be entered. In the absence of a relevant hazard assessment create one. When entering areas that are unfamiliar or where unfamiliar processes are taking place ensure an escort is utilized that is familiar with the area and processes. Wear appropriate PPE as per the PPE Policy

		Worker Confrontation	2	Use de-escalation techniques to calm a situation involving an aggressive person. When delivering negative or unwanted feedback use non-aggressive language, take a non-aggressive stance and tone, and ensure a third party is present during the conversation. Refer to the Workplace Violence Policy Refer to the Workplace Harassment Policy
Office Workers	General Office Work	Ergonomics	2	Conduct Ergonomic assessment and ensure proper setup of work area. Utilize ergonomic devices if required.
		Repetitive Strain	2	Take regular breaks throughout the day and stretch.
		Exposure to Office Chemicals	1	Train in WHMIS 2015. Ensure all SDS Sheets are up to date and readily available.
	Answer Phones	Stress	2	Take breaks as needed. Utilize benefits program to reduce stress. When confronted with an aggressive caller use de-escalation techniques. If this fails place the caller on hold, call a supervisor and transfer the call.
		Ergonomics	1	Conduct ergonomic assessment and ensure proper setup of work area. Utilize a telephone headset.
	Process Paperwork	Insufficient Detailing	2	Schedule sufficient time to complete paperwork Make notes as required. Diarize to follow up any outstanding items
		Ergonomics	1	Conduct Ergonomic assessment and ensure proper setup of work area. Utilize ergonomic devices if required.
Supervisors	Supervise Workers	Inadequate Training	2	Train in Leadership for Safety Excellence Conduct ongoing internal company training for supervisor responsibilities Conduct ongoing reviews of supervisor performance
		Inadequate Information/Knowledge	2	Review all available information for job scope. Review changes in job scope/instruction immediately. Request further information immediately when adequate details are not provided.

		Inadequate Instruction	2	Review job/task scope before new tasks are started to ensure all latest information on the job/task is known. Conduct standup meetings with personnel prior to the start of a new job/task to inform of all requirements, hazards, and expected controls. Review FLHAs for all jobs/tasks to ensure that personnel are recognizing and controlling all hazards. Observe personnel during jobs/tasks to ensure they are following the instructions given and that those instructions were understood. If jobs/tasks are being not being conducted as instructed stop work and re-instruct. Verify with personnel that they fully understand the requirements and expectations.
		Inadequate Supply of Equipment/PPE	2	Monitor and plan ahead for upcoming jobs/tasks. Review the Safe Work Practices, Safe Job Procedures, Hazard Assessments and Policies related to upcoming jobs/tasks to determine any PPE that will be required. Place orders with the Shop and or Safety Department (depending of the particular PPE required) well in advance of the job/task starting to ensure the PPE is on hand.
	Critical Decision Making	Increased Injury Potential to Workers	2	Ensure all available data is considered. Refer to all applicable legislation. Consult with subject matter experts. Conduct a hazard analysis if applicable.
		Risk of Financial Loss to Company	2	Ensure all available data is considered. Refer to all applicable legislation. Consult with subject matter experts. Conduct a cost-benefit analysis.
		Stress	2	Take breaks as needed. Utilize EAP benefits to reduce stress.
	Completion of Site Documentation	Insufficient Completion Resulting in Missed Opportunity for Improvement	2	Schedule sufficient time to completely documentation. Make notes for follow up items and corrective actions. Delegate corrective actions to the appropriate personnel with expected timelines. Diarize to follow up to ensure proper implementation of corrective actions

		Increased Injury Potential to Workers	2	Ensure all available data is considered. Refer to all applicable legislation. Consult with subject matter experts. Conduct a hazard analysis if applicable.
		Ergonomics	1	Conduct Ergonomic assessment and ensure proper setup of work area. Utilize ergonomic devices if required.
	Conduct Site and Safety Meetings	Inadequate Training	2	Train in Leadership for Safety Excellence. Conduct ongoing internal company training for supervisor responsibilities. Conduct ongoing reviews of toolbox meeting completion to identify if supervisors require more training/re-training.
		Inadequate Information/Knowledge	2	Review all available information for upcoming tasks and structured discussions Request further information immediately when adequate details are not provided. Create an agenda for the meeting prior to meeting start.
		Inadequate Instruction	2	Detail all information in the meeting agenda to all meeting attendees Invite all attendees to provide input on each topic as well as bring forward any concerns and/or ideas. Ensure an open dialogue with all attendees Observe personnel during jobs/tasks to ensure they are following the instructions given and that those instructions were understood. If jobs/tasks are being not being conducted as instructed stop work and re-instruct. Verify with personnel that they fully understand the requirements and expectations.
		Insufficient Detailing	2	Schedule sufficient time to complete the meeting including time for open discussion Make notes on the meeting report for what was discussed and any new items brought forward by the attendees. Diarize to follow up any outstanding items.
	Ensure Worker Competency	Risk of Injury/Incident due to Insufficient Supervision	2	Ensure all personnel not yet deemed competent for the task assigned only operate under the direct supervision of a designated competent worker.

		Incompetent Workforce	2	Before a person can be deemed competent the supervisor must verify that the person is adequately qualified, suitably trained and has sufficient experience to safely perform the assigned tasks with minimal or no supervision. Any personnel on a jobsite that is not deemed competent for the work being performed must be listed in the "At Risk Worker" section of the FLHA. It is the responsibility of the supervisor (or a competent designate) in charge of the that work to directly supervise the at risk worker's task work until such time they meet the criteria of a competent worker.
	Inspect Worksites	Exposure to Active Construction Processes	2	Do not enter areas that are not relevant to the Company's work. Review and sign hazard assessments for the work areas to be entered. In the absence of a relevant hazard assessment create one. When entering areas that are unfamiliar or where unfamiliar processes are taking place ensure an escort is utilized that is familiar with the area and processes. Wear appropriate PPE as per the PPE Policy
		Exposure to Unfinished Construction Site Conditions	2	Do not enter areas that are not relevant to the Company's work. Review and sign hazard assessments for the work areas to be entered. In the absence of a relevant hazard assessment create one. When entering areas that are unfamiliar or where unfamiliar processes are taking place ensure an escort is utilized that is familiar with the area and processes. Wear appropriate PPE as per the PPE Policy
		Worker Confrontation	2	Use de-escalation techniques to calm a situation involving an aggressive person. When delivering negative or unwanted feedback use non-aggressive language, take a non-aggressive stance and tone, and ensure a third party is present during the conversation. Refer to the Workplace Violence Policy Refer to the Workplace Harassment Policy

	Conduct Incident Investigations	Inadequate Training	2	Train in Leadership for Safety Excellence. Conduct ongoing internal company training for supervisor responsibilities specific to Investigations. Conduct ongoing reviews of investigation report completion to identify if supervisors require more training/re-training. For more involved or serious incident investigations close the scene of the incident and contact the Health, Safety, and Environment Department to have a more highly trained investigator take over the investigation.
		Inadequate Information/Knowledge	2	Review all available information including the scene of the incident, interviewing involved parties, and collecting witness statements from any person that may be able to contribute relevant information. Take pictures of the scene including close ups and distance shots. Document an inventory of all equipment, tools, or any other items at the scene of the incident. Tag and confiscate any items that may be relevant to further review. If at any time assistance is required to complete any aspect of an investigation contact the Health, Safety, and Environment Department.

		Insufficient Detailing	2	Do not rush the investigative process. Take whatever time is required to ensure all relevant details are noted. Be very specific and exact in your notes. Ensure that all details are fully explained. Anyone reading the report should be able to visualize the scene and how the incident occurred when your report is completed. Fully explain the direct and indirect causes for the incident as well as all required corrective actions. Set required completion dates for all corrective actions and note who is responsible to complete them. Diarize to follow up any outstanding items. If at any time assistance is required to complete any aspect of an investigation contact the Health, Safety, and Environment Department.
	Assist with Field & Shop Work	Various	2	See "Field & Shop Personnel" section of this Hazard Assessment
Workers	Operation of Tools	Electrocution	3	Ensure all tools are inspected prior to use. If any electrical components (ie. cords, plug, housing, etc.) are damaged the tool must be tagged and taken out of service. Never use electrical tape to cover electrical damage. Repairs must be done by authorized personnel or a repair facility to return the tool to the original manufactured condition
		Air Embolism	3	Never allow compressed air to blow onto skin or clothing. Compressed air at pressures as low as 30psi can penetrate the skin, enter the blood stream, and expand. This air bubble can result in severe injury and death.
		Eye Injury	2	Operate all tools as per manufacturer instruction and applicable legislation for their intended use only. Wear appropriate eye protection at all times. Refer to manufactures manuals, Safe Work Practices, Safe Job Procedures, and Hazard Assessments to determine the correct type of eye protection to use.

		Hearing Damage	2	Many tools operate at high noise levels. Any tool that operates at or above 85db requires the use of hearing protection. Refer to the Noise Exposure Management section of the Company Safety Manual for further guidance on minimizing noise exposure.
		Improper Procedure	2	All Personnel must be trained and deemed competent to use tools. It is the responsibility of Company Supervisors to verify that personnel are able to utilize the required tools independently. Refer to the manufacturer manuals, Safe Work Practices, Safe Job Procedures, and applicable legislation for guidance on the proper procedure to use a tool.
		Cuts/Laceration/Pinch	2	Operate all tools as per manufacturer instruction and applicable legislation for their intended use only. Wear appropriate PPE (ie. gloves, sleeves, aprons, etc.) at all times. Refer to manufactures manuals, Safe Work Practices, Safe Job Procedures, and Hazard Assessments to determine the correct PPE to use.
	Operation of Shop Equipment	Improper Procedure/Setup	3	All Personnel must be trained and deemed competent to use equipment. It is the responsibility of Company Supervisors to verify that personnel are able to utilize the required equipment independently. Refer to the manufacturer manuals, Safe Work Practices, Safe Job Procedures, and applicable legislation for guidance on the proper procedure to use a piece of equipment.

		Insufficient Inspection	3	All equipment must be inspected as per manufacturer and legislative requirements. Personnel must be trained and deemed competent to conduct inspections on equipment. Many types of equipment have a per-use inspection form or maintenance inspection form associated with it. These inspection forms must be completed as required according to manufacturer specification, legislation, Safe Work Practice, Safe Job Procedure, and Company Policy. When inspecting a piece of equipment ensure all operational and safety system of the equipment are functioning properly and the structure of the equipment is in safe operating condition. Failure to properly inspect equipment prior to use can cause injury and death
		Electrocution	3	Ensure all equipment is inspected prior to use. If any electrical components (ie. cords, plug, housing, etc.) are damaged the equipment must be tagged and taken out of service. Never use electrical tape to cover electrical damage. Repairs must be done by authorized personnel or a repair facility to return the equipment to the original manufactured condition Use Emergency Stop Buttons or dead man operator's switch (if equipped) in the event that any malfunction is observed during operation

		Pinch/Crush Hazard	3	Operate all equipment as per manufacturer instruction and applicable legislation for their intended use only. Wear appropriate PPE (ie. gloves, etc.) at all times. Identify all pinch and crush points prior to use and keep all body parts clear. Refer to manufactures manuals, Safe Work Practices, Safe Job Procedures, and Hazard Assessments to determine the correct PPE to use. Use Emergency Stop Buttons or dead man operator's switch (if equipped) in the event that any malfunction is observed during operation
		Eye Injury	2	Operate all equipment as per manufacturer instruction and applicable legislation for their intended use only. Wear appropriate eye protection at all times. Refer to manufactures manuals, Safe Work Practices, Safe Job Procedures, and Hazard Assessments to determine the correct type of eye protection to use.
		Hearing Damage	2	Many types of equipment operate at high noise levels. Any equipment that operates at or above 85db requires the use of hearing protection. Refer to the Noise Exposure Management section of the Company Safety Manual for further guidance on minimizing noise exposure.
	Operation of Powered Mobile Equipment (Forklifts, Aerial Platforms, Telehandler, etc)	Improper Procedure/Setup	3	All Personnel must be trained and deemed competent to use equipment. It is the responsibility of Company Supervisors to verify that personnel are able to utilize the required equipment independently. Refer to the manufacturer manuals, Safe Work Practices, Safe Job Procedures, and applicable legislation for guidance on the proper procedure to use a piece of equipment. Utilize seat belts in all equipment outfitted with them

		Insufficient Inspection	3	All equipment must be inspected as per manufacturer and legislative requirements. Personnel must be trained and deemed competent to conduct inspections on equipment. Many types of equipment have a per-use inspection form or maintenance inspection form associated with it. These inspection forms must be completed as required according to manufacturer specification, legislation, Safe Work Practice, Safe Job Procedure, and Company Policy. When inspecting a piece of equipment ensure all operational and safety system of the equipment are functioning properly and the structure of the equipment is in safe operating condition. Failure to properly inspect equipment prior to use can cause injury and death
		Electrocution	3	Ensure all equipment is inspected prior to use. If any electrical components (ie. cords, plug, housing, etc.) are damaged the equipment must be tagged and taken out of service. Never use electrical tape to cover electrical damage. Repairs must be done by authorized personnel or a repair facility to return the equipment to the original manufactured condition Use Emergency Stop Buttons or dead man operator's switch (if equipped) in the event that any malfunction is observed during operation

		Pinch/Crush Hazard	3	Operate all equipment as per manufacturer instruction and applicable legislation for their intended use only. Wear appropriate PPE (ie. gloves, etc.) at all times. Identify all pinch and crush points prior to use and keep all body parts clear. Refer to manufactures manuals, Safe Work Practices, Safe Job Procedures, and Hazard Assessments to determine the correct PPE to use. Use Emergency Stop Buttons or dead man operator's switch (if equipped) in the event that any malfunction is observed during operation Utilize seat belts in all equipment outfitted with them
		Fall Hazard	2	All workers operating equipment at height must wear fall protection at all times and be connected to the equipment's engineered anchor point Manufactures operating instructions must be followed at all times In the event of a fall and a worker is suspended outside the equipment the equipment ground controls must be utilized to lower the worker to the ground
		Eye Injury	2	Operate all equipment as per manufacturer instruction and applicable legislation for their intended use only. Wear appropriate eye protection at all times. Refer to manufactures manuals, Safe Work Practices, Safe Job Procedures, and Hazard Assessments to determine the correct type of eye protection to use.

	Fabricate Mechanical Systems and Components	Insufficient Inspection	3	All equipment must be inspected as per manufacturer and legislative requirements. Personnel must be trained and deemed competent to conduct inspections on equipment. Many types of equipment have a per-use inspection form or maintenance inspection form associated with it. These inspection forms must be completed as required according to manufacturer specification, legislation, Safe Work Practice, Safe Job Procedure, and Company Policy. When inspecting a piece of equipment ensure all operational and safety system of the equipment are functioning properly and the structure of the equipment is in safe operating condition. Failure to properly inspect equipment prior to use can cause injury and death
		Electrocution	3	Ensure all equipment is inspected prior to use. If any electrical components (ie. cords, plug, housing, etc.) are damaged the equipment must be tagged and taken out of service. Never use electrical tape to cover electrical damage. Repairs must be done by authorized personnel or a repair facility to return the equipment to the original manufactured condition Use Emergency Stop Buttons in the event that any malfunction is observed during operation
		Pinch/Crush Hazard	3	Operate all equipment as per manufacturer instruction and applicable legislation for their intended use only. Wear appropriate PPE (ie. gloves, etc.) at all times. Identify all pinch and crush points prior to use and keep all body parts clear. Refer to manufactures manuals, Safe Work Practices, Safe Job Procedures, and Hazard Assessments to determine the correct PPE to use. Use Emergency Stop Buttons in the event that any malfunction is observed during operation

		Eye Injury	2	Operate all equipment as per manufacturer instruction and applicable legislation for their intended use only. Wear appropriate eye protection at all times. Refer to manufactures manuals, Safe Work Practices, Safe Job Procedures, and Hazard Assessments to determine the correct type of eye protection to use.
		Hearing Damage	2	Many types of equipment operate at high noise levels. Any equipment that operates at or above 85db requires the use of hearing protection. Refer to the Noise Exposure Management section of the Company Safety Manual for further guidance on minimizing noise exposure.
	Install Mechanical Systems and Components	Improper Procedure/Setup	3	All Personnel must be trained and deemed competent to use tools and equipment. It is the responsibility of Company Supervisors to verify that personnel are able to utilize the required equipment independently. Refer to the manufacturer manuals, Safe Work Practices, Safe Job Procedures, and applicable legislation for guidance on the proper procedure to use a piece of equipment.
		Pinch/Crush Hazard	3	Operate all tools and equipment as per manufacturer instruction and applicable legislation for their intended use only. Wear appropriate PPE (ie. gloves, etc.) at all times. Identify all pinch and crush points prior to install and keep all body parts clear. Never walk or stand under live loads Refer to manufactures manuals, Safe Work Practices, Safe Job Procedures, and Hazard Assessments to determine the correct PPE to use.
		Eye Injury	2	Operate all tools and equipment as per manufacturer instruction and applicable legislation for their intended use only. Wear appropriate eye protection at all times. Refer to manufactures manuals, Safe Work Practices, Safe Job Procedures, and Hazard Assessments to determine the correct type of eye protection to use.

		Hearing Damage	2	Many types of tools and equipment operate at high noise levels. Any equipment that operates at or above 85db requires the use of hearing protection. Refer to the Noise Exposure Management section of the Company Safety Manual for further guidance on minimizing noise exposure.
		Cuts/Laceration	2	Operate all tools and equipment as per manufacturer instruction and applicable legislation for their intended use only. Wear appropriate PPE (ie. gloves, sleeves, aprons, etc.) at all times. Refer to manufactures manuals, Safe Work Practices, Safe Job Procedures, and Hazard Assessments to determine the correct PPE to use.
	Working with Chemicals	Exposure to Chemicals	2	Train in WHMIS 2015. Ensure all SDS Sheets are up to date and readily available and ensure SDS specific to the chemicals being used have been reviewed by all personnel involved with the task. Follow applicable Safe Work Practices and Safe Job Procedures written for the task being conducted. Refer to the Company Safety Manual and any Site-Specific Procedures Ensure that the chemicals being used are noted in the FLHA. Ensure all hazards applicable to the chemicals being used are listed in the FLHA. Ensure all specific controls for the chemicals being used are listed in the FLHA. Wear all applicable PPE for the Chemicals being used.

		Poisoning	2	Follow all Manufacturer Instructions, Legislation, Safe Work Practices, and Safe Job Procedures when handling chemicals. Wear appropriate PPE (ie. gloves, apron, googles/face shield, etc.) at all times. Refer to Manufacturer Instructions, SDS, Legislation, Safe Work Practices, and Safe Job Procedures to identify the required PPE for handling a particular chemical. Before Smoking, eating, drinking, touching you face or other body parts ensure you have thoroughly washed first.
		Eye Injury	2	Handle all chemicals in a careful and attentive manner. Wear appropriate eye protection at all times. Refer to manufactures manuals, Safe Work Practices, Safe Job Procedures, and Hazard Assessments to determine the correct type of eye protection to use.

Risk Matrix			
	Probability		
Consequence	**Likely**	**Moderate**	**Unlikely**
H(High)	**3**	**3**	**2**
M(Moderate)	**2**	**2**	**1**
L(Low)	1	1	1

Potential Risk	
1	Potential incident which has the potential to cause minor damage to the environment or persons that would require first aid.
2	Potential Temporary Disability or Minor Structural Damage or Potential Incident that could impact on environmental elements (natural or built) that can be contained and remediated with no long-term effect.
3	Potential Death, Permanent Disability or Major Structural Damage or Potential Incident resulting in permanent or significant detrimental impact on the natural or built environment.

February 1, 2024	Troy Booth	2024 JWHSC Membership
Review Date	**FHA Leader**	**FHA Participants**
Julie Berdin, President		Julie Berdin
Approved By		**Approval Signature**

New Project Formal Hazard Assessment

TASK/ACTIVITY/ CONDITION	HAZARDS	RISK LEVEL	CONTROL MEASURES
Site Access and Egress	Slips/Trips	2	Use caution and be aware of all obstacles CSA or ANSI approved 6" ankle height safety boots are required. Boots must be in good condition Ensure all material is kept clear of access/egress routes and all debris is cleaned up on an ongoing basis
Manual Material Handling	Strain/Sprain	2	Ensure proper lifting techniques are always used Use team lifting for heavy and/or awkward material Whenever possible utilize mechanical lifting or transportation devices. All such devices must be visually inspected prior to each use
	Slips/Trips	2	Inspect and clear all routes prior to moving material
Unloading Trucks	Congestion of the Jobsite	1	Only unload trucks in designated areas or if required to unload in a localized area ensure that the area is clear. A control zone may be required to ensure a safe unloading area
	Strain/Sprain	2	Ensure proper lifting techniques are always used Use team lifting for heavy and/or awkward material Whenever possible utilize mechanical lifting devices
	Slips/Trips	2	Inspect the area prior to unloading and remove all tripping hazards
	Equipment/Material Damage	1	Verify weights and sizes of equipment/material prior to unloading so that the correct technique and/or equipment can be chosen for unloading. Ensure the area is clear and sufficient area is available to store equipment/material until it is moved to its permanent location
Hoisting	Falling Material (Personal Injury and Equipment/Material Damage)	2	Inspect all hoisting equipment prior to use Ensure all equipment is setup and secured as per manufacture specification Any slings, chains, or straps to be used must be secured to appropriate lift points
Crane Lifts	Falling Material (Personal Injury and Equipment/Material Damage	3	Inspect all rigging equipment prior to use Ensure all equipment is setup and secured as per manufacture specification All rigging equipment to be used must be secured to appropriate lift points All rigging is to be setup by a certified rigger only.
Welding/Cutting Soldering	Fire	2	All flammable materials must be removed from the work area or protected from welding and cutting activities A fire extinguisher
	Burns	2	Appropriate PPE must be worn, including but not limited to; gloves, long sleeves, and welder's apron (for welders) A first aid kit with burn pads or cool running water should be on hand in the work area to reduce burn severity
	Eye Damage	2	Welders must wear approved welding helmets All fitters must wear UV protection safety glasses For cutting operations dark tinted cutting glasses must be worn

	Fire	2	All flammable materials must be removed from the work area or protected from soldering activities A fire extinguisher must be at the work location for the duration of the task A minimum 30minute fire watch must be conducted after hot work is completed
	Burns	2	Appropriate PPE must be worn, including but not limited to; gloves A first aid kit with burn pads or cool running water should be on hand in the work area to reduce burn severity
Extension Cord Use	Electrical Shock	2	Inspect all cords prior to use. Any cords that are damaged must be tagged and removed from service Every effort must be made to avoid running cords along the ground, they should be strung up along walls and ceilings if possible. If the cord is running through a wet or potentially wet area, they must be secured to ensure they will not contact the water
Working with Live Equipment (Commissioning/Testing)	Electrical Shock	3	Power must be locked out according to established lock out procedures A test to ensure the power is disabled must be conducted Ensure that only the person working on the equipment has the ability to remove the lock out.
Working with Pressurized Systems	Explosive Release	2	Ensure all valves are secured from opening. Handle removal is highly recommended. Ensure that all blinds are of sufficient strength for the system pressure and are securely installed
	Compressed Air (Air Embolism)	3	Under no circumstances can a person's body or part thereof be exposed to compressed air.
Controlled Product Use	Fumes. Spray, Burns, Biological Reaction	2	All personnel are required to have Arpi's specific WHIMIS training prior to starting work MSDS sheets for any controlled product must be reviewed prior to the product being used All PPE requirements noted in the MSDS must be followed. If PPE is not available then work cannot progress
	Spills/Environmental Release	1	All personnel are required to have Arpi's specific WHIMIS training prior to starting work MSDS sheets for any controlled product must be reviewed prior to the product being used Environmental limits and spill cleanup procedures must be known and all required equipment must be in place prior to the use of the product
Excavations/Trenching	Fall Hazard	2	When working around an excavation or trench workers must be aware of boundaries. A control zone must be set up around any areas where there is a potential to fall 3 or more meters or if there is an unusual potential for injury during a fall less than 3 meters If working within 2 meters of a potential fall hazard a fall restraint or fall arrest system must be utilized. All workers must have valid fall protection training
	Crushing	2	All excavations and trenches must be constructed as per OH&S Code. No worker is authorized to enter if they are not.

Leading Edges/Floor Openings	Fall Hazard	3	Workers must maintain a minimum 2 meters distance from all leading edges and floor openings where a potential to fall 3 or more meters exists. This boundary must be clearly marked If work must be done within 3 meters: A guard rail must be installed at the edge, or The opening must be securely covered. The cover must be constructed to withstand any force that will be applied to it, or Workers must have valid fall protection training and utilize a fall restraint or fall arrest system
Ladder/Scaffold Work	Fall Hazard	2	All ladders/scaffolds must be setup as per manufactures instructions Weight limits on ladders/scaffolds are not to be exceeded Material is not to be carried up a ladder/scaffolds Workers are not to ascend past the top two rungs of the ladder Workers must be trained and utilize a fall protection system if they will be working on a ladder at a height of 3 meters or more for a duration over 15 minutes If workers are working on a scaffold at a height of 3 meters a guardrail must be in place. If the guardrail cannot be installed then workers must be trained and utilize a fall protection system
Aerial Platform Work	Fall Hazard	2	All workers operating an aerial platform must have valid operating certification for the equipment Fall protection must be worn at all times during operation of the platform Manufactures operating instructions must be followed at all times A pre-use inspection must be conducted by the operator before each use of the equipment
Hand and Power Tool Use	Personal Injury (cuts, scrapes, pinch points, electrical shock)	2	All tools must be inspected before use Tools are to be used in the manner that they were designed to be used Any tools that are damaged must be tagged out of service Any tools that are missing guards or other parts must be tagged out of service
Working Around Heavy Equipment	Personal Injury (crushing, cuts, scrapes, pinch points, strike by object)	2	When working in conjunction with an equipment operator communication must be maintained at all times. It is the responsibility of the worker on the ground to stay clear of all blind spots. When crossing the path of any heavy equipment it is essential that the operator is made aware of where the worker is and is going. **Eye contact is not sufficient**, workers must get the operators attention wave and point where they would like to go. Only once the operator has visually or verbally consented can the worker cross.
Working in a High Noise Environment	Hearing Damage	2	When workers are exposed to noise at a level of 85dB or higher hearing protection must be worn. **Rule of Thumb:** if you must raise your voice for them to hear you, hearing protection is required

Working Around Other Trades	Congestion, Unknown Hazards Created by Other Workers	2	Coordinate your work. Always be aware of where other workers are and avoid working in the same area. If workers must work in the same area it must be ensured that effective communication and awareness is maintained between the involved trades
Driving	Personal Injury/Equipment Damage	2	Always use defensive driving practices. Obey all traffic laws. Ensure that the driver has a valid operator's license prior to operating a vehicle. When driving on a jobsite a low drive speed must be ensured. Extra caution must be used to avoid a collision with personnel and operating equipment
Toilet Use	Sanitary Conditions	1	Maintain all provided toilets in good condition. Report any unsanitary conditions to your supervisor immediately.
Wet Weather	Slips, Trips, Falls, Reduced Visibility	2	Use caution when moving through wet slippery areas. Ensure proper footing. If wet weather causes flooding in the work area immediately stop work and report to your supervisor
Snowy Weather	Slips, Trips Falls, Reduced Visibility	2	Use caution when moving through snow covered slippery areas. Be aware of possible hazards hidden under the snow
Foggy Weather	Slips, Trips Falls, Reduced Visibility	2	Use caution when working in foggy conditions. Slow down and take time to ensure you are aware of hazards that may be masked by the fog
Hot Temperatures	Dehydration, Sun Burn, Heat Stroke	2	Drink lots of water. Avoid working in direct sunlight and cover exposed skin when possible. Wear sunscreen. Take cool down breaks as needed
Cold Temperatures	Distraction, Frost Bite	2	Dress appropriately for the temperature. Keep all skin covered. Take warm up breaks as needed. If you experience frost bite do not rub the skin, place it on a warm surface

Risk Matrix			
	Probability		
Consequence	**Likely**	**Moderate**	**Unlikely**
H(High)	**3**	**3**	**2**
M(Moderate)	**2**	**2**	**1**
L(Low)	1	1	1

Potential Risk	
1	Potential incident which has the potential to cause minor damage to the environment or persons that would require first aid.
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3	Potential Death, Permanent Disability or Major Structural Damage or Potential Incident resulting in permanent or significant detrimental impact on the natural or built environment.

February 1, 2024	Troy Booth	2024 JWHSC Membership
Review Date	**FHA Leader**	**FHA Participants**
Julie Berdin, President		Julie Berdin
Approved By		**Approval Signature**

Office Formal Hazard Assessment

TASK/ACTIVITY/ CONDITION	HAZARDS	RISK LEVEL	CONTROL MEASURES
Stair Usage	Trips, slips, and falls	2	No running on stairs. Take one step at a time. Utilize the handrail
File and Office Equipment Storage	Impeded emergency evacuation, Trips, slips, and falls Falling objects, housekeeping	2	Do not store items in egress routes to ensure readily available access to emergency exits. Keep all stored items neat and tidy. Do not overload shelves. Remove items to lighten the load on shelves
Use of Office Equipment	Physical Harm Electrical Shock	1	Ensure equipment is in good condition and plugged in properly. Follow all operator instructions
Food Storage	Health and comfort of workers	1	Keep perishable items in the refrigerator and dispose of them prior to their expiry date
Conducting Desk Work	Ergonomic Hazards	1	Take micro-breaks for stretching. Follow ergonomic as per SWP-44 in the safety manual
Movement of files and equipment	Sprains and Strains. Slips, Trips, and Falls	2	Use proper lifting techniques and lift assist devices Stretch before lifting Inspect the area before you start and remove any trip hazards
Cleaning	Chemical Hazards	1	Use PPE as per SDS Follow all manufacture instructions
Evacuation	Burns and other injuries	3	Review Evacuation Plan and adhere to all requirements.
Wildlife on Property	Animal Attack	2	If you see any potentially dangerous wildlife do not approach and allow it to leave the area on it's own. If any aggressive behavior is observed report to your supervisor immediately to have all staff removed from the area and animal control will be called.
Toilet Use	Sanitary Conditions	1	Maintain all provided toilets in good condition. Report any unsanitary conditions to your supervisor immediately.
Wet/Snowy/Foggy Weather	Slips, Trips, Falls, Reduced Visibility	2	Use caution when moving through slippery areas. Ensure proper footing. If wet weather causes flooding in the work area immediately stop work and report to your supervisor Be aware of possible hazards hidden under the snow Slow down and take time to ensure you are aware of hazards that may be masked by the fog
Hot Temperatures	Dehydration, Sun Burn, Heat Stroke	2	Drink lots of water. Avoid working in direct sunlight and cover exposed skin when possible. Wear sunscreen. Take cool down breaks as needed
Cold Temperatures	Distraction, Frost Bite	2	Dress appropriately for the temperature. Keep all skin covered. Take warm up breaks as needed. If you experience frost bite do not rub the skin, place it on a warm surface

Risk Matrix			
	Probability		
Consequence	**Likely**	**Moderate**	**Unlikely**
H(High)	**3**	**3**	**2**
M(Moderate)	**2**	**2**	**1**
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Potential Risk	
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Approved By		**Approval Signature**

Workplace Violence Formal Hazard Assessment

SCENARIO	HAZARDS	RISK LEVEL	CONTROL MEASURES
Dispute Between Workers	Verbal or physical altercation between co-workers	**2**	1. Training and Education: Provide conflict resolution training to all employees to enhance communication and problem-solving skills. 2. Supervision: Increase supervision in areas where tensions are known to arise. 3. Clear Policies: Establish clear policies and procedures for addressing conflicts, including reporting mechanisms and disciplinary actions. 4. Employee Assistance Program (EAP): Offer access to counseling services through an EAP to help employees manage stress and resolve personal conflicts
Aggressive Behavior from Contractors or Subcontractors	Threats or violence from contractors or subcontractors	**2**	2. Conflict Resolution Protocols: Establish a process for resolving disputes through mediation or arbitration to prevent escalation to violence. 3. Security Measures: Implement access control measures and security personnel to monitor entry and prevent unauthorized individuals from entering the site. 4. Communication Channels: Maintain open lines of communication between project managers and contractors to address concerns and grievances promptly.
Disgruntled Current/Former Employees or Individuals	Violence or threats from disgruntled former employees, ex-partners, or individuals with personal grievances against the company	**2**	1. Security Measures: Implement physical security measures such as surveillance cameras, fencing, and controlled access points to deter unauthorized individuals from entering the site. 2. Emergency Response Plan: Develop and communicate an emergency response plan outlining procedures for responding to threats or violent incidents, including evacuation routes and assembly points.

Robbery or Theft	Armed robbery or theft targeting materials, equipment, or workers' personal belongings	**3**	1. Site Security: Utilize mobile patrols, use preventative barriers (barb/razor wire fence), setup security camera systems, or alarm systems to monitor the site and deter criminal activity. 2. Secure Storage: Store valuable materials and equipment in locked containers or secure areas when not in use. 3. Lighting: Ensure adequate lighting throughout the site to minimize hiding spots for potential intruders and improve visibility during nighttime hours. 4. Inventory Management: Implement inventory control measures such as asset tagging and regular audits to track the movement of materials and identify any discrepancies or losses. 5. Communication: Implement a check-in procedure for service technicians to communicate their location and status with dispatch or supervisors throughout the service call. 6. Emergency Response Plan: Develop and communicate an emergency response plan for technicians to follow in the event of a robbery or threat, including procedures for contacting authorities and seeking assistance.
Community Protest or Demonstrations	Confrontations between construction workers and members of the community protesting against the project	**1**	1. Community Engagement: Maintain open lines of communication with local residents and community leaders to address concerns and mitigate potential conflicts. 2. Public Relations: Provide regular updates to the community about the project's progress and address misinformation or misunderstandings. 3. Security Measures: Coordinate with local law enforcement agencies to ensure adequate security measures are in place during demonstrations or protests. 4. Conflict Resolution: Designate trained personnel to serve as liaisons between construction crews and protesters to facilitate peaceful communication and resolve disputes.
Confrontation with Aggressive or Hostile Customers	Verbal or physical altercation initiated by aggressive or hostile customers	**2**	1. Customer Screening: Implement a screening process to identify potential high-risk customers based on past behavior or complaints. 3. De-Escalation Training: Provide training to service technicians on de-escalation techniques to defuse tense situations and manage confrontational behavior. 4. Emergency Response Protocol: Develop and communicate a protocol for responding to threats or violence, including procedures for contacting law enforcement and seeking assistance

Intoxicated or Impaired Customers	Confrontation or unpredictable behavior from intoxicated or impaired customers	**3**	1. Observation and Assessment: Train technicians to recognize signs of intoxication or impairment in customers and respond accordingly, including notifying supervisors or contacting authorities if necessary. 2. Safe Exit Strategy: Develop a safe exit strategy for technicians to leave the premises quickly and safely in the event of escalating behavior from an intoxicated customer. 3. Escalation Protocol: Establish a protocol for escalating concerns about intoxicated or impaired customers to management or law enforcement for further intervention. 4. Refusal of Service: Empower technicians to refuse service or reschedule appointments if they determine that the working conditions pose an unreasonable risk to their safety.
Workplace Harassment	Emotional distress, psychological harm, or damage to morale and productivity	**2**	1. Anti-Harassment Policy: Establish a zero-tolerance policy for harassment and bullying behavior in the workplace. 2. Training and Education: Provide training to employees on recognizing and preventing harassment, including bystander intervention techniques. 3. Anonymous Reporting Mechanisms: Implement anonymous reporting mechanisms, such as hotlines or online portals, to encourage employees to report incidents of harassment without fear of retaliation. 4. Investigation and Action: Investigate all reports of harassment promptly and take appropriate disciplinary action against perpetrators, up to and including termination of employment.

Risk Matrix			
	Probability		
Consequence	**Likely**	**Moderate**	**Unlikely**
H(High)	**3**	**3**	**2**
M(Moderate)	**2**	**2**	**1**
L(Low)	1	1	1

Potential Risk	
1	Potential incident which has the potential to cause minor damage to the environment or persons that would require first aid.
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Review Date	**FHA Leader**	**FHA Participants**
Julie Berdin, President		Julie Berdin
Approved By		**Approval Signature**

2.4 FIELD LEVEL HAZARD ASSESSMENT INSTRUCTIONS

INTRODUCTION

A Field Level Hazard Assessment (FLHA) is to be conducted;

- When work is at temporary/mobile worksites
- When workers are conducting activities at a worksite not owned by their employer
- When a new activity starts at a worksite
- Before a job or task begins
- When changes occur at a worksite
- At minimum daily for all field sites and weekly for all shop/yard facilities

Even when conducting similar tasks from day to day it is absolutely required that the assessment is conducted with a fresh set of eyes each time. It can never be assumed that the conditions and hazards have not changed.

The purpose of this assessment is to make all workers affected by a particular task aware of all the actual and potential hazards associated with a task and worksite conditions. By being aware of hazards prior to starting a task, controls can be developed and implemented to mitigate the chance of a workplace incident or injury from occurring.

CONDUCTING THE FIELD LEVEL HAZARD ASSESSMENT

Please refer to the attached sample FLHA for sections referred to in the following instructions.

1. All information regarding the project and location that the task is to be conducted at must be filled in by either a foreman or the designated crew lead.
2. The foreman or crew lead must list all Safe Job Procedures (SJP) and Safe Work Practices (SWP) included in the ARPI'S INDUSTRIES LTD Safety Manual that are associated with this task.
3. The foreman or crew lead in conjunction with all workers on the crew will review the Hazard Control Verification List and answer all the questions by circling either Yes or No.
4. The foreman or crew lead must verify by placing a checkmark in the appropriate boxes that all required permits have been filled out and any required worker training is valid. If the specific permit or training is not listed it must be written in the space provided.
5. The foreman or crew lead in conjunction with all workers on the crew must rank all the applicable hazards in the environmental and ergonomic hazard sections. If a listed hazard is not applicable then N/A must be written in the space provided. For all applicable hazards the following rankings will be used:
   - **1 – Low:** This is a hazard that workers must be aware of but is not likely to cause any injury to workers. This level of hazard does not require any written controls simply awareness of its presence is sufficient.
   - **2 – Moderate:** This is a hazard that is likely to cause minor to moderate injury to workers if it is not controlled. These hazards must be listed in the space provide with a control measure.

- **3 – High:** This is a hazard that is likely to cause severe injury of death to workers if it is not controlled. These hazards must be listed in the space provided with a control measure.

6. The foreman or crew lead must list all tasks that are covered by the FLHA under the heading 'List All Tasks'.
7. The foreman or crew lead must note all the hazards applicable to each individual task and assign a rank for each under the 'Hazards/Rank' heading. All hazards noted in step 5 must be listed here in conjunction with the tasks they are associated with as well as any hazards that are not already included on the form.
8. The foreman or crew lead must note the control measures that will be implemented and used under the heading 'Hazard Controls'. Each hazard noted under the 'Hazards' heading must have a control implemented.
9. All workers on the crew must print and sign their name on the FLHA. By doing so they are acknowledging that they are fully aware of all hazards noted on the FLHA and agree to implement the controls that have been assigned to each hazard.
10. All workers must initial under the heading 'SWP/SJP Understood'. By doing so they are confirming that they are knowledgeable of all the Safe Job Procedures and Safe Work Practices that are noted on the FLHA. If a worker indicates to the foreman or crew lead that they do not understand one or more of the Safe Job Procedures and Safe Work Practices then the applicable Safe Job Procedures and Safe Work Practices must be reviewed with that work.
11. The foreman or crew lead must note any workers that are not fully competent to perform the listed tasks, are new to the crew, or are considered to be a young at-risk worker under the heading 'Any At-Risk Workers'. It must be ensured that all workers listed under this heading are directly supervised by a competent worker or supervisor.
12. A supervisor designated by the Site Superintendent or Project Manager must sign the FLHA under the heading 'Reviewed by Supervisor and all workers are deemed competent for the listed tasks. By signing here, the supervisor is confirming that all the workers noted on the FLHA are adequately qualified, suitably trained, and have sufficient experience to safely perform the tasks listed without supervision or with a minimal degree of supervision. The only workers exempt are those listed in under 'Any At-Risk Workers'. The supervisor is required to observe and check the work of those listed on the FLHA to confirm that they are competent prior to signing the FLHA.
13. All workers are required to initial the FLHA in the appropriate section after returning to work from each scheduled break (i.e. coffee break, lunch, etc…)
14. The two (2) additional signature sections are provided so that management signatures can be applied to the FLHA as per the management review requirements outlined in the Hazard Assessment Policy.

ARPI'S INDUSTRIES LTD. 50 Years of Progress

FIELD LEVEL HAZARD ASSESSMENT

Project: _____

Task Location: _____ 1

Prepared By: _____

Weather Conditions: _____

Date & Time: _____

Any At-Risk Workers

☐ Young Worker ☐ New to Crew

☐ Inexperienced

11

Name	Signature	SWP/SJP Understood	Initial 1st Break	Initial 2nd Break	Initial 3rd Break
9	10				
					13

List all safe job procedures applicable: 2

List all safe work practices applicable:

HAZARD CONTROL VERIFICATION		ALL REQUIRED DOCUMENTATION COMPLETED?	ENVIRONMENTAL HAZARDS
The Scope of Work is Understood?	Yes / No	— Check all that apply —	Hazard Ranking (Note Beside Each Hazard)
Are Site Conditions Likely to Change?	Yes / No	☐ Fall Protection Plan ☐ Hot Work Permit	1 - Low • 2 - Moderate
Required Safety Equipment is Available?	Yes / No	☐ Critical Lift Permit	3 - High • N/A - Not Applicable
Is a Fire Extinguisher Required?	Yes / No	☐ Confined Space Permit and Plan	Rank
Are You Working Alone?	Yes / No	☐ Excavation Permit 4	Work Area Clean
Working Alone Procedure is Understood?	Yes / No	☐ MSDS Reviewed:	Dust / Mist / Fume
Task Location has Been Inspected?	Yes / No	☐ Other: _____	Noise in Area
Understand the Evacuation Plan?	Yes / No	**All Required Training Verified?**	Extreme Temperatures
Material Storage Identified? 3	Yes / No	☐ Fall Awareness ☐ Confined Space	Spill Potential
Waste Disposal Available?	Yes / No	☐ Equipment Operator ☐ Fit Test	Other Workers in Area 5
Stretching Completed?	Yes / No	☐ Other: _____	Sharp Objects
Ladders (Tied Off/Setup Properly)?	Yes / No	Muster Point: _____	Slips / Trips
Barricades & Signs In Place?	Yes / No	Report **ALL INJURIES**	Falling Items
Hole Coverings Identified?	Yes / No		Foreign Bodies in Eyes
Harness / Lanyard Inspected?	Yes / No	STOP & THINK	Others Working Overhead/Below
100% Tie-Off with Harness?	Yes / No	Resume Work / Control Hazards — Look Around & Identify Hazards / Assess Hazards	Lighting Levels Too Low
Tie-Off Points Identified?	Yes / No		Working On/Near Energized Equip.
Tools & Equipment Inspected?	Yes / No		**ERGONOMIC HAZARDS**
Slings Inspected?	Yes / No		Rank
Lockout Required?	Yes / No		Awkward Body Position
All Required PPE Available?	Yes / No		Over Extension
			Prolonged Twisting/Bending Motion
			Working in a Tight Area
			Lift Too Heavy/Awkward to Lift
			Repetitive Motion
			Hands Not in Line of Sight
			Working Above Your Head

All Controls are Implemented Prior to the Start of Tasks: ☐ YES ☐ NO

If NO, the hazard controls must be re-assessed. If there is no way to eliminate the hazards then you can not proceed with work. Contact your immediate supervisor.

List All Tasks	Hazards (Specific to Each Task)	Rank	Hazard Controls
6	7		8

Reviewed by Supervisor and all workers are deemed competent for the listed tasks:

Print: _____ 12 Title: _____

Sign: _____ Date: _____

Reviewed by:

Print: _____ Title: _____ 14

Sign: _____ Date: _____

Reviewed by:

Print: _____ Title: _____

Sign: _____ Date: _____

Revised: April 15, 2013 Revision #13-001

White - Safety Dept. Pink - Prime Contractor Canary - Worker/Site Copy

2.5 FIELD LEVEL HAZARD ASSESSMENT AUDIT FORM

AUDITOR

Name:_____ Title:_____

Signature:_____ Date:_____

	Adequate	Inadequate
Task Description		
Hazard Identification		
Hazard Controls		
All Sections Completed		
All Workers Printed and Signed Their Names		
All Hand Written Portions Are Legible		
A Muster Point is Identified (Commercial Jobsite Applications Only)		
Reviewed and Signed by A Supervisor		

COMMENTS

All items marked as inadequate must be commented on. Any other areas of concern or points worthy of positive recognition must be noted below._____

SECTION THREE: Safe Work Practices

3.1 SAFE WORK PRACTICES INTRODUCTION

INTRODUCTION

Everyone wants to get the job done “right". To most people in the construction industry, that means on time, on budget and to the customers satisfaction. But a major part of getting the job done "right" is also getting it done safely. Getting the job done safely means that people involved follow safe work practices, job procedures, rules and regulations. Rules and regulations are discussed in the next section.

ABOUT SAFE WORK PRACTICES

Safe work practices are written, general guidelines helpful to the performance of a specific type of work that may not always be done in a set way. Safe Work Practices outline the basic Do’s and Don’ts of a potentially critical task.

A critical task is defined as ***“common work occurrences that are required to complete our regular work on a day to day basis.”*** Tasks that are considered to be negligible or pose very little risk when performed using common sense will not be included within the critical task list.

Safe work practices will be reviewed through toolbox meetings and safety meetings. They will be reviewed for relevancy and any required or suggested changes/additions will be forwarded to the Safety Department and Management for consideration.

Safe work practices are ways of controlling hazards and doing jobs with the minimum amount of risk to people and property. To reduce risks, an organization must have a set of safe work practices. These must be developed to fit the particular company. Management must understand and fully support the safe work practices, and ensure that:

- Safe work practices are in writing.
- All employees understand the safe work practices that apply to them.
- Supervisors ensure that all safe work practices are followed.

WHEN TO USE SAFE WORK PRACTICES

- Employee Orientation.
- Proper Job Instruction.
- Planned Job Observation.
- Tool Box Topics.
- Accident/Incident Investigation.
- Skill Training and Coaching.
- Field Level Hazard Assessment.

3.2 SWP CRITICAL TASK LIST

SWP#	SAFE WORK PRACTICES	Last Reviewed				REVIEWED BY
		Date			Risk Level	
		M	D	Y		
1	Toxic Substance Identified	02	01	2024	**3**	JWHSC
2	Solvents and Flammables	02	01	2024	**3**	JWHSC
3	Disease Awareness & Prevention	02	01	2024	**3**	JWHSC
4	First Aid	02	01	2024	**2**	JWHSC
5	Defective Tools	02	01	2024	**3**	JWHSC
6	Compressed Air	02	01	2024	**3**	JWHSC
7	Explosive Actuated Fastening Tools	02	01	2024	**3**	JWHSC
8	Hand Tools	02	01	2024	**3**	JWHSC
9	Portable Arc Welders	02	01	2024	**3**	JWHSC
10	Welding and Cutting	02	01	2024	**3**	JWHSC
11	Oxygen & Acetylene	02	01	2024	**3**	JWHSC
12	Propane and Gas Cylinders	02	01	2024	**3**	JWHSC
13	Tiger Torch Use	02	01	2024	**3**	JWHSC
14	Fire and Use of Fire Extinguishers	02	01	2024	**3**	JWHSC
15	Safeguards	02	01	2024	**2**	JWHSC
16	Cranes & Rigging	02	01	2024	**3**	JWHSC
17	Rigging	02	01	2024	**3**	JWHSC
18	Cranes, Boom Loading & Critical Lifts	02	01	2024	**3**	JWHSC
19	Crane (Mobile) Pre-Job Checklist	02	01	2024	**3**	JWHSC
20	Lifting & Hoisting	02	01	2024	**3**	JWHSC
21	Lifting and Carrying	02	01	2024	**2**	JWHSC
22	Step Ladders	02	01	2024	**2**	JWHSC
23	Portable Ladders	02	01	2024	**2**	JWHSC
24	Scaffolds	02	01	2024	**2**	JWHSC
25	Stairways	02	01	2024	**2**	JWHSC

26	Electrical Safety and Shock Prevention	02	01	2024	**3**	JWHSC
27	Overhead Power Lines	02	01	2024	**3**	JWHSC
28	Lighting – Fixed Temporary	02	01	2024	**2**	JWHSC
29	Mobile Equipment Operation	02	01	2024	**3**	JWHSC
30	Driving	02	01	2024	**3**	JWHSC
31	Genie Hoist Use	02	01	2024	**2**	JWHSC
32	Stationary Machinery	02	01	2024	**2**	JWHSC
33	Bench Grinder	02	01	2024	**2**	JWHSC
34	Power Punch Press	02	01	2024	**2**	JWHSC
35	Rivet Setting Machine	02	01	2024	**2**	JWHSC
36	Slip and Power Rollers	02	01	2024	**2**	JWHSC
37	Trenches & Excavation	02	01	2024	**2**	JWHSC
38	Excavating Near Underground Utilities	02	01	2024	**3**	JWHSC
39	Housekeeping	02	01	2024	**2**	JWHSC
40	Material Movement and Storage	02	01	2024	**2**	JWHSC
41	Exposure to Heat	02	01	2024	**2**	JWHSC
42	Exposure to Cold	02	01	2024	**2**	JWHSC
43	Office Safety	02	01	2024	**1**	JWHSC
44	Office Ergonomics	02	01	2024	**1**	JWHSC
45	Entering a Customer's Property	02	01	2024	**2**	JWHSC
46	Load Securement	02	01	2024	**2**	JWHSC
47	Pre-Coring Inspections	02	01	2024	**2**	JWHSC
48	Laser Level Use	02	01	2024	**2**	JWHSC
49	Lifting Large A/C Condensing Units	02	01	2024	**2**	JWHSC

3.3 SWP-1: TOXIC SUBSTANCE IDENTIFIED

For the purpose of this Safe Work Practice a toxic substance is any material; solid, liquid, or airborne that could have adverse health effects on an exposed worker. Substances of particular concern are; Asbestos, Lead, and Mould. All workers that work in buildings where these toxic substances may be found must be trained on this practice, understand its requirements, and understand the hazards these substances present.

Friable Asbestos is asbestos that can easily be changed into dust, whereas **non-friable** cannot easily be changed into dusty material.

1. If in the course of work, a toxic substance is identified, the Safety Department must be immediately informed as well as the client, of the possible presence of the toxic substance. Testing to confirm the presence of the substance must be completed by a company certified to do so.

2. Workers must not be exposed to airborne concentrations that exceed the occupational exposure limit for any toxic substance.

3. Work will cease in the area until the toxic substance is removed or encapsulated or the material in question is determined to be something other than a toxic substance.

4. Fully authorized contractors must do the encapsulation, removal and disposal of the toxic substance. **This Is the Law.**

5. There are strong penalties for doing this type of work without proper certification. It is a general assumption that asbestos and lead will be present in older buildings that are being renovated or upgraded. Mould can occur in any building that is being constructed and workers must be vigilant.

6. Clients must also be advised of the policy with respect to toxic substances. Occupational Health and Safety regulations state that customers must notify the contractor if they suspect, or are aware of any toxic materials that may be encountered in the course of work.

7. Policy shall be followed in all instances regardless of the type of project. Any questions or concerns should be referred to the Safety Department.

REFERENCES
Please refer to Part 4 and Schedule 1 of the Occupational Health & Safety Act Regulation and Code for further information.

3.4 SWP-2: SOLVENTS AND FLAMMABLES

GENERAL

Cleaning solvents are used in the day-to-day construction work to clean tools and equipment. Special care must be taken to protect the worker from hazards, which may be created from the use of these liquids. Wherever possible, solvents should be non-flammable and non-toxic.

The foreman must be aware of all solvents/flammables that are used on the job, and be sure that all workers who use these materials have been instructed in their proper use and any hazard they pose.

WHEN SOLVENTS/FLAMMABLES USED

1. Use non-flammable solvents for general cleaning.

2. When flammable liquids are used, make sure that no hot work is permitted in the area.

3. Store flammables and solvents in special storage areas.

4. Check toxic hazards of all solvents before use (MSDS).

5. Provide adequate ventilation where all solvents and flammables are being used.

6. Use goggles or face shields to protect the face and eyes from splashes and sprays.

7. Use rubber gloves to protect the hands.

8. Wear protective clothing to prevent contamination of worker's clothes.

9. When a breathing hazard exists, use the appropriate respiratory protection.

10. Ensure that proper containers are used for transportation, storage and field use of solvents/flammables.

11. Where solvents are controlled products, ensure all employees using or in the vicinity of use or storage are trained and certified in the Workplace Hazardous Materials Information System. Ensure all WHMIS requirements are met.

12. Never leave solvents in open tubs or vats - return them to storage drums or tanks.

13. Ensure that proper containers are used for transportation, storage and field use of solvents/flammables.

14. Where solvents are controlled products, ensure all employees using or in the vicinity of

use or storage are trained and certified in the Workplace Hazardous Materials Information System. Ensure WHMIS requirements are met.

TRANSPORTING FLAMMABLE LIQUIDS

1. Gasoline and other highly flammable liquids must not be carried in the passenger compartment of a vehicle. Gasoline and other flammable liquids must be transported in approved containers bearing a proper "dangerous goods" label.

2. Ensure that the containers are not damaged and that the caps or fittings are properly secured after filling.

3. Flammable liquids must be transported in an upright position, bases or otherwise secured to prevent overturning.

4. When transporting gasoline or other flammable liquids in a closed vehicle, place the containers in the rear of the vehicle with adequate ventilation. Remove the containers from the vehicle immediately upon arrival at the destination.

5. Provide an adequate fire extinguisher in the driver's compartment when gasoline or other flammable liquids are transported in the vehicle.

6. Do not use gasoline as a cleaner.

7. Gasoline engines should be shut off and allowed to cool before refueling.

8. Absolutely no smoking or open flame allowed near the area during this time.

Refer to the Occupational Health & Safety Act Regulation & Code, for legislation regarding the handling of Flammable or Explosive products.

Part 4 - Chemical Hazards, Biological Hazards and Harmful Substances

Part 10 – Fire and Explosion Hazards

HAZARDS	RANK	CONTROLS
Burns	2	See above recommendations
Explosions	3	See above recommendations
Asphyxiation	3	Read MSDS and follow PPE recommendations

3.5 SWP-3: DISEASE AWARENESS AND PREVENTION

Disease causing bacteria and viruses are **always** present in sewers. They occur in both liquid sewage and dry sludge or dust coating pipes, ladders, and other surfaces inside sewers. Some of the serious threats to the workers' health are:

- Hepatitis A
- Tetanus
- Polio

Hepatitis A is contracted by the virus entering the mouth. Therefore, it can be completely avoided by following simple hygiene measures: washing hands before eating; keeping protective clothing laundered; and keeping the equipment clean. Immunization prevents tetanus and polio

Cuts and abrasions should be covered by dressings to minimize the chance of infection by sewer organisms.

AIDS IN THE WORKPLACE

AIDS (Acquired Immune Deficiency Syndrome) is caused by a virus which is found in blood, semen and other body fluids of an infected person. The virus is spread through sexual contact with an infected person, sharing contaminated needles or syringes or through the transfusion of infected blood or blood products. The virus has been found in tears and saliva although there are no reported cases of anyone coming infected from these fluids.

In Canada, only a few cases of probable occupational HIV infection have been reported. Nevertheless, where ever there is the possibility of contact with blood in the workplace, workers should take precautions to prevent contact with the skin, eyes and mucous membranes (i.e.: mouth).

The Laboratory Center for Disease Control recommends using "universal precautions" to prevent the spread of AIDS in the workplace. This approach stresses that workers assume that all people are potentially infectious for the AIDS virus. "Universal precautions" involves using protective clothing such as gloves, gowns or aprons, masks and protective eyewear when dealing with people's blood and other blood contaminated body fluids such as semen and vaginal secretions. "Universal precautions" do not apply to faces, nasal secretions, sputum, swept, tears, urine and vomit, unless they contain visible blood. They also do not apply to saliva except in dentistry where saliva is likely to be contaminated with blood.

Hand washing after contact with blood, blood-contaminated body fluids, and washing or disposing of soiled items is also recommended to reduce the risk of infection.

3.6 SWP-4: FIRST AID

It is essential that all ARPI'S INDUSTRIES LTD personnel have access to first aid supplies and services at all times while working. It is the intent of this safe work practice to outline how this will be accomplished.

- It is required that at minimum that the OH&S requirements for first aid are met. These requirements are as follows:

OFFICE

# of WORKERS at WORK SITE/ per SHIFT	FIRST AID REQUIREMENTS
1	• Type P First Aid Kit
2-9	• No. 1 First Aid Kit
10-49	• 1 Emergency First Aider • No. 1 First Aid Kit
50-99	• 1 Emergency First Aider • 1 Standard First Aider • No. 2 First Aid Kit
100-199	• 1 Emergency First Aider • 2 Standard First Aiders • No. 3 First Aid Kit • Designated Area for First Aid Services
200+	• 1 Emergency First Aider • 2 Standard First Aiders • 1 Standard First Aider for each additional increment of 1 to 100 workers • No. 3 First Aid Kit • Designated Area for First Aid Services

SHOP AND JOBSITES WITHIN 20 MINUTES OF A MEDICAL FACILITY

# of WORKERS at WORK SITE/ per SHIFT	FIRST AID REQUIREMENTS
1	• Type P First Aid Kit
2-4	• 1 Emergency First Aider • No. 1 First Aid Kit
5-9	• 1 Emergency First Aider • 1 Standard First Aider • No. 2 First Aid Kit
10-19	• 1 Emergency First Aider • 1 Standard First Aider • No. 2 First Aid Kit • 3 blankets
20-49	• 2 Emergency First Aiders • 1 Standard First Aider • No. 2 First Aid Kit • 3 blankets
50-99	• 2 Emergency First Aiders • 2 Standard First Aiders • No. 3 First Aid Kit • 3 blankets
100-199	• 2 Emergency First Aiders • 2 Standard First Aiders • 1 Advanced First Aider • First Aid Room
200+	• 2 Emergency First Aiders • 2 Standard First Aiders • 1 Nurse or 1 EMT-P • 1 Standard First Aider for each additional increment of 1 to 100 workers • First Aid Room

JOBSITES GREATER THAN 20 MINUTES TO A MEDICAL FACILITY

# of WORKERS at WORK SITE/ per SHIFT	FIRST AID REQUIREMENTS (20-40 Min to Facility)	FIRST AID REQUIREMENTS (+40 Min to Facility)
1	• Type P First Aid Kit	• Type P First Aid Kit
2-4	• 1 Standard First Aider • No. 2 First Aid Kit • 3 blankets	• 1 Standard First Aider • No. 2 First Aid Kit • 3 blankets
5-9	• 2 Standard First Aiders • No. 2 First Aid Kit • 3 blankets	• 2 Standard First Aiders • No. 2 First Aid Kit • 3 blankets
10-19	• 2 Standard First Aiders • No. 3 First Aid Kit • 3 blankets, stretcher, splints	• 2 Standard First Aiders • No. 3 First Aid Kit • 3 blankets, stretcher, splints
20-49	• 3 Standard First Aiders • No. 3 First Aid Kit • 3 blankets, stretcher, splints	• 3 Standard First Aiders • No. 3 First Aid Kit • 3 blankets, stretcher, splints
50-99	• 2 Emergency First Aiders • 3 Standard First Aiders • No. 3 First Aid Kit • 3 blankets, stretcher, splints	• Standard First Aiders • 1 Advanced First Aider • No. 3 First Aid Kit • 3 blankets, stretcher, splints
100-199	• Standard First Aiders • 1 Advanced First Aider • First Aid Room	• Standard First Aiders • 1 Advanced First Aider • First Aid Room
200+	• Standard First Aiders • 1 Nurse or 1 EMT-P • 1 Standard First Aider for each additional increment of 1 to 100 workers	• Standard First Aiders • 1 Advanced First Aider • 1 Nurse or 1 EMT-P • 1 Standard First Aider for each additional increment of 1 to 100 workers • First Aid Room

- All personnel designated as first aiders must be trained and certified by an authorized and certified training provider (i.e. Red Cross, St. John's Ambulance).

- When ARPI'S INDUSTRIES LTD is operating as the prime contractor on a jobsite the number of workers used to determine the first aid requirements for a jobsite must include the total number of workers from all trades.
- If there are more than three (3) workers at a jobsite and a worker requires transportation to a medical facility it must be ensured that a first aider is available to accompany the worker during transport. The operator of the transport vehicle cannot be considered the accompanying first aider.
- All jobsites must maintain a current list of first aiders at the jobsite and post it in a conspicuous place (i.e. Job Trailer/Office, Lunchroom, etc.).
- All injuries requiring first aid must be reported to a supervisor without delay.
- All injuries requiring first aid must be documented and submitted to the Safety Department.

3.7 SWP-5: DEFECTIVE TOOLS

Defective tools can cause serious and painful injuries. If the tool is defective in any way whatsoever, ***DO NOT USE IT.***

Be aware of problems like:

- Chisels and wedges with mushroom heads.
- Split or cracked handles.
- Chipped or broken drill bits.
- Wrenches with worn-out jaws.
- Tools which are not complete, such as files without handles.

To ensure safe use of hand tools, remember:

- Never use a defective tool.
- Double check all tools prior to use.
- Insure defective tools are repaired.

Note: Gasoline powered or electrical power tools, requires skill and complete attention on the part of the user even when they are in good condition. Don't use power tools when they are defective in any way. Watch for problems like:

- Broken or missing guards.
- Insufficient or improper grounding due to damage on double insulated cords.
- No ground wire (on plug) or cords of standard tools.
- The on/off switch not in good working order.
- Tool blade is cracked.
- The wrong grinder wheel is being used.
- Guard has been wedged back or removed on a power saw.

3.8 SWP-6: COMPRESSED AIR

Air power tools in construction range from nail guns to jack hammers. If not treated with respect, these tools can become a dangerous Safety Hazard.

- Compressed air and compression air tools shall be used with caution.
- Pneumatic tools shall be operated only by competent persons who have been trained in their use.
- Compressed air must not be used for cleaning purposes to blow debris or to clear dirt from any workers clothing, except where reduced to less than 30psi and then only with effective chip guarding and PPE.
- Pneumatic tools shall never be pointed at another person.
- All hose connectors must be of the quick disconnect pressure release type with a “safety chain/cable”.
- Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming accidentally disconnected.
- Safety clips or retainers shall be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.
- Before making adjustments or changing air tools (unless equipped with quick change connectors) the air shall be shut off at the air supply valve ahead of the hose, and the hose bled at the tool before breaking the connection.
- A proper pressure regulator and relief device must be in the system to ensure the correct pressures are maintained.
- Manufacture’s safe operating pressure for hose, pipes, valves, filters, and fittings shall not be exceeded.
- The correct air supply hoses must be used for the tool/equipment being used.
- Regular checks must be done for cuts, bulges, or other damaged and defective hoses repaired or replaced.
- All hoses exceeding ½ inch inside diameter shall have a safety device at the source of air supply or branch line to reduce pressure in the case of hose failure.
- The use of hoses for hoisting or lowering tools shall not be permitted.
- The use of metal–reinforced hose shall be avoided near energized equipment. When this type of hose must be used, proper clearances shall be maintained.
- Eye protection, foot protection and other protective devices shall be worn when their use could reduce the possibility of injury.
- During operations using compressed air tools, be sure other workers in the area are made aware of or have restricted access to the hazard area.
- The equipment must be properly maintained according to the manufacturer’s requirements.

- Follow manufacturer's general instructions and comply with legislated safety requirements.

HAZARDS	RANK	CONTROLS
Hearing Damage	2	Wear appropriate hearing protection
Eye Damage	2	Wear safety glasses

3.9 SWP-7: EXPLOSIVE ACTUATED FASTENING TOOLS

The hazards encountered with these tools are similar to firearms. Instructions and recommendations of the manufacture shall be strictly followed regarding operation, application and maintenance.

- Permit only trained competent and authorized persons who are familiar with the proper use, safe operation and regulations governing the use of the tool to operate explosive actuated fastening tools.
- Use CSA/ANSI standard "Safety Code for Explosive Actuated Tools" as a guide for safe operation and maintenance of the tool.
- Wear safety glasses, a face shield and a hard hat.
- Wear hearing protection, particularly when firing into steel or in a confined space.
- Brace yourself at all times when working on ladders or scaffolds to maintain good balance.
- Keep tool pointed in a safe direction, never at any person.
- Do not carry loaded tools from job to job.

CARE AND SERVICING OF TOOLS

- Clean and maintain tools in accordance with the manufacturer's instructions.
- Check tools prior to use to ensure they are in good working order.
- Tag and Remove defective tools from service until repaired.
- Store tools and cartridges in a locked container when not in use.

USE OF TOOLS

- Use the tool at the right angles to the work surface.
- Check the chamber before using to see if the barrel is clean and free from any obstructions and the protective shield is properly attached.
- Do not use the tool where flammable or explosive vapors, dust or other such substances are present.
- Do not load tool until immediately before use.
- Do not leave loaded tool unattended.
- Do not place your hand over the front (muzzle) end of a loaded tool.

USE OF PROJECTILE

- USE ONLY FASTENERS (nails, studs, etc.) recommended by the tool manufacturer.

ENSURE that base material has no holes or openings and is of sufficient consistency that a projectile would not pass right through.

- DO NOT FORCE a fastener into a working surface that is harder than the fastener being used. If the base material is unknown, use a hand hammer to drive the projectile, using it as a center punch.

USE OF CHARGE CARTRIDGES

- USE only cartridges recommended by the tool manufacturer.
- CHECK that the color of the cartridge is appropriate for work being done. Charge cartridges are colour-coded for strength.
- MAKE the first trial firing with the weakest of lowest strength charge cartridge.
- PROVIDE adequate ventilation is confined spaces where explosive actuated tools are used.
- HOLD the tool in firing position for no less than 30 seconds when a tool misfires. Repeat procedure again. Keep the tool pointed in a direction that will not cause injuries. Unload the spent cartridge with the utmost caution.
- EXERCISE caution when using tools near live electrical circuits. Ensure fastenings do not penetrate live circuits that are buried or hidden in the base material.
- KEEP cartridges in a lock up when not in use.
- DO NOT ATTEMPT to force a cartridge into a tool.
- DO NOT DISCARD unused cartridges carelessly.
- DO NOT CARRY cartridges loose or in a pocket. Carry them in the manufacturer's package or in approved containers.

HAZARDS	RANK	CONTROLS
Eye, Face and Hand Lacerations	2	Wear goggles, face shield, and gloves
Hearing Damage	2	Wear hearing protection

3.10 SWP-8: HAND TOOLS

Care and caution should be exercised when using all hand tools regardless if they are motorized or not. Instructions and recommendations of the manufacture shall be strictly followed regarding operation, application and maintenance.

- Permit only trained competent and authorized persons who are familiar with the proper use, safe operation and regulations governing the use of the tool to operate hand tools.
- Wear safety glasses at all times when operating a hand tool. For those tools that can cause a substantial amount of particle spray a face shield should be used. Those tools include and are not limited to grinders and chop saws. At all times a hard hat should also be worn.
- If recommended by the manufacturer hearing protection should also be used.
- Brace yourself at all times when working on ladders or scaffolds to maintain good balance.

CARE AND SERVICING OF TOOLS

- Clean and maintain tools in accordance with the manufacturer's instructions.
- Check tools prior to use to ensure they are in good working order.
- Tag and Remove defective tools from service until repaired.
- Store and or secure all hand tools when not in use.

USE OF TOOLS

- Use hand tools for the job they were intended for.
- Visually inspect tools for damage. If you feel that a tool is damaged and unsafe for use tag it out and have it returned to the shop for testing and repair.
- As part of the inspection on tools with cords, you should follow the same practice as an inspection of a power cord. Do not use tools with frayed or damaged cords.
- Care should be taken when storing tools in gang boxes or tool cribs.
- If you are unsure of the safe and proper use of any hand tool you should refer to the manufacturer's guidelines for use. If these are unavailable you should consult with a supervisor on the methods of safe use.

HAZARDS	RANK	CONTROLS
Eye, Face and Hand Lacerations	2	Wear goggles, possibly a face shield, and gloves
Hearing Damage	2	Where applicable wear hearing protection

3.11 SWP-9: PORTABLE ARC WELDERS

GENERAL
Portable arc welders are a piece of equipment that has to be treated like a vehicle. Do not operate them indoors unless adequate ventilation and clearances have been met.

1. Be sure the machine is firmly attached to the transporting unit.
2. Check all fluid levels, water, oil and gas to be sure they are at acceptable levels for operation.
3. When fueling, DO NOT "top off" the gas tank. Gasoline expands as the outside temperature rises, this may result in seepage and an ensuing fire.
4. Do not fuel the machine while it is running.
5. Be sure the radiator and gas caps are in proper working order and securely attached.
6. Do a "walk around" to check for damage and obvious leaks.
7. Any repairs should be done by qualified mechanics or technicians.
8. Make sure all cables are wound securely when transporting.
9. Ensure the side covers are kept closed to protect the machine from any damage from external objects and outside weather, as well as to protect the operator and others from the moving parts of the machine.

Please refer to the Occupational Health & Safety Act, Regulation & Code.
Part 10 – Fire & Explosion Hazards and
Part 18 – Personal Protective Equipment

HAZARDS	RANK	CONTROLS
CO Poisoning (Exhaust Fume)	3	Outdoor use only
Flash Burns (Arc Radiation)	2	Wear protective eyewear
Burns	2	Observe the above safe work practices

3.12 SWP-10: WELDING AND CUTTING

This policy will apply to all employees or contractors carrying out or assisting in the above mentioned type of work on any equipment on any ARPI'S INDUSTRIES LTD properties or projects. The Foreman is charged with the direct responsibility for ensuring that this policy is complied with by both employees and contractors.

PERSONAL PROTECTION
Personnel will be equipped with safety eye glasses, aprons, gloves, gauntlet gloves, arm protection, helmets and any other appropriate equipment necessary for personal safety protection. Welders specifically must use a combination hard hat and welding mask when conducting work on any jobsite.

EQUIPMENT
Cylinders, piping and fittings of compressed and liquefied gas systems shall be located or guarded so as to protect them from physical damage.

- All Equipment must be setup and maintained in accordance with the manufactures specifications.
- All Oxygen/Acetylene welding and cutting equipment must be equipped with back flash arrestors.
- Compressed gas cylinders will be clearly identified and shall:
    a) Not be dropped or subject to blows.
    b) Not be hoisted by slings or magnets.
    c) During transportation, refilling, storage or use, always be kept in an upright position and secured.
- Regulators or automatic reducing valves of welding equipment shall be used only for the gas for which they were intended.
- All charged cylinders shall be protected from any source of heat in excess of 55°C.
- Electrode stubs are not to be thrown on the ground. They are to be placed in a receptacle and disposed of properly.
- Oxygen shall not be used:
    a) In pneumatic tools.
    b) To preheat oil burners.
    c) To start internal combustion engines.
    d) To blow out pipe lines.
    e) To clean clothing at work.
    f) To create pressure.
    g) Or for ventilation purposes.
- Oil or grease is not to be allowed to come in contact with oxygen cylinders or controls. Hands and gloves are also to be kept oil and grease free.

SHIELDING

Whenever practical, all arc welding and cutting operations shall be shielded by non-combustible or flameproof screens which will protect employees and other persons working in the vicinity from the direct rays of the arc.

FIRE PREVENTION

- A Hot Work Permit and Hazard Assessment must be completed prior to any welding and cutting operations begin. The only exemption to the Hot Work Permit is for operations taking place in the Welding Shop.
- When practical, objects to be welded, cut or heated shall be moved to a designated safe location.
- If the object to be welded, cut or heated cannot be moved and if all the fire hazards cannot be removed, positive means shall be taken to confine the heat, sparks and slag, by an asbestos blanket.
- Suitable fire extinguishing equipment, e.g. 20 lb. ABC, shall be immediately available in the work area and shall be maintained in a state of readiness of instant use. Use of hand pump water extinguisher can be used to wet down danger areas prior to and after welding operations.
- When the welding, cutting or heating operation is such that normal fire prevention precautions are not sufficient, additional personnel shall be assigned to guard against fire while the actual welding, cutting or heating operation is being performed, and for a sufficient period of time after completion of the work to ensure that no possibility of fire exists. Such personnel shall be instructed as to the specific anticipated fire hazards and how the firefighting equipment provided is to be used. Specific areas include:
  a) Rubber lined areas of all chutes.
  b) Conveyor belts.
  c) Head frame house of conveyor systems.

Each site shall list all areas that have a high risk factor, where special procedures are required.

- When welding, cutting or heating is performed on walls, floors and ceiling, since direct penetration of sparks or heat transfer may introduce a fire hazard to an adjacent area, the same precautions shall be taken on the opposite side as are taken on the side on which the welding is being performed.
- When welding or cutting at height a control zone or other suitable control must be implemented to ensure workers are prevented from entering the area below the welding operations or being exposed to welding sparks and/or cutting slag.
- For the elimination of possible fire in enclosed spaces as a result of gas escaping through leaking or improperly closed torch valves, the gas supply to the torch shall be positively shut off at some point outside the enclosed space whenever the torch is not to be used or whenever the torch is left unattended for a substantial period of time, such as during the lunch period. Overnight and at

the change of shifts, the torch and hose shall be removed from the confined space. Gas and oxygen hoses shall be immediately removed from enclosed spaces when they are disconnected from the torch or other gas consuming device.

YOU MAY BE EXPOSED TO THESE HAZARDS

HAZARD	SOURCE	PROTECTION
Heat—Stress	Mainly in confined spaces.	Adequate ventilation
Toxic Gases	From fluxes and thermal reactions with atmospheric gases.	Sufficient local exhaust ventilation and air fed hoods.
Toxic Fumes	Metal vapor, coated work pieces of toxic metal paints, flux fumes.	Sufficient local exhaust ventilation and air fed hoods.
Noise	Explosive welding, resistance welding and plasma arc welding and air gauging.	Ear protection when levels exceed acceptable values.
Radiation	Ultraviolet radiation from arc processes.	Gauntlets, face mask, and eye protection
Electricity	Transformer primaries, return and not grounded, poorly insulated electrode holders, etc.	Proper maintenance and knowledge of equipment.
Burns	Hot metal splash and touching hot work pieces.	Proper Clothing and marking work pieces “HOT”.
Explosions	Flammable liquids and gasses in containers being welded; mishandling equipment and confined spaces.	Properly steam clean and check with supervisor before welding.
Fire	Welding slugs and gas flames may ignite waste or other material.	Good housekeeping essential, use of flame retardant enclosure to prevent scattering of hot slugs.

Refer to the OH & S Act Regulation & Code- Part 10 to access more information regarding legislation for hot work and welding.

3.13 SWP-11: OXYGEN AND ACETYLENE

Oxygen and acetylene, because of exceedingly hot flames they produce, are used for welding and cutting metals.

ACETYLENE

- A colorless flammable gas with slight garlic like odor. Forms a wide range of explosive mixtures when combined with air.
- Flammable limits are 2.5% and 100%. Minimum ignition temperature is 571ºF. It is lighter than air with a vapor density of 0.9.
- Distribution through hose and piping should be maintained at less than 15 psi.
- Forms explosive compounds with copper, silver and mercury.
- Keep acetylene cylinders away from heat sources and surrounding temperature should be kept below 54ºC (130ºF).
- Acetylene cylinders should be stored separately from oxygen cylinders.

OXYGEN

- Oil, grease or similar materials should never be allowed to come in contact with any valve, fitting, regulator or gauge of oxygen cylinders because of the spontaneous explosive hazard.
- Oxygen cylinders should be separated from fuel-gas cylinder or combustible materials (especially oil or gas) by a minimum distance of six (6) meters of by a one and a half (1½) meter high non-combustible barrier.

STORAGE AND HANDLING (GENERAL)

- Protect cylinders against physical damage. Cylinders should be stored in a well-ventilated area, preferably outside with overhead protection from weather.
- Cylinders should be properly secured and always be transported or stored in a vertical position and never dropped or jarred. Cylinders must be hoisted in properly rigged racks or baskets to keep them secure and upright.
- Store in a cool, well ventilated, and non-combustible place, away from all possible sources of ignition.
- Cylinders should be protected against lightning, static electricity, and from sparks, flames and contact with energized electrical equipment or where the cylinder could be inadvertently struck by a welding rod.
- Cylinders should have the valve protection cap or other approved protective devices in place at all times, except when secured in position for actual use.
- Cylinders should not be rolled and lifted by the valve or valve caps. A suitable cradle or other approved device should be used or otherwise chained and secured so they cannot fall or be upset.
- Do not move cylinders without first closing the valves.
- Empty cylinders should be tagged and stored separately from full cylinders.
- Acetylene cylinders should be stored separately from oxygen cylinders.

- A leaking gas cylinder must be shut off and removed to an outdoor location away from ignition sources and marked to be readily identifiable. The supplier should be notified about the defective cylinder.
- Cylinders should not be stored where materials or equipment can strike, fall or knock them over.

OXY-ACETYLENE EQUIPMENT PRECAUTIONS

- Supply hoses must be protected from traffic.
- Employees should never force connections that do not fit nor should they tamper with the safety relief devices of cylinder valves.
- Pressure regulators, required by provincial regulations, should be in place and used on all compressed gas cylinders.
- Do not use regulators, hoses or torches unless they are working properly.
- Use only spark light to ignite torches. Never use matches or cigarette lighters or carry butane lighters.
- Oxygen or acetylene torches must not be used to blow dust from work surfaces, clothing or skin. Valves should not be opened (cracked) to clear debris from the threads.
- Fire extinguishers must be available where oxyacetylene cutting is being done.
- In case of fire, protect adjacent property. Keep the cylinder cool and let the fire burn out.
- Leather gauntlet gloves and goggles with the proper shade of lenses must be worn by workers using an oxy-acetylene cutting torch.

Please refer to the Occupational Health & Safety Act, Regulation & Code,
Part 10 – Fire & Explosion Hazards and
Part 18 – Personal Protective Equipment

HAZARDS	RANK	CONTROLS
CO Poisoning (Exhaust Fume)		Well ventilated use only
Flash Burns (Arc Radiation)		Wear protective eyewear
Burns		Observe the above safe work practices

3.14 SWP-12: PROPANE GAS AND CYLINDERS

GENERAL

- Propane is a chemical compound made up of hydrogen and carbon (that's why it is a hydrocarbon). It has the property of turning from gas to liquid when pressure is applied. This allows us to pump a lot of propane into a steel cylinder and makes transportation relatively easy and inexpensive. Thus we get "liquefied hydrocarbon" or "L-P Gas", as propane and other similar gases are frequently called.
- Propane is non-toxic and non-poisonous. It is artificially odorized to aid in detecting leaks. In the event of gas leakage, close all cylinder valves immediately and close all appliance valves and do not turn them on again until the cause of the leakage has been found.
- Propane burns with hot, clear blue flame when mixed with the proper amount of air. The "proper" amount of air is very important.
- Propane gas is heavier than air. If a leak should occur, the gas may tend to collect near the floor or flow into a basement. Therefore, cylinders and regulators should be located outside at and at least three feet horizontally away from any opening in any building, as prescribed by the National Fire Protection Association and the Canadian Standards Association.
- All installations and use of this product on the job site must comply with the Government legislation set out for its safe use.
- Suppliers delivering the product or setting up the equipment at the site must be part of the safe work practices.

STORAGE AND TRANSPORTATION OF CYLINDERS

- Cylinders must be kept UPRIGHT at all times during storage, transportation and use.
- They should always be stored outside - away from any flames or sources of ignition and never in heated or inhabited dwellings.
- Some cylinders require valve protection caps that must be kept in place, except when the cylinder is actually connected to a system and in use.
- During transportation all cylinders should be secured so they cannot be knocked over.

HANDLING OF CYLINDERS

- Cylinders should always be upright whether in storage, during transportation or in use unless designed for horizontal use.
- Each cylinder has a safety relief device (usually on the valve) to relieve the pressure if the gas gets too hot. If a cylinder is lying on its side and if the temperature rises and the safety device opens, liquid will be released - and liquid propane is over 200 times more concentrated as propane vapor.
- Nylon Slings must be used in a "chocker" fashion when loading, offloading or lifting propane tanks.

"Lifting Lugs" provided on tanks are not to be used. Slings are to be wrapped around the shelf or the tank.

- Tank valves and regulators are to be removed from the tank prior to any movement of the tank.
- Crane hooks shall be equipped with a "safety latch".
- All trucks, cranes or equipment used to handle propane tanks must be equipped with a fire extinguisher appropriate for the size and type of tank being handled.
- Except in an emergency, any movement or repositioning of tanks should be performed by a competent worker.

BASIC RULES FOR SAFE OPERATION

- Before connecting a full cylinder, open the cylinder valve three (short) times to blow out any dust or moisture, and then close it tight again. Do this in the open and away from any source of ignition.
- Cylinder valves should always be closed tight before any cylinder (full or empty) is connected or disconnected from the system.
- Each cylinder should be turned so that the safety device points away from the other cylinders or combustibles.
- Only approved hoses and fittings must be used to connect a cylinder to tools and equipment.
- Make sure the pigtail or regulator is screwed into the cylinder valve outlet firmly. Remember it has left hand threads.
- Tanks are not to be hooked up and used without proper regulators.
- Open cylinder valves fully when in use (by turning counter-clockwise). This gives you full glow of gas from the cylinder and prevents any leak around the valve stem.
- Tanks are not to be heated to increase flow.
- Test the connection for tightness and leaks with soapy water, never a flame or matches. Check operation by lighting one burner (it may be slow to light till air is expelled) then when all is well, re-light all pilots and check each appliance for normal operation.
- If you ever find a cylinder that is leaking gas because of characteristics of a gas odor, stop smoking and keep all sources of ignition away. If possible take it away from all buildings to an open field. Then try to shut off the valve tight (there may be a particle of dirt keeping the valve from closing). If the leak continues, let the gas escape to the open air until the cylinder is empty. Make sure the wind blows the gas away from buildings, automobiles, etc.
- Never use a damaged or leaking cylinder. No cylinder should be put into service which has been involved in or near any fire, or has dents or other signs of damage of any kind. Such cylinder must be re-certified for service according to government regulations. Take it to your Propane Distributor for inspection.
- Never attempt to transfer gas from one container to another. This can only be done safely by

individuals trained in this work, who have the proper pumps and equipment in approved locations and premises. It is against the law as well as insurance regulations to transfer gas from a cylinder to a smaller one, except in an approved propane cylinder filling plant.

- Close cylinder valves tight even when empty (by turning clockwise). This is necessary to prevent moisture from getting into the empty cylinder during storage and transportation. Moisture in the cylinder could cause "freeze-up" of the regulator in freezing weather (because of the refrigeration action of the gas in the regulator when the pressure is being reduced).
- When not in use, propane cylinders and hose-connected devices should not be left in trenches or other low-lying areas. Propane is heavier than air and can settle in dangerous concentrations at the bottom of trenches, manholes, basements, sumps, and other below-grade areas.

Please refer to the Occupational Health & Safety Act, Regulation & Code,
Part 10 – Fire & Explosion Hazards

HAZARDS	RANK	CONTROLS
Burns	2	Observe above recommended handling practices.
Explosion	3	Observe above recommended handling practices

3.15 SWP-13: TIGER TORCH USE

The tiger torches, although valuable to a jobsite, are sometimes misused in a manner that can make them dangerous. Tiger torches are only to be used for pre-heating piping etc. prior to welding.

1. When a torch is used, an adequate fire extinguisher must be present.
2. Torches are not to be used for heating work areas, thawing of lines and equipment, etc.
3. When not in use, ensure that the propane bottles are properly shut off.
4. Fuel lines are to have regulators.
5. Propane bottles shall be secured in an upright position.

3.16 SWP-14: FIRE AND USE OF FIRE EXTINGUISHERS

GENERAL

Good housekeeping is essential in the prevention of fires. Fires can start anywhere and at any time. This is why it is important to know which fire extinguisher to use and how to use it.

Always keep fire extinguishers visible and easy to get at. Fire extinguishers have to be properly maintained to do the job. Where temperature is a factor, ensure the proper extinguisher for the job is available and in good working order.

TYPES OF FIRES

Class A: These fires consist of wood, paper, ranks, rubbish and other ordinary combustible materials.

Recommended Extinguishers

- Water from a hose, pump type water cannon, or pressurized extinguisher, and soda acid extinguishers.

Fighting the Fire

- Soak fire completely - even the smoking embers.

Class B: Flammable liquids, oil and grease.

Recommended Extinguishers: ABC units, dry chemical, foam and carbon dioxide extinguishers.

Fighting the Fire

- Start at the base of the fire and uses sweeping motion from left to right, always keeping the fire in front of you.

Class C: Electrical Equipment.

Recommended Extinguishers

- Carbon dioxide and dry chemical (ABC units) extinguishers.

Fighting the Fire

- Use short bursts on the fire. When the electrical current is shut off on a Class C fire, it can become a Class A fire if the materials around the electrical fire are ignited.

FIRE EXTINGUISHERS

Portable fire extinguishers are classified according to their capacity for handling specific types of fires.

3.17 SWP-15: SAFEGUARDS

GENERAL

All machine safeguards and personal safeguards shall be provided and maintained in a manner sufficient enough to protect machine operators, workers and other persons present in machine areas and worksites from hazards associated with the operation of machines or construction activities. Such hazards include but are not limited to those created by points of operation, pinch points, rotating parts, flying chips, sparks and falling debris. The following information is provided to assist machine operators, workers, supervisors and managers in carrying out their responsibilities for assuring machine and site safety through a general list of DO's and DON'Ts pertaining to safeguards.

TYPES OF SAFEGUARDS

- Barriers and guards that prevent contact with machinery.
- Mechanical or electrical devices that restrict contact, such as restraining devices or gates.
- Feeding and ejection methods that eliminate part handling in the hazard zone.
- Signs that do not provide physical protection, but warn of a danger area.
- Covered Openings or holes to protect a worker from falling through.
- Guardrails to protect workers from falls.
- Toe Boards to stop falling debris.

CHECK LIST

- Ensure all safeguards are in place prior to starting work.
- Inspect safeguards for worn or damaged parts.
- Identify missing or required safeguards.
- Maintain and repair safeguards.

DO NOT

- Do not tamper with safeguards.
- Do not remove safeguards.
- Do not operate machinery with missing or damaged safeguards.
- Do not start work without proper safeguards in place.

Please refer to the Occupational Health & Safety Act, Regulation & Code,
Part 22 – Safeguards

HAZARDS	RANK	CONTROLS
Damaged or Missing Safeguards	2	Stop use and lock out machine
Cuts, Crush or Pinch Injuries	2	Observe the above safe work practices
Falls From Heights	3	Fall arrest and safeguards
Falling Debris	2	Observe the above safe work practices

3.18 SWP-16: CRANES & RIGGING

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

The Project Manager/Project Engineer shall ensure that any crane owned or rented for use on site shall be of adequate size to complete the lifts required. All cranes shall be operated in accordance with the manufacturer's procedures and recommended limits. All rented or owned cranes must meet the requirements of the applicable Provincial regulations.

The Project Manager/Project Engineer is responsible for hiring a competent crane operator that is qualified. A copy of all certificates, records and maintenance logs shall be kept in the cab of the crane and produced upon request.

The Project Manager/Project Engineer/Site Manager shall ensure that all specialty lifts, i.e. those involving two or more cranes, special rigging or irregular loads, are designed, reviewed and the procedures are understood by all parties. Adequate communication must be maintained.

The Operator is responsible for the safe operation of the crane.

Whenever there is doubt as to safety, no operator will operate, nor will he be requested to operate a crane until safety has been assured.

CRANE OPERATOR RESPONSIBLE FOR:

1. Daily maintenance checks as per manufacturer's specifications.
2. Complete monthly maintenance as required by the manufacturer.
3. Prior to each shift, checking the travel radius of the crane to ensure it is clear.
4. Ensuring that the manufacturer's load chart is in the crane and that he operates within its guidelines.
5. Complete the daily crane log in an accurate manner.
6. The crane operator shall rig or operate within limits as provided for in applicable statutory regulations.
7. The operator of a mobile crane shall ensure that the mobile crane situated properly as per the manufacturer's specifications before starting a lift.
8. At the beginning of each shift, inspect the hoisting equipment, test limit switches, brakes and circuit breakers and any other safety devices. Report any defects immediately.
9. The operator will only take directions from one person at a time and when in doubt shall stop the load. When required, the Site Manager will ensure that a qualified signalman shall work with the crane operator. The crane operator shall ensure that the signalman:
   a) Is knowledgeable in the proper hand signals and the operator is aware of the same.
   b) Check each load to ensure that it is rigged properly.

c) Is aware of the actual weight of each load and informs the operator of this.
d) Maintains all rigging gear in good condition.

10. The Pre-Job Checklist is to be completed by the Operator and the Rigger.

TOWER CRANES

The Project Managers/Site Manager shall ensure that all tower cranes have a structural inspection prior to erection on-site.

Due to various local requirements, the applicable Provincial/State/Federal code and regulations shall be obtained, kept on site and referred to as necessary.

All tower cranes require a structural inspection every 2000 hours or one per year from the Date of erection, or as otherwise required by applicable statutory regulations.

All tower cranes on the site must be equipped with offset caged ladders on a fall arresting device. Where a fall arresting device is provided, it must be used by any person climbing to the operator's cab.

When a tower crane is jacked, the Project Engineer shall compile a new drawing showing the height and turn radius of the crane in relation to any building or other structures.

RIGGING

Rigging must be done by a competent worker(s).

DO's and DON'Ts to remember

- Name one member of the crew to act as a signalman, and instruct the equipment operator to recognize signals from that person only. The signalman must be careful not to order a move until he has received the "all ready" signal from each member of the crew.
- Each rigger must be sure he's in the clear before he gives an "all ready" to the signalman. When you have positioned the sling or choker you're using, release it, if possible, before you give the "all ready" Signal.
- If you must hold the sling or choker in position, be sure your hand is clear of pinch points. In fact, your hand should be far enough away so there's no possibility of a frayed wire catching your glove and jerking your hand into a pinch point. (Of course, frayed cables should never be used.)
- Watch out for the roll or swing of the load. Since it's almost impossible to position the hook exactly over the load's center, there will almost always be a swing or roll. Anticipate the direction of the swing or roll and work away from it.

- Never place yourself between material, equipment or any stationary object and the load swing. Also, stay away from stacked material that may be knocked over by a swinging load.
- Never stand under the load, and keep from under the boom as much as possible. Chances are that nothing will break, but something might.
- Look over the place where the load is to be set. Remove unnecessary blocks or other objects that might fly up if struck by the load.
- When lowering or setting the load, be sure your feet and all other parts of your body are out from under. Set the load down easily and slowly so that if it rolls on the blocking, it will be a slow shift that you can get away from.
- Identify the designated signalman by the use of distinctive vests, armlets, etc.
- Use tag lines to control the leads.

Refer to the Occupational Health & Safety Act, Regulation & Code,
Part 6 – Cranes Hoist & Lifting Devices
Part 21 – Rigging for more information.

3.19 SWP-17: RIGGING

Rigging looks like an easy operation that requires no particular skill or experience. But if you have an idea that just anybody can do it, you're on the wrong track. Particular attention to all rigging is to be maintained by all members of the crew.

DO's and DON'Ts to remember:

- All rigging equipment should be inspected for damage and wear before being used for lifts. Weight of the lift should be known beforehand. Slings should be rated and de-rated appropriately.
- Ensure that the safe working load is clearly marked on the rigging equipment. Never exceed the safe work load.
- Ensure that all hooks on rigging equipment are equipped with properly functioning safety latches.
- Any damaged equipment or equipment missing the safe working load must be tagged and removed from service.
- Name one member of the crew to act as a signalman, and instruct the equipment operator to recognize signals from that person only. The signalman must be careful not to order a move until he has received the "all ready" signal from each member of the crew.
- Each rigger must be sure he's in the clear before he gives an "all ready" to the signalman. When you have positioned the sling or choker you're using, release it, if possible, before you give the "all ready" Signal.
- If you must hold the sling or choker in position, be sure your hand is clear of pinch points. In fact, your hand should be far enough away so there's no possibility of a frayed wire catching your glove and jerking your hand into a pinch point. (Of course, frayed cables should never be used.
- Watch out for the roll or swing of the load. Since it's almost impossible to position the hook exactly over the load's center, there will almost always be a swing or roll. Anticipate the direction of the swing or roll and work away from it.
- Never place yourself between material, equipment or any stationary object and the load swing. Also, stay away from stacked material that may be knocked over by a swinging load.
- Never stand under the load, and keep from under the boom as much as possible. Chances are that nothing will break, but something might.
- Look over the place where the load is to be set. Remove unnecessary blocks or other objects that might fly up if struck by the load.
- When lowering or setting the load, be sure your feet and all other parts of your body are out from under. Set the load down easily and slowly so that if it rolls on the blocking, it will be a slow shift that you can get away from.
- Identify the designated signalman by the use of distinctive vests, armlets, etc.
- Use tag lines to control the loads. Keep tag lines knot free. Watch for tangles and never allow them to

get looped around anything or get snagged on anything.

For further information please refer to **Part- 21 RIGGING** of the OH & S Act, Regulation & Code.

HAZARDS	RANK	CONTROLS
Crush / Pinch injuries	2	Proper hand placement
Falling Debris	2	Observe and follow the safe work practice above

3.20 SWP-18: CRANES, BOOM LOADING, AND CRITICAL LIFTS

Crane and rigging safety is of extreme importance. The Critical Lift Permit outlines the criteria of a critical lift and must be completed before any critical lift is attempted.

Crane and rigging operations must only be completed by trained and competent workers

Hazardous loading of crane booms, which could lead to either overturning the crane or to buckling the boom, can be avoided when crane ratings are understood. Crane ratings must be marked on the device showing its rated capacity. This related capacity can be safely handled if attention is paid to the following points.

1. The safe load depends up on the boom length and the radius. Make sure the length of the boom is known. Remember that radius is measured from the center of the rotation, not from the boom foot pin.
2. The Published load does not include the weight of the hook or material handling devices. Subtract the weight of the equalizer jobs, concrete buckets, or job extension from the rated loads to determine the weight of material that can be safely handled.
3. Ratings are based on operating on firm ground, and in the case of mobile cranes, with the outriggers fully extended. Make sure that the crane is not operating on ground that is too soft or without outriggers that are not properly blocked and extended.
4. Ratings are based on operating on level ground. Operating on grades increases the boom stress. If a load is picked up on the high side of the slope and swings to the low side, the radius will increase and can cause the load to tip. If operating at high boom angles, a swing from the low side to the high side can cause the boom to collapse over the cab.
5. Avoid fast operations. Fast swings cause the load to swing out, thus increase the radius. Rapid hoisting or braking of the load increases the boom stresses and can overload the rigging.
6. Make sure the crane is properly rigged, has the correct counterweight, the proper boom, the right boom mounting position, the gantry properly rigged and has adequate parts of line.
7. Avoid traveling with a heavy load. The boom is subjected to shock and bending stresses if moving over uneven ground and swinging the load creates inertia forces, which can cause collapse of the boom.
8. Never allow a suspended load the pass over a worker and do not allow a worker to stand under or walk under a load.
9. Do not use a crane with a bent or damaged boom. Booms must be straight and in good repair.
10. If in doubt as to the ability of a machine to lift a load, make sure that a lift is attempted in the most stable position. (I.e. with a truck crane, pick the load up over the rear where stability is greater and then boom up before swinging over the side).

There are many safety devices available (such as overload indicators, boom back stops and level indicators) but in terms of reducing hazards, there is still a requirement for all crane users to understand load rating and to exercise intelligence, and care.

It must be ensured that the log book (maintenance and inspection records) for all lifting devices is up to date and readily available for review upon request.

SAMPLE PROBLEM

3/8" Single Chain or Wire Rope, Vendor Specifications 6600 pounds. Lift to be made at a 45° degree angle with double sling. What is the safe working strength of the double chain or wire rope?

SOLUTION

[6600lb. + 6600lb. = 13,200lb.] Total working strength of both 3/8" chains or rope sling at 0°.
If the sling strength is 13,200 pounds, its strength is reduced by 30% at 45°, then the lift strength is reduced by [13,200 x 0.3] = 3,960 pounds, and the safe working load limit is [13,200 – 3,960] = 9,420 pounds. The safe working strength of a 3/8" double chain or wire rope sling at 45° is 9,420 pounds.

These reductions in safe working load limits are based on NEW wire, rope or chains. Inspect all wire, rope, and chains for safe condition.

MOBILE CRANES – HOISTING

1. Park picker or crane on firm, level and dry ground if possible.
2. Before starting, make sure brake is on.
3. Avoid work under power lines. If it is necessary to work under power lines, abide by the general safety regulations for working near overhead power lines.
4. Use outrigger pads at all times with picker being level.
5. Know the weight and the distance to travel with hoisting load and machine capacity.
6. Make all personnel aware of hoisting operations, and ensure they are wearing proper safety equipment.
7. Use tag lines whenever possible.
8. Keep load as close to ground as possible.
9. Secure all loads properly on truck or when resting on ground.
10. Do daily visual checks of hoisting line and all rigging equipment.
11. Make sure everyone is aware of proper hand signals. Take directions from one signal person only.
12. Never operate beyond machine capacity.

3.21 SWP-19: CRANE (MOBILE) PRE-JOB CHECKLIST

Note: If the swing of any boom is within 30 meters of any electrical lines, then the power distribution company must be notified.

Job Description: _____

_____

_____

Location: _____

Client Contact: _____

Title: _____

Signature: _____

Weight of equipment to be lifted: _____

Height of equipment to be lifted: _____

Approximate radius of lift: _____

Description of item to be lifted: _____

	Yes	No
1. Is the safety factor less than 25% (exceed 75% of crane capacity)?	☐	☐
2. Is the safety factor less than 50% when lifting over critical lines/equipment?	☐	☐
3. Is the swing arc of the boom within 3 meters of high voltage lines or conductors?	☐	☐
4. Is the weight of the object being lifted unknown, not specified due to modification, outdated drawings, etc.?	☐	☐
5. Are two cranes required and is the lift less than 50% of the safety factor?	☐	☐
6. Is the integrity of the ground (soil/cement/stone) not known or questionable regarding total weight for outriggers?	☐	☐
7. Is an engineering study required with specifications and/or drawings for the lift?	☐	☐
8. Is the lift infrequently used or have unusual characteristics?	☐	☐

Explain: _____

_____

9. Is there a second crane requiring a man in a basket?	☐	☐
10. Is the lift within batter limits of a toxic material unit?	☐	☐

****If any of the above questions are answered "Yes", contact the Project manager****

Note: Load chart refers to the piece of paper, plastic or metal on which the crane manufacturer lists the legal maximum gross loads at various radiuses' and boom lengths that the crane is capable of lifting if operated properly without the approval of the manufacture.

No crane shall lift any load in any configuration, unless there is, in or on the crane, a current, published rating chart from the crane manufacturer, valid for the configuration in which the crane is to be used. Any crane that doesn't have such a rating chart should not be used, except in movement off the site, until a proper rating chart is provided.

Published capacities are absolute maximums and must never be exceeded under any circumstances without the approval of the manufacturer.

NOTE: No article or item in this submission and/or acceptance of the following checklist will relieve the contractor of any responsibility as per the Occupational Health and Safety Act including any provincial regulations. All hoisting equipment and rigging **MUST** be sized to exceed the total lift weight multiplied by the safety factor (1.5), unless an engineered drawing is submitted by a Professional Engineer.

Total Weight x 1.5 = Minimum Crane Capacity Target

1. Type of Crane to be used: _____
2. Major hoisting equipment to be used: _____
3. Schedule of critical lift (include rigging &equipment inspection): _____

_____

4. Equipment to lift relationship : _____
5. Operation radius: _____
6. Boom length: _____
7. Allowable lode (from equip. load chart): _____
8. Clearance between boom and lift: _____
9. Clearance to surrounding facilities: _____
10. Can outriggers be fully extended? _____
11. Can hoist tires be fully elevated? _____
12. Will hoist be out of level? _____
13. Obtaining weight of critical lift :

Note: All cranes must have a calibrated load indicator and anti-two block device.

a) Certified scale weight: _____

b) Calculated independently by more than one source: _____

   i. Source/Weight _____

Note: Always use the greatest weight for calculations. If this is an existing item being removed, then it must be calculated, taking into account all modifications, including internals, allowances for scale, sediment, sludge, insulation, liquid, etc.

a. Total weight of rigging and load: _____

b. Total weight or rigging and load x safety factor: _____

c. Is the weight of the equipment being lifted is unknown, describe the assumptions made in making the load calculations _____

_____

d. What measures can be taken to determine an accurate weight? _____

_____

14. Stability of ground area:

a. Check soil bearing allowable load under each pad _____

b. Will mats be required?_____

ii. Size=Min. Sq. area = capacity of Crane in Tons / 5

iii. Type = Hardwood

iv. Thickness = 100mm x 100 mm or as calculated with load bearing

v. Configuration = Square and tied together

a. Are there any underground installations that require special consideration e. g. wells sewers, etc.?___

b. If any excavation is in the area, the crane must maintain a distance away from the excavation that is equal to the depth of the excavation _____

LEADERSHIP AND ADMINISTRATION

QUESTIONS	YES	NO	N/A
Has an engineer's seal been attached to the drawing? Name:			
Has a lift commander been appointed? Name:			
Has a competent operating Engineer been selected? Name:			
Has a competent signal person been selected? Name:			
Has an emergency fire crew been specified? Names:			
Submission/approval to project management? Name:			
Has a traffic controller been selected? Name:			
PLANNED INSPECTION			
Will a client management representative inspected the crane (s)? Name:			
Will formal weekly site inspection take place?			
TASK ANALYSIS/OBSERVATION			
Will a test lift be carried out as part of an engineered lift procedure? Name:			
Will a person be required to be lifted in a basket?			
Will other work jobs or permits have to be cancelled?			

QUESTIONS	YES	NO	N/A
Will access to the work area be controlled? How?			
PROGRAM EVALUATION Will this plan be submitted for future references on similar lifts? Name?			
Will compliance with fire prevention, personal safety and control standards and control standards be evaluated?			
ENGINEERING STANDARDS Will LIVE equipment need protection?			
Will Cranes be positioned on mats?			
Is Non-Destructive Test (NDT) required on rigging equipment?			
Is it necessary to lift, other than in day light hours?			
Is it necessary to schedule a lift on a Saturday or Sunday?			
PERSONNEL COMMUNICATIONS Will on site personnel be notified via public address systems on lift?			
Is the signal person aware of the OH&S regulations for positioning?			
Will radio communications be required?			
Has a notice been communicated to all site personnel about the lift, including all drivers/contractors using the facilities?			
Will the site have a shut down during the lift?			
GROUP MEETINGS Have all participants been modified of a follow up critique meeting for input? Date/Time:			
Before lifting, will a safe lift meeting be conducted? Date /Time:			

3.22 SWP-20: LIFTING AND HOISTING

EVALUATING THE LOAD
Determine the weight of the object or load prior to a lift to make sure that the lifting equipment can operate within its capabilities.

BALANCING THE LOAD
Estimate the center of gravity or point of balance. The lifting device should be positioned immediately above the estimated center of gravity.

LANDING THE LOAD
Prepare a place to land the load, lower the load gently and make sure it is stable before slackening the sling or chain.

1. Select only approved chains or clings and never exceed working load limits.
2. Make sure the hoist or crane is directly over the load.
3. Use slings of proper reach. Never shorten a line by twisting or knotting. With chain slings, never use bolts or nuts.
4. Never permit anyone to ride the lifting hook or the load.
5. Make sure all personnel stand clear from the load being lifted.
6. Never work under a suspended load, unless the load is properly supported.
7. Never leave a load suspended when hoist or crane is unattended.
8. Inspect all slings thoroughly at specified intervals and maintain them in good condition.
9. Inspect each chain or sling for cuts, bent links, bent hooks, etc. before each use. If in doubt, don't use it.
10. Ensure that safety latches on hooks are in good working condition.
11. Ensure that the signaler is properly identified and understands techniques of proper signaling.
12. Make sure the tagline is used to control the load.

HAZARDS	RANK	CONTROLS
Pinch Points	2	Careful hand placement
Crush Injuries	3	Do not go under load
Strains / Sprains	2	Proper lifting techniques

3.23 SWP-21: LIFTING AND CARRYING

Most lifting accidents are due to improper methods rather than lifting heavy loads. All manual lifting **should be planned** and safe lifting practices followed.

- Employees should know their physical limitation and the approximate weight of the materials they are trying to lift.
- Obtain assistance lifting heavy objects whenever the task may be more than can be safely handle.
- Before any manual lifting is done, the use of power equipment or mechanical lifting devices such as dollies, trucks or similar devices should be considered and employed where practical.
- Bulky loads should be carried in such a way as to permit an unobstructed view ahead.
- Ensure a good grip before lifting.
- Lift gradually. Lift slowly, smoothly and without jerking.
- The back should be kept close to vertical or straight and lifting done with the leg muscles which are large and strong.
- Avoid unnecessary bending. Do not place objects on the floor if they must be picked up again later.
- Avoid unnecessary twisting. Turn your feet; do not turn your hips or shoulders. Leave enough room to shift your feet so as not to twist.
- Avoid reaching out. Handle heavy objects close to the body. Avoid long reach out to pick up an object.
- Do not be tempted at the last moment to swing the load onto the deck or shelf by bending or twisting your back.
- Pipes, conduits, reinforcing rods and other conductive materials should not be carried on the shoulders near live electrical equipment or conductors.
- When two or more persons carry a heavy object that is to be lowered or dropped, there shall be a prearranged signal for releasing the load.
- When two or more persons are carrying an object, each employee, if possible, should face the direction in which the object is being carried.

HAZARDS	RANK	CONTROLS
Strain/Sprain		Use proper lifting technique. Get help

3.24 SWP-22: STEP LADDERS

As with all ladders, make sure that the step ladder is in good condition, and it is the right ladder for the job to be done.

Step ladders are to be used only on clean even surfaces.

- No work is to be done from the top two steps of a step ladder, counting the top platform as a rung.
- When in the open position ready for use, the incline of the front step section shall be one (1) horizontal to six (6) vertical.
- The step ladder legs shall be spread in the fully opened position with the spreader bars locked in place. In the case of an articulating ladder with no spreader bars it must be ensured that all locking pins are fully engaged.
- Top of step shall not be used as a support for scaffolds.
- Step ladders shall not be used as straight ladders.
- Don't over reach while on a ladder and keep the body centered. Climb down and move the ladder to a new position.
- When an employee is working on a step ladder over 3m high (except a platform ladder), the ladder shall be held by another person.
- Only CSA/ANSI standard ladders shall be used.

Stepladder

Refer to the Occupational Health and Safety Act Regulation and Code,

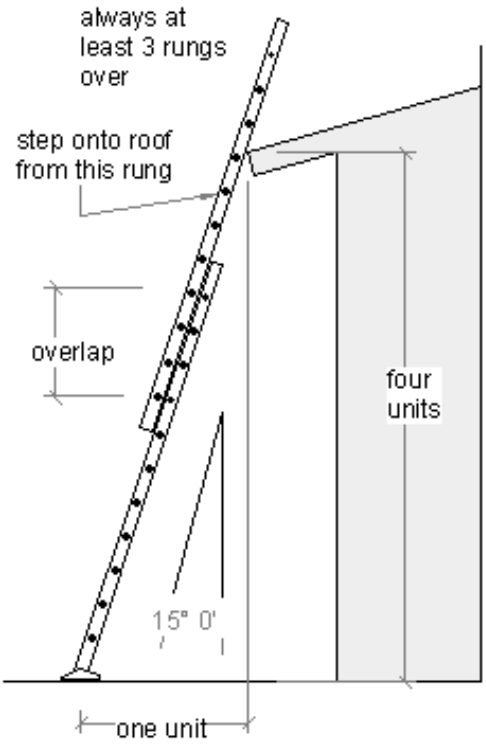
Part 8- Entrances, Walkways, Stairways and Ladders, for legislation regarding the use of ladders in the workplace.

HAZARDS	RANK	CONTROLS
Fall from height	3	Follow the above safe work practice

3.25 SWP-23: PORTABLE LADDERS

- Only company approved ladders conforming to CSA/ANSI standards should be used.
- All ladders shall be inspected frequently and regularly. Ladders with weakened, broken, or missing steps or wrongs, cracked side rails or other defects shall be tagged and removed from service until repaired or replaced.
- Wooden ladders shall not be painted, only a clear nonconductive finish such as boiled linseed oil or wood preservative shall be used.
- Aluminum, magnesium, other conductive metal ladders or wire reinforced wooden ladders shall not be permitted in energized switch yards, terminal stations, or where the possibility exists of the ladder or worker coming into contact with energized inductions or equipment.
- Ladders shall not be placed in front of doors opening towards the ladder unless the door is open, Locked, guarded or unless barricades have been erected.
- Ladders shall be set up on a firm level surface. If the base is to rest on soft non-compacted or rough soil it should not be used.
- When setting up a ladder, secure the base, and "walk" the ladders into place.
- All portable ladders shall be equipped with suitable nonslip safety feet or skid bases.
- Where there exists a hazard of the ladder slipping, it shall be securely held in place by rope or by a person holding the base of the ladder.
- The extension/straight ladders should be set up at the proper angle of one (1) horizontal to every four (4) vertical.
- The ladders should not be climbed higher than the third step from the top.
- When dismounting from a ladder at an elevated position (as at a roof right) the employee shall ensure that the ladder extends at least 1 m above the dismounting position.
- When ascending or descending ladders, employees shall use both hands for climbing and shall face the ladders. Three points of contact should always be maintained: 2 feet and one hand/1 foot and two hands.
- Only one employee shall be on a portable ladder at one time.
- Don't overreach while on a ladder. It is easier and safer to climb down and move the ladder over a few feet to a new position.
- Ladders shall not be used in a horizontal position as substitutes for scaffold planks, runways or any other service unless specifically designed for.
- Workers on the ladder shall not straddle the space between a ladder and any other object.
- Boxes, chairs, etc. shall not be used in place of ladders.
- Ladders shall not be directed on boxes, carts, tables, scaffold platforms, man lift platforms or on vehicles.

- Employees working from ladders at heights greater than 3 m or whenever both hands must be used for the job or there exists the possibility of the employee falling from an elevated position, they shall be required to use a personal fall arrest system.
- Ladders not specifically designed for that purpose, shall not be spliced together to form a larger ladder.
- A ladder shall not be placed against an unsafe support. Rest both side rails on the top support, with the top secure to prevent slipping.
- When sections of portable ladders are extended, the overlap shall not be less than 1 m. Do not remove safety extension bolts, or stopper bolts.
- When using an articulating ladder it must be ensured that all locking pins are fully engaged.



Refer to the OH & S Act, Regulation & Code,
Part 8 – Entrances, Walkways, Stairways & Ladders

HAZARDS	RANK	CONTROLS
Fall from height	3	Follow the above safe work practice

3.26 SWP-24: SCAFFOLDS

GENERAL

- The erection and dismantling of scaffolds must be carried out under the supervision of personnel knowledgeable and experienced in such operations.
- Workers erecting or dismantling a scaffold more than 3 m (10 feet high) must be tied off with a harness and lanyard.
- Scaffolds must be erected with all braces, pins, screw jacks, base plates, and other fittings installed, as required by the manufacturer.
- Scaffolds must be adequately braced horizontally and vertically.
  a) Most tubular frame scaffolds should have braces both on every section in the vertical plane.
  b) Horizontal bracing is provided to some extent by the scaffold platform and the base plates on the scaffold legs. However, where scaffolds are several sections high or where they are on casters, most manufacturer's recommend that horizontal bracing be used.
- Scaffolds must be equipped with guardrails consisting of:
  a) Horizontal – 0.92 m to 1.07 m above platforms.
  b) Intermediate rail - horizontal rail midway between scaffold platform and top rail.
  c) Toe board – horizontal member at platform level no less than 140 mm in height above the platform level.
- Scaffold platforms must be at least 46 cm (18 inches) wide and if they are over 2.5 m (8feet) high they must be planked across their full width.
- Scaffolds must be tied into a building at vertical intervals not exceeding three times the least lateral dimension, including the dimension of any outrigger stability.
- Where scaffolds cannot be tied into a building, guy lines adequately secured should be used to provide stability.
- Scaffold frames should be effectively pinned together wherever scaffolds are two frames in height or where they are used as rolling scaffold towers.
- Scaffold planks must be securely fastened to prevent them from sliding.
- Scaffold planks must be scaffold grade or better and free from defects such as loose knots, splits or rot, rough sawn, measuring 50 mm x 255 mm (2" x 10") in cross section, and no. 1 spruce or better when new.
- Scaffolds must be erected, used and maintained in a reasonable plumb condition.
- Scaffold planks must be installed so they overhang by at least 150 mm (6") but not more than 300 mm (12").
- Scaffolds over 15 m (50') in height must be designed by a professional engineer and constructed in accordance with design.
- Remove ice, snow, oil, grease, and other slippery material from the platform and sand the surface.

- Wheel or casters on rolling scaffolds must be equipped with braking devices and securely pinned to the scaffold frame.
- **Baker scaffolds should be equipped with outriggers.**

SCAFFOLDS – METAL
There are various types of metal scaffolds and they all have a right and wrong way to be erected. The misuse of scaffolding is the cause of numerous serious injuries. Every worker who designs or constructs a scaffold should be competent and know what the manufacturer's specifications are for that type of scaffold.

The Scaffold type which will be best suited for the job and capable of withstanding the loads to be imposed on it must be determined before the job begins.

ENSURE THAT
- The scaffold you intend to use is the correct one for the job.
- The location in which the scaffold is to be constructed is level or capable of presenting secure footing by use of mudsills or some other device.
- Legislation and manufacturer's requirements are to be complied with.
- Leveling adjustment screws have not been over extended.
- Scaffold planks are number one grade materials with the maximum spans of 3.1 m on light duty and 2.3 m on heavy duty with a maximum projection beyond the ledge of no more 300 m.

Refer to the Occupational Health & Safety Act, Regulation & Code
Part 23 – Scaffolds & Temporary Work Platforms, for more information regarding legislation and best practices for use of this equipment.

HAZARDS	RANK	CONTROLS
Fall from height	3	Follow the above safe work practice

3.27 SWP-25: STAIRWAYS

Injuries can occur while using stairways due to substandard conditions or a substandard act.

Substandard conditions can be prevented through the following measures

- The width of the stairs and height of the rise need to be uniform throughout its length.
- Stairway treads need to be level.
- Temporary stairs must be a minimum of 600mm wide.
- Stairways need to be kept clean and clear of debris.
- Stairways need to be kept dry, for outdoor stairs they must be clear of snow and ice.
- A stairway with open sides requires a handrail and an intermediate rail or equivalent safeguard on each side.
- A stairway with more than 5 risers has specific guidelines they are
  a. It must be equipped with a handrail that extends the full length of the stairway.
  b. Handrails must be secured and cannot be dislodged.
  c. Handrails are to be between 800mm and 920mm above the front edge of the treads.
  d. Handrails and posts must be substantial and constructed of lumber that is not less than 38mm x 89mm or material with properties the same or better than those of lumber.
  e. The posts that support the handrails cannot be spaced more than 3 meters apart at their vertical centres.

Substandard Acts on stairwells can be prevented by following these rules:

- Do not run up and down the stairs.
- Do not slide the rails.
- No horseplay.
- Do not carry a greater load than you can handle.
- Do not interfere with others while they are using the stairs.
- Be aware of your footing at all times.
- Do not use a dark stairway; carry a flashlight in case of a blackout.
- Remove any debris and correct or report any substandard conditions you encounter.
- Do not drag equipment (compressors etc.) down the stairs as this can damage the treads.
- Do not run extension cords across pathways in the stairways.
- If a ladder is placed on a stairway landing appropriate signage needs to be in place. Fall protection rules apply.
- Scaffold installed on a stairwell needs to be placed in accordance to OH&S standards by a competent person.

3.28 SWP-26: ELECTRICAL SAFETY AND SHOCK PREVENTION

STANDARD SAFETY GUIDELINES

- Any electrical work must take into account related work going on that is directly or indirectly affected by electrical power.
- Employers are to ensure workers are carrying out safety related work practices and procedures and are properly trained for job assignment.
- An employee is not allowed to work in any electrically hazardous area unless adequately trained to recognize and to avoid such hazards.
- Fully qualified and trained workers only, are to perform work on line searches or equipment.
- Exposed circuit parts that could become charged, are to be treated as live!
- Safe work practices must include the knowledge of specifically protective wear (where required) such as hard hats, eye protection, insulating blankets, covers, line hoses, mats and insulating gloves and sleeves.
- Shortcuts and poor work performance will not be tolerated.
- Sub-standard or makeshift parts on electrical circuits or equipment cannot be used.
- Classification of an area determines that hazards present and the safety aspects of the electrical circuitry and equipment to be used.
- Employers are responsible for informing the worker of the classification of the area his job assignment is in.
- An explosive atmosphere can be created by work procedures which require the use of chemicals, paints, solvents, etc. Therefore, before energizing any circuits or equipment, check for this hazard.

ENERGIZED CIRCUITS AND EQUIPMENT

- Only completely qualified and trained electricians familiar with the work assignment shall be allowed to work on line circuits or equipment. They must ensure that:
  a) Personal protection is used including insulated tools;
  b) They are alert and not impaired by fatigue, sickness or any other reason;
  c) They work in a well-lit area that does not inhibit vision of any live circuits.
  d) They are not wearing any conductive articles of clothing or jewelry such as watches, bracelets, necklaces, piercings, etc.
- Warnings and signs with the use of barricades can be useful in preventing or limiting access to a danger area. A safety watch person may also be posted to warn of danger of electrical contact.
- Testing equipment/instruments, insulated tools and personal protective wear shall always be in 100% condition and checked for defects and damage before each work assignment.
- Portable ladders that are metal or have dangerous conductive parts cannot be used near or while working on exposed energized circuits.

- Protective barriers and shields shall be used to insulate workers from accidental contact with live circuits.
- Doors, panels, man-entry gates to confined spaces housing exposed electrical circuitry shall be secured from swinging into the worker while working in the enclosure.
- Elevated work close to power lines has to be done by fully qualified and trained workers, even if there are some other trades not working on power. These workers also need to know the safe and minimum working distances for their work as laid out by Alberta Occupational Health and Safety.
- No one is to approach, lean on or touch vehicles that are working on overhead power lines, with the exception of personnel who are working on the power and are wearing proper protective equipment.
- Signs should be posted and cleanup personnel are to be instructed that conductive cleaning liquids, solvents or other conductive materials should not be used, except with caution around electrical equipment, enclosures, lines and housings.

Note: **When Working in an Extremely Hazardous Electrical Situation, There Should Be Two or More People with At Least One Posted As a Safety Watch in the Event of an Accident.**

Each year statistics indicate there are electricians who are flash burned, receive serious shocks or are otherwise injured, sometimes fatally.

Observances of the following safe practices can reduce these accidents considerably:

- Whenever possible, avoid working on live circuits. If you must work on live circuits, **Insulate** all opposite phases and grounds and **Isolate** yourself from the phase you're working on.
- Never work alone on live circuits. Make your partner aware of your next move, so you don't both become part of the same circuit.
- Until positive that the circuit is dead, assume it to be live and rated at full voltage. Don't take anyone's word for it - **Test It Yourself**.
- Don't work on any electrical apparatus with wet hands or clothing.
- Don't wear rings, watches, jewelry, or metallic hard hat. Wear a hard hat with a class B minimum rating.
- Wear safety shoes with neoprene or rubber soles. Worn down shoes provide no insulation.
- **Insulation Blankets** should be used to cover all live components as well as grounds.
- Test with a magnetic voltage tester. Don't use your fingers or lamps in a series. A homemade Lampe tester can be dangerous. Lamps in a series can explode if used on too high a voltage. The flying glass could damage your eyes, and you could receive secondary injuries by a fall against the live circuit or from a ladder to the ground.

- Always be sure your portable tools are grounded through a three prong plug or double insulation. Tools should be checked before using for external shorts. Circuits used should be protected by GFCI.
- When working on the circuit, be sure to lock open the supply and disconnect switch. It should be tagged to make sure nobody tries to close it.
- Be aware of ungrounded 480 V circuits. The first ground on such a system will not cause over current protection to trip. The second ground will, but at the point of the ground a dangerous flash will occur. Know what type of circuit you are working on.

Safe Limit of Approach Distances- (See Occupational Health and Safety Code **Section 225)**
Also See Safe Work Practice – 22 Over Head Power lines.

3.29 SWP-27: OVERHEAD POWER LINES

Please review and adhere to the following procedure when planning and performing work near overhead power lines:

1. Before work begins, examine the work areas to establish that the safe limits of approach distances to overhead power lines contained in Table 1 can be maintained.
2. Contact the operator of the power line to determine the operating voltage of the line and confirm the safe approach distance.
3. Do not allow equipment or objects to approach the overhead power line closer than the safe limit of approach specified. (See below)
4. If work is being carried out near the safe limit of approach, assign a worker to act as an observer to ensure that the required distance is maintained.
5. Request assistance from the power line operator if the work must be performed at a distance that is less than those specified in Table 1.
6. Do not place materials under or adjacent to the overhead power line if it reduces the clearance above ground required by O.H. & S. Regulations. Contact the power line operator for assistance to determine the required clearance between the power line and the ground.
7. Do not allow excavations to reduce the support required for power poles. Contact the power line operator to determine support required. Request locations in case of grounding grids buried at the base of power poles.

Safe Limit of Approach Distances- (See Occupational Health and Safety Code **Section 225) Subsection 225(1)**

Safe limit of approach distances for overhead power lines are intended to prevent power line contacts, injuries and fatalities.

If work is done or equipment is operated within seven (7) meters of an overhead power line, the employer must contact the power line operator to determine the voltage of the power line. As shown in Table 17.1, the power line voltage determines the safe approach distance. Until the power line operator verifies the voltage, the employer must maintain a safe clearance distance of seven (7) meters.

Table 17.1 Safe limit of approach distances from overhead power lines for persons and equipment (appears as Schedule 4 in the OHS Code).

Operating Voltage Between Conductors of Overhead Power Line	Safe Limit of Approach Distance for People and Equipment
0-750 volts Insulated or polyethylene covered conductors (1)	300 millimeters
0-750 volts Bare, un-insulated	1.0 meter
Above 750 volts Insulated conductors (1) (2)	1.0 meter
750- volts -40 kilovolts	3.0 meters
69 kilovolts, 72 kilovolts	3.5 meters
138 kilovolts-, 144 kilovolts	4.0 meters
230 kilovolts, 260 kilovolts	5.0 meters
500 kilovolts	7.0 meters

SUBSECTION 225(1.1)

An employer must ensure that the appropriate distance as listed in schedule 4 is maintained as a limit at all times and that no worker or equipment comes any closer than that distance. This can only be varied with the permission and assistance of the power line operator in accordance with subsection 225 (2).

SUBSECTION 225(2)

Situations may arise in which work must be done or equipment operated near an energized power line at distances less than the safe limit of approach distance for that particular voltage. In such cases, the employer must notify the operator of the power line before beginning the work and obtain the operator's assistance in protecting workers involved in the work. The operator may protect the workers by de-energizing the power line, relocating it, isolating it or performing some equally effective action.

3.30 SWP-28: LIGHTING – FIXED TEMPORARY

GENERAL

- This refers to the electrical system installed for the purpose of illumination during construction. Branch lighting circuits should be kept entirely separate from power circuits except for a common supply.
- Minimum temporary lighting requirements do not include provisions for portable hand-held lamps used by various trades to illuminate their immediate work area.
- Lamps should be installed in suitable locations to illuminate the entire area. Where this is not practical, additional light should be installed over and above the minimum requirements.
- All temporary lighting is to be inspected regularly and burned out or missing lamps replaced promptly. Any lights that become obstructed by new work such as ceiling, ducts, piping, equipment, and partitions should be relocated.
- Non-metallic sheathed cable of type N.W.M. 10 should be used for branch circuits providing it is not less than No. 12 A.W.G. copper or No. 10 A.W.G. aluminum, Ensure that only co-air receptacles and switches are used with aluminum conductors and that correct procedures are observed in making joints.
- All lamp holders should be hard usage type, medium base sockets. The use of left-handed threaded lamps and sockets has been found effective.
- N.M.W. 10 cable should be secured to the structure by thermoplastic insulated solid wire on both sides the each light. The intervals between supports should be more than 1.4 meters (4'6").
- Each individual lighting branch circuit should be protected by a circuit breaker or fuse with a rating of 15 amperes and the total load per circuit should not exceed 12 amperes.
- Lighting stringers should not be plugged into a receptacle but hard-wired directly into a distribution panel.
- Loomex (house wire) may be used on a one time basis only.

HAZARDS	RANK	CONTROLS
Slips, Trips & Fall		Adequate lighting, good housekeeping

3.31 SWP-29: MOBILE EQUIPMENT OPERATION

The operation of any type of mobile equipment can be hazardous if not done properly. By following some basic rules a potentially hazardous task can be made far safer. When operating mobile equipment (i.e. Aerial Lifts, Forklifts, Telehandlers, etc…) the following rules are to be strictly adhered to:

- Before operating any piece of equipment training certification must be verified. If training is not completed it must be done prior to commencing with operation of the equipment. Contact the Safety Department to arrange for equipment training and certification;
- A circle check of the equipment including function verification must be completed and documented on a pre-use inspection form. Any deficiencies found must be reported to a supervisor immediately. If a deficiency is identified that could affect the safe operation of the equipment then the equipment must be tagged Out of Service. Refer to SJP – 405 Tag Out Procedure found in Section 4 of the ARPI'S INDUSTRIES LTD Safety Manual;
- The work area must be clear of any obstruction or hazard that could affect the safe operation of the equipment. Signs and/or barricades indicating the type of work being conducted should be erected to warn other workers in the area of a potential hazard;
- All available safety restraint devices (i.e. Seatbelts) included with the equipment must be utilized anytime the equipment is in operation;
- No equipment is to be left unattended when it is still running. Equipment must be de-energized and keys removed before the equipment is left unattended;
- When operating equipment that is designed to elevate a worker (i.e. Aerial Lift, Man basket) any worker that will be elevated must adhere to the Fall Protection Code of Practice found in Section 5 of the ARPI'S INDUSTRIES LTD Safety Manual. For man basket operations please refer to SJP – 407 Man Basket Safe Job Procedure found in section 4 of the ARPI'S INDUSTRIES LTD Safety Manual;
- All operators must ensure they are familiar with the specific model of equipment that they are to operate. Ensure that the operator's manual is available and has been reviewed;
- Any specific safe operation procedures outlined by the operator's manual must be strictly adhered to;
- When moving the mobile equipment in a pedestrian traffic area a spotter must be utilized. An effective means of communication between the operator and spotter must be verified prior to moving the equipment;
- The operator must maintain situational awareness at all times; and
- Horseplay during operation of equipment is strictly prohibited.

3.32 SWP-30: DRIVING

When driving a company vehicle it is expected that the flowing rules be adhered to:

- Ensure you have a valid operator's license.
- Be conversant with traffic laws and applicable regulations.
- Ensure compliance with distracted driving legislation.
- Drive defensively.
- Back in when practical.
- Ensure the vehicle has a first aid kit.
- Ensure you are not under the influence of drugs or alcohol.
- Avoid driving when fatigued.
- Ensure that seatbelts are worn at all times when the vehicle is being operated.
- Be familiar with the vehicle and its capabilities.
- Offering rides hitchhikers is strictly prohibited.
- Perform a "walk around" inspection prior to travelling;.
- Use good judgment and understand the basic recovery skills appropriate to the vehicle you are driving.
- Ensure you are in full compliance with distracted driving legislation at all times.
- If you are involved in a motor vehicle collision it is to be reported to your supervisor without delay.
- Ensure that when the vehicle requires maintenance it is taken to the auto shop bay located at the main office.

Failure to adhere to these basic rules will result in disciplinary action up to and including termination of employment.

3.33 SWP-31: GENIE HOIST USE

For many of the heavier and/or awkward lifting tasks on site, Genie material hoists are made available to aid in getting the job done quickly and safely. Though these are a very simple piece of equipment to use, there are some key safety tips to remember in order to avoid possible injury. At all times as with all equipment, refer to the operators manual on the machine for the best safe use practices.

- Always inspect the equipment prior to use and fill out the daily inspection log. Be sure to sign and date the log entry then keep in a safe location for future reference.
- Part of the inspection process should include a load test. This can be done by carefully observing how the mast rises under load. Should mast sections grab (next section rising before it should) while under load the Genie requires maintenance and should be tagged out of service and sent back to the shop for repairs. Note the problem in the inspection log as well.
- Anything noticed during the inspection as a safety concern or determined to be hazardous, please enter the problem in the inspection log and if necessary, tag the unit “out of service” then inform your supervisor.
- Inspect the workplace
- Only use the machine as it was intended.
- Some items that would still allow the lift to be used even though they were noted in the inspection log would be: Missing operator’s manual, damaged or missing safety stickers.

DO NOT…

a. Operate lift if lift is compromised / damaged or missing parts.
b. Operate on uneven / un-level / slippery / structurally weakened surfaces.
c. Overload the lift.
d. Use as a personnel lifting platform or step.
e. Use to support a scaffold system.
f. Operate in high winds (see operator’s manual).
g. Raise a load unless stabilizer bars are properly installed (if equipped).
h. Stand on the load handling attachments.
i. Climb on the mast.
j. Move the lift with a load in the raised position except for minor adjustments.
k. Use blocks to level the machine.
l. Raise a load unless the leg retainer pins are properly inserted through the leg and the base.
m. Remove the leg retainer pins with a load in the raised position.
n. Place ladders or scaffolding against any part of the machine.
o. Use as a ground for welding.
p. Screw or drill holes in the mast. Clamps should be used instead.

- Use common sense and planning when transporting the machine up or down a slope or ramp.

- Use proper lifting techniques when installing or removing the load handling attachments.
- Use proper lifting techniques for loading or unloading the machine.
- Be aware of the proximity of overhead power lines as machine is not grounded.
- Keep load tight to mast and centered on lifting forks.
- Watch for mast sections that are sticking. Tag out of service and send to the shop for repairs.

RECOMMENDED PPE

Safety Glasses

Gloves

Hard Hat

CSA approved work boots

HAZARDS	RANK	CONTROLS
Crush Injuries	2	Use proper PPE, Be aware of hand placement
Electrocution Hazard	3	Perform workplace inspection. Know where live power is
Strain and Sprain Injuries	2	Use proper lifting techniques at all times. Ask for help with larger loads

Note: During everyday use, keep a close eye on the mast sections and how they work together. Once you notice grabbing/sticking of sections take the unit out of service and tag the unit with the information so the shop staff can perform the proper maintenance on the unit.

As stated before, your best source of information for the safe operation of this equipment is the manufacturer's operator's manual.

3.34 SWP-32: STATIONARY MACHINERY

GENERAL

A stationary machine is defined as any type of equipment that under ordinary operating conditions would remain in one location. It may be possible to move the equipment to another location but it would not be operating during the relocation process.

The following general information is provided to assist machine operators, workers, supervisors and managers in carrying out their responsibilities for assuring machine and site/shop safety through a general list of Do's and Don'ts pertaining to the stationary machines. For more detailed information of a particular machine please refer to the manufacturers' operators manuals

TYPES OF STATIONARY MACHINES

- Duct Machine
- Band Saw
- Threading Machine
- Power Rolls
- Brakes and Shears
- Drill Press

CHECKLIST

- Ensure you have proper training prior to operating any type of machinery
- Ensure all safeguards are in place prior to starting work
- Lock out and tag any defective machinery
- Be aware of the environment and people around you prior to operating any machine

DO NOT

- Do not tamper with, remove or operate any machine without proper safeguards
- Do not wear lose fitting clothing, or jewelry that may get caught or snagged
- Do not repair or modify machinery if you are not properly trained to do so
- Do not tamper with machinery electrical components

Please refer to the Occupational Health & Safety Act, Regulation & Code
Part 25 – Tools, Equipment and Machinery

HAZARDS	RANK	CONTROLS
Damaged or Missing Safeguards	2	Stop use and lock out machine
Cuts, Crush or Pinch Points	2	Observe the above safe work practices, wear cut resistant gloves
Hearing Damage	2	Wear hearing protection
Eye Injuries	2	Wear safety glasses, goggles or face shield

3.35 SWP-33: BENCH GRINDERS

GENERAL

The following general information is provided to assist machine operators, workers, supervisors and managers in carrying out their responsibilities for assuring machine and site/shop safety through a general list of Do's and Don'ts pertaining to the stationary machines. For more detailed information of a particular machine please refer to the manufactures operators manuals.

DO's…

- Read the operator's manual carefully. Learn the applications and limitations as well as specific potential hazards related to this tool.
- Keep guard in place and in working order. Never operate the tool with any guard or cover removed. Make sure all guards are operating properly before each use.
- Remove adjusting keys and wrenches. Form a habit of checking to see keys and adjusting wrenches are removed from tool before turning it on.
- Keep the work area clean. Cluttered work areas and work benches invite accidents.
- Always wear safety glasses with side shields. Everyday eyeglasses have only impact-resistant lenses; they are NOT safety glasses.
- Protect your lungs. Wear a face or dust mask if the grinding operation is dusty.
- Protect your hearing. Wear hearing protection during extended periods of operation.
- Never leave running tool unattended. Turn power off. Disconnect all tools when not in use, or before servicing, or when changing attachments, wheels, etc.
- Check and know the direction of feed. Be aware of wheel rotation direction; never grind without the work rest being properly set. Never grind more than one work piece at a time.
- Check damaged parts. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged must be properly repaired or replaced by an authorized service center to avoid risk of personal injury.
- Never reach to pick up work piece, a piece of scrap, or anything else that is in or near the grinding path of the wheel.
- Avoid awkward operations and hand positions where a sudden slip could cause your hand to move into the wheel. Always make sure you have good balance.
- Use only flanges furnished with this bench grinder.
- If any part of this grinder is missing or should break, bend, or fail in any way, or should any electrical component fail to perform properly, shut off the power switch, remove the machine

plug from the power source and have damaged, missing, or failed parts replaced before resuming operation.

- Make sure that the grinder is securely mounted as described in the operating instruction before connecting the tool to a power supply.
- Inspect grinding wheel for visible defects. Check the wheel for fissures and cracks. Replace defective wheels prior to use.
- Adjust distance between wheel and work rest to maintain 1/16in or less separation, readjustment is necessary as the diameter of the wheel decreases with use.
- Always ease the work piece against the abrasive wheel when starting to grind. A harsh impact can break the wheel. Use light pressure when starting to grind; too much pressure on a cold wheel can cause the wheel to crack.
- Always hold work piece firmly against the work rest.
- Frequently clean grinding dust from beneath grinder.

DON'Ts…

- Don't use the power tools near gasoline or other flammable liquids, in damp or wet locations or expose them to rain. Keep work area well lighted.
- Don't force the tool. It will do the job better and safer at the rate for which it was designed.
- Do not wear loose clothing, neckties, or jewelry that can get caught in the tool's moving parts and cause personal injury. Wear protective hair covering to contain long hair.
- Don't abuse the cord. Never carry tool by the cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
- Do not overreach. Keep proper footing and balance at all times.
- Do not use wheels with incorrect size holes. Never use wheel washers or wheel screws that are defective or incorrect and never touch grinding wheel or other moving parts.
- Do not use tool if switch does not turn it on and off.
- Do not turn the motor switch on and off rapidly. This could cause the wheel to loosen and could create a hazard. Should this ever occur, stand clear and allow the wheel to come to a complete stop. Disconnect your grinder from the power supply and securely retighten the wheel nut.
- Do not over tighten the wheel nut. Excessive tightening can cause the wheel to crack during operation.
- Do not start the grinder when the wheel is in contact with the work rest.
- Do not use the bench grinder if the flange nut or clamp nut is missing or if the spindle shaft is bent.
- Do not operate this tool while under the influence of drugs, alcohol, or any medication.

- Do not allow familiarity gained from frequent use of the grinder to cause a careless mistake. Always remember that a careless fraction of a second is sufficient to inflict severe injury.
- Do not operate tool when you are tired. Do not rush. Watch what you are doing and use common sense.

Please refer to the Occupational Health & Safety Act, Regulation & Code
Part 25 – Tools, Equipment and Machinery

HAZARDS	RANK	CONTROLS
Damaged or Missing Safeguards	2	Stop use and lock out machine
Cuts, Crush or Pinch Points	2	Observe the above safe work practices, wear cut resistant gloves
Hearing Damage	2	Wear hearing protection
Eye Injuries	2	Wear safety glasses, goggles or face shield

3.36 SWP-34: POWER PUNCH PRESS

GENERAL

The following general information is provided to assist machine operators, workers, supervisors and managers in carrying out their responsibilities for assuring machine and site/shop safety through a general list of Do's and Don'ts pertaining to the stationary machines. For more detailed information of a particular machine please refer to the manufactures operators manuals.

- # 15 – Power Punch Press (RES Shop)
- # 21 – ROUSSELLE Punch Press (RES Shop)
- # 68 – MUBEA Hydraulic Punch Press (CSM Shop)

DO's…

- DO obtain (*and understand*) operating and safety instructions from your employer before operating the Press.
- DO use safety tools, fixtures and supporting devices for loading and unloading especially in narrow forming, piercing and notching operations. If long, wide sheets need to be held during forming operations, and then support the material from below with open palm of hand, keeping fingers and thumbs below the material.
- DO leave ram at bottom of stoke when not operating the machine.
- DO leave selector switches in safest position.
- DO disengage clutch, stop drive motor, open disconnect switch, and allow flywheel to come to rest before making any adjustments, repairs, replacements, or leaving the machine. If necessary to position the ram above the bottom of the stroke, always support the ram by inserting safety blocks between bed and ram. Ensure safety blocks are adequate.
- DO protect auxiliary shop equipment so as to preclude and hazard to the operation of a machine. E.g., provide skirts around the bottom of stools and rolling loading tables so they cannot jam or actuate the clutch mechanism of any machine.

DON'Ts…

- DON'T eliminate or bypass any of the safety devices installed on the machine.
- DON'T place fingers, hands, arms, elbows, heads (or even feet) in the dangerous die area or near any other moving part. Do not reach into die area to lubricate tooling. Do use long-handle brushes, swabs, rollers, etc., or remote lubrication arrangements.
- DON'T "tie down" clutch actuating devices to provide continuous operation.
- DON'T tamper with factory-wired setting of any safety valve.
- DON'T rotate flywheel under power unless flywheel guards are in place.

- DON'T stand or sit on anything while feeding machine that could cause you to fall, slip or stumble into die area under ram.
- DON'T stores die bars, or the like, in gap of machine, where they could fall into the ram stroke area.
- DON'T operate machine on leveling screws or skids. Bolt securely and directly to foundation.
- DON'T become careless or overconfident. Avoid pre-occupation, inattention, distraction, and talking. Do not become lulled by the rhythm of an operation.

DAILY SAFETY CHECKS

The first daily check the user should make is on the work the press is to perform that particular day. It should be determined whether or not to change in work will require a change in point-of-operation safety devices. If the use of the press, or the tools, or the dies has changed the operation safety requirements: the change should be noted, and appropriate safety devices should be fixed or attached to the press before the day's operations are started.

- Before closing disconnect switch to turn on power, clean machine and inspect carefully for loose, worn, damaged, or broken parts, paying particular attention to linkages, oil lines, belts and springs.
- Inspect machine and dies for safe operating condition. Remove tools, parts, etc., from working area.
- Check operating devices and safety guards for proper placement, adjustment, and condition.
- Check clutch and break for proper operation.
- Maintain close inspection of the machine operation for overloading. Accidental or intentional operation above the maximum rated capacity results in excessive wear and abuse of machine and dies.
- NOTE – Capacity is based upon an evenly distributed load.
- Report any questionable operation or unusual action of the machine to your shop foreman or supervisor. Report any increasingly excessive bearing and gear noise.

FOR PRESSES WITH ELECTRIC CONTROLS

- At the start of every shift check the action of the clutch and break; and correct ram cycle sequence in response to the various selector switch settings on the control panel. If the equipment does not function properly; or if in operation the machine will not cycle after completing its selected cycle sequence, have maintenance man check electrical and air circuits.
- Check air pressure gauge to ensure that the leave-in pressure being supplied is adequate.

Please refer to the Occupational Health & Safety Act, Regulation & Code
Part 25 – Tools, Equipment and Machinery

HAZARDS	RANK	CONTROLS
Damaged or Missing Safeguards	2	Stop use and lock out machine
Cuts, Crush or Pinch Points	2	Observe the above safe work practices, wear cut resistant gloves
Hearing Damage	2	Wear hearing protection
Eye Injuries	2	Wear safety glasses, goggles or face shield

3.37 SWP-35: RIVET SETTING MACHINE

GENERAL

The following general information is provided to assist machine operators, workers, supervisors and managers in carrying out their responsibilities for assuring machine and site/shop safety through a general list of Do's and Don'ts pertaining to the stationary machines. For more detailed information of a particular machine please refer to the manufactures operators manuals.

- # 10 – Thomson Rivet Setting Machine Style 161 (RES – CSM Shop)

DO's…

- Do locate the machine on a solid level footing that is free of debris.
- Do ensure that the rivets are kept free of rust, corrosion, foreign matter and possible mixing with other rivets, they should be stored in covered bins or boxes free of moisture.
- Make sure that the correct length rivet is being used. Too long or too short a rivet that is being clinched too tightly can result in damage to job and tooling.
- Oil machine areas indicated by the red spots, at regular intervals. Frequency of oiling is dependent on machine usage. Once a week is a general recommendation.
- Do keep the hopper track system free of oil and foreign matter to ensure proper feeding of rivets.
- Do shut down the machine when the operator leaves for extended periods.
- Do check for double tripping (*"**Double Tripping**" – means that when the foot pedal is depressed **once** machine will repeat cycle*). Regular double tripping checks are important because it is very dangerous condition and should be rectified immediately. If not corrected, it could result in serious injury to the operator, also job and machine tooling may be damaged or broken.
- Do check for the stem alignment with the anvil alignment regularly to ensure rivet clinch and to avoid damage to job and machine tooling.
- Do turn the machine over by hand after completion of any repairs to ensure that there is free and easy movement throughout machine.

DON'Ts…

- Do not put too much oil on the pocket bar and plunger, excessive oiling of these areas will run down stems and pockets and possibly hinder the flow of rivets.
- Do not oil the hopper.
- Do not fill the hopper ring beyond the halfway point.
- Do not use VARSOL to remove oil, flush out track system with a fluid that will not leave a film.
- Do not use a screwdriver or similar hard object in the event of a rivet jam in the tracks; a soft material should be used to free them.

Please refer to the Occupational Health & Safety Act, Regulation & Code
Part 25 – Tools, Equipment and Machinery

HAZARDS	RANK	CONTROLS
Damaged or Missing Safeguards	2	Stop use and lock out machine
Cuts, Crush or Pinch Points	2	Observe the above safe work practices, wear cut resistant gloves
Hearing Damage	2	Wear hearing protection
Eye Injuries	2	Wear safety glasses, goggles or face shield

3.38 SWP-36: SLIP AND POWER ROLLERS

GENERAL

The following general information is provided to assist machine operators, workers, supervisors and managers in carrying out their responsibilities for assuring machine and site/shop safety through a general list of Do's and Don'ts pertaining to the stationary machines. For more detailed information of a particular machine please refer to the manufactures operators manuals.

- # 11 – Slip Roller 32 in. (RES Shop)
- # 12 – Small Power Roller 32 in. (RES Shop)
- # 54 – Power Roller 4048 (CSM Shop)
- # 62 – Slip Roller 32 in. (CSM Shop)

CHECK LIST

- No one is allowed to use the **Power Rollers** without the permission of the shop supervisor.
- Only those with adequate shop experience are allowed to operate the **Power Rollers**.
- The **Power Rollers** is controlled by either of a foot pedal switch or a directional selector switch. They have both forward and reverse feed direction. ***Power Roller # 54*** is not to be operated without using the foot pedals. The selector switch of the ***Small Power Roller # 12*** also serve as the On and Off switch, it has three (3) position switches – Reverse On, Off and Forward On.
- At no time is anyone allowed to tamper with the foot pedals by jamming something into the pedal housing to keep the rollers running. This would be deemed a safety violation and an employee caught doing this would be written up.
- In the event that something goes wrong, releasing the foot pedal or putting the selector switch to Off position to stop the machine instantly.
- Be aware of everything going on around you. You do not want to be bumped or run into by somebody moving a material while operating these equipment's.
- Depending on the size of material being rolled and amount of traffic in the shop, a caution tape could be used to cordon the area around the rollers.

DO NOT

- Do not tamper with, remove or operate any machine without proper safeguards.
- Do not wear lose fitting clothing, or jewelry that may get caught or snagged.
- Do not repair or modify machinery if you are not properly trained to do so.
- Do not tamper with machinery electrical components.

Please refer to the Occupational Health & Safety Act, Regulation & Code

Part 25 – Tools, Equipment and Machinery

HAZARDS	RANK	CONTROLS
Damaged or Missing Safeguards	2	Stop use and lock out machine
Cuts, Crush or Pinch Points	2	Observe the above safe work practices, wear cut resistant gloves
Hearing Damage	2	Wear hearing protection
Eye Injuries	2	Wear safety glasses, goggles or face shield

3.39 SWP-37: TRENCHES AND EXCAVATION

Trenching on job sites is very common, and we recognize that workers in the trench have to be protected. A necessary consideration in planning trench work is preventing cave-ins and soil movement in the trench.

- All trenching and excavations shall be in accordance with the applicable Occupational Health and Safety regulations.
- Buried underground services such as gas lines, water lines, sewers, and electrical services must be located and marked before excavation starts.

Note: Always request underground locations before you dig. When trenching near overhead power lines, contact the utility operator for safe approach distances. Refer to Overhead Power lines – Job Procedure in the company Safety Manual. When trenching near power poles, request locations in case of grounding grids buried at the base of the power poles.

- Mechanical or power excavating is to be used only in locations where there is no danger of contacting or damaging buried facilities.
- Employees shall not enter trenches or excavations more than 1.5 m (5 feet) unless:
  a. The walls of the excavation have been cut back to less than 4.5 m in accordance with Occupational Health and safety regulations. Where cut back is required, the wall must be cut back at least:
     1. In hard compact soils - 30° from the vertical
     2. In other soils – 45° from the vertical.
  b. Temporary protective structures such as an approved cage or proper shoring is in place.
- Frozen ground shall not change the requirement of the regulation to provide temporary protective structures or cutting back the walls of the trench except where freezing is a design specification to control a fluid condition and then only in accordance with the professional engineer's specifications and instructions.
- The site Foreman shall ensure that:
  1. The spoil pile is kept a minimum of one meter from the edge of excavations deeper than 1.5 m (5 feet) and;
  2. Heavy vehicles or objects are kept away from the excavation a distance equal to the depth of the excavation unless the shoring has been certified as being able to withstand such weights.
- Employees shall not place or stack tools or material near the edge of the excavation where their falling could cause injury to employees in the excavation.
  1. Employees installing shoring, stringers or bracing shall use a ladder and work downward from the top of the excavation, installing each brace in descending order.

2. When timber shoring is used, it must be installed progressively as the trench is being excavated.
3. Employees removing shoring, stringers or bracing shall use a ladder and work upward from the bottom of the excavation, removing each brace in ascending order.

- The company shall provide for each trench more than five feet (1.5 meters) deep, in which the employees are working, not less than one ladder for each fifty feet (15 meters) of working length of the trench or fraction thereof. The ladder shall extend at least three feet (0.9) meters above the top of the trench.
- Excavations which workers are required to enter should be kept reasonably free of water.
- No more trenching than absolutely necessary shall be left overnight. When trenches are left open, they must be barricaded or guarded to protect the public and employees.

Refer to the OH & S Act, Regulation and Code- **Part 32: Excavating and Tunneling** for more information.

HAZARDS	RANK	CONTROLS
Asphyxiation	3	Follow the above recommendations
Cave in, crush Injuries	3	Follow the above recommendations

3.40 SWP-38: EXCAVATING NEAR UNDERGROUND UTILITIES

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

Underground Utilities are hidden hazard that are often encountered during excavation operations.

To ensure the safety of all persons in the construction area and to eliminate needless repair costs, please adhere to the following practice:

- Always request underground locations before you dig. Even if you are sure there are no lines in the area, call to confirm.
- When excavating inside an existing structure or where there is an existing concrete slab:
    - The concrete slab must be scanned prior to any cutting and/or breaking activities commence.
    - Any utilities identified that have not been abandoned must be disabled and/or re-routed prior to any cutting and/or breaking activities commence.
    - Once the concrete is removed the ground must have locates completed prior to excavation work commencing.
- All locates are valid for only 30 days (unless specified otherwise). If excavation work is to continue past 30 days then new locates must be completed.
- Locates with associated dates (both completion date and expiry date) and the locations they cover must be noted on the FLHA and the Ground Disturbance Permit.
- Hand digging must be performed when working within 600 mm of buried utility lines or greater as requested by the utility owner.
- If a utility line is struck, **stop work immediately** and act to ensure the risks to people and property are kept to a minimum. (This may mean isolating the area from persons and equipment until the authorities arrive).
- Have the utility company notified.
- If the damage has the potential of being serious, contact the supervisor who will in turn contact O.H. & S. officers and other authorities as required.
- Verify the damage area by taking pictures and making notes of the situation. If the utility line damage appears to be in an incorrect easement, collect any information that could be used in case of a dispute. (I.e. elevations, alignment, etc.).
- Complete a company damage report including a diagram and forward to the supervisor as soon as possible.

Locates of underground utilities must be identified by contracted locators. No excavation shall be done without locates – NO EXCEPTIONS!!

ALBERTA ONE CALL

1-800-242-3447

3.41 SWP-39: HOUSEKEEPING

- Work locations, vehicles and buildings shall be kept clean and orderly at all times.
- Combustible materials, such as oil soaked rags and waste, shall be kept in approved metal containers.
- Flammable liquids such as gasoline, benzene, naphtha, paint thinner, etc., shall not be used for cleaning purposes.
- All solvents shall be kept in CSA approved, properly labeled containers. Gasoline, benzene, naphtha, paints thinner and other solvents of this class shall be handled and dispensed only from approved, properly labeled containers.
- Floors and platforms shall be kept free of dangerous projections or obstructions and shall be maintained reasonably free from oil, grease, or water. Where the type of operation produces slippery conditions, the area shall be cleaned immediately, or mats, grate, cleat or other methods shall be used to reduce the hazard of slipping.
- Materials and supplies shall be stored in an orderly manner so as to prevent their falling or spreading, and to eliminate tripping and stumbling.
- Emergency exits, stairways, aisles, permanent roadways, walkways, and material storage shall be identified and kept clear at all times.
- Materials and supplies shall not be stored in such a manner as to block access to fire equipment.
- No clothing shall be allowed to hang on walls, behind doors or in the space behind switchboards. No matches shall be left in clothes or placed on lockers. Rubbish and unused clothing shall not be allowed to accumulate in lockers.
- Waste material and debris should be removed from work and access areas on a regular basis or at least once a day. Waste material and debris should not be thrown from one level to another but carried down, lowered in containers or deposited in a disposal chute.
- In any building, except one provided for their storage, flammable liquids such as gasoline, benzene, naphtha, paint thinner, etc. shall be limited to 5 gallons, in the UL approved, properly labeled containers.
- Rule 11 does not apply to kerosene and cleaning agents of the "Stoddard" solvent class; however, not more than 1 gallon of such liquids shall be kept in any open container. The container shall be provided with proper cover and be kept securely covered except when in use.
- When pouring or pumping gasoline or other flammable liquids from one container to another, metallic contact shall be maintained between the pouring and receiving containers.
- Strict adherence shall be paid to "no smoking", "stop your motor", and “no cellular devices” signs at fuel dispensing locations.

3.42 SWP-40: MATERIAL MOVEMENT AND STORAGE

- Conduct a hazard assessment prior to any material handling activities starting
- Locate an appropriate storage area.
- Ensure your chosen path and any stairwells are clear of obstacles and workers.
- Use carts or other mechanical means whenever possible.
- Use proper lifting procedures (ex: Back straight, bend knees, get help with heavy or awkward loads.)
- Proper ergonomic lifting and material handling practices will be trained during new hire orientations and annually through structured safety meeting talks.
- Keep large, heavy, and awkward materials on pallets so a pallet jack can be used for easy movement.
- Keep pallet jack wheels and storage area clear of dust and debris.
- When the chosen storage area could possibly be exposed to windy conditions all material is to be secured in a manner that will prevent dislodgement.

HAZARDS	RANK	CONTROLS
Pinch Point	2	Follow the above recommendations
Cuts	2	Wear cut resistant gloves
Strain/Sprain	2	Proper lifting techniques. Substitute with mechanical means when possible

3.43 SWP-41: EXPOSURE TO HEAT

INTRODUCTION

Hot working conditions are found in various industrial processes and on outdoor worksites for a short time each year in Alberta.

The human body functions most efficiently within a fairly narrow range of temperatures. At 2°C above or below 37°C additional stresses put on the body to regulate itself; for example, shivering to keep warm or perspiring to keep cool. The main way in which the body cools itself is by perspiring; this perspiration is then evaporated from the skin providing a cooling effect. If the fluid lost through perspiration is placed at a rate similar to the loss, very few health effects will occur. However, when there is a net loss of body fluid, workers may become dizzy, durable and inattentive, which may make them more likely to have accidents. High humidity prevents perspiration from evaporating, with the result that the body cannot cool itself. The combination of high temperature and high humidity may lead to more serious heat related problems. The problem may be further aggravated when wearing heavy protective clothing.

PREVENTION

Environmental Measures:

- An occupational hygiene survey should be done to see if there are any measures that can be taken to control severe indoor heat. These measures may include:
  a) Isolating workers from heat, e.g. by using air-conditioned booth or automating the process.
  b) Screening the heat source, e.g. using movable or permanent heat reflecting screens, checking the position and efficiency of fans and air blowers, lowering the humidity.

Personal Measures:

- Fluids should be provided and workers should be encouraged to take frequent drinks. The feeling of being thirsty alone may not be enough to ensure sufficient intake, 200-300 mL per hour (1 cup) may be needed. These fluids should be water (cool not cold), diluted fruit juice, tea or lemon. Drinks that provide replacement of electrolytes and sugars such as Gatorade may be needed.
- It is important to replace the amount of fluid lost through perspiring on each shift. One quick way of measuring is to take the workers wait before and after each shift. Each 0.453 kg (1 lb.) of weight loss requires 500 mL of fluid replacement. The fluid should be taken at a rate no faster than 2 cups per hour to avoid abdominal cramps.
- The normal salt content of food is usually sufficient to replace the salt lost through perspiring. Salt tablets or saline (salt drinks) should only be provided on the advice of a physician.

- Clothing should be light in weight and color; it should also be loose and of a fabric that will allow perspiration to evaporate (e.g. cotton). In some jobs, it may be necessary to wear protective clothing, goggles, gloves and boots to provide the screen from the heat source.
- Outdoor workers should wear appropriate clothing and sunglasses to screen out the sun. Additional measures include wearing sunscreen-the number on the label indicates the level of protection provided. The higher the number, the higher the protection. Very fair skinned people may need to use a 25 or higher sun block lotion.

The prevention of rest breaks in a cooler area is an extremely effective means of preventing heat related health problems. Recommendations for these breaks are based on the wet-bulb (WB GT) readings. These readings provide a measure of the combined effect of heat and humidity. At a given temperature, the higher the humidity, the greater the heat stress. As pointed out above, high humidity prevents perspiration from evaporating and the body cannot cool itself efficiently.

Acclimatization to heat can be achieved by gradually increasing the length of exposure over the period of 4-7 days. Physically fit workers adapt to heat far more quickly than unfit ones. However, this acclimatization is lost very quickly. One week away from heat will require a worker to re-acclimatize.

Heat rash (prickly heat) can be prevented by resting in cool places at regular intervals and showering after each work shift.

CAUTIONS

- Workers with high blood pressure or kidney problems should definitely not use extra salt or salt tablets unless directed by a physician.
- People who have chronic disease, are obese, pregnant, elderly, or abuse alcohol usually develop problems from heat exposure more quickly than others.
- Do not drink more than 2-3 cups of fluid, doing this can cause stomach cramps.
- Alcohol, coffee, cola or other carbonated drinks containing caffeine increase the amount of urine passed and should be avoided by people who are perspiring profusely.
- Anyone who has previously suffered from heat stroke has an increased sensitivity to heat and should avoid exposure as much as possible.

HEAT RASH (PRICKLY HEAT)

Tingling and burning of the skin, red itchy rash. Most likely in hot humid environment where the skin is wet most of the time. Cool showers, thorough drying and calamine lotion help to alleviate the condition. Shower often and wear clothing to absorb perspiration and wicked away from the body so it can evaporate.

HEAT CRAMPS

Painful spasms of the muscles that do the hardest work. This can occur during or after working hours. Take a glass of water with 1/2 teaspoon salt and massage the muscles causing the pain. Warm-up muscles before heavy work to avoid cramping.

FAINTING

If fainting is a problem, avoid standing still in one position. Move around and scratch to improve circulation. Drink enough fluids to replace that lost by perspiration.

HEAT EXHAUSTION

Signs of exhaustion are tired, weak, dizzy, clammy skin and slow weak pulse. Complexion will be pale or flushed. Lie down with knees raised and take cool fluids. If no rapid improvement of condition occurs or the person has a known heart condition, contact a physician.

HEAT STROKE

- Usually the victim stops perspiring. Temperature is high (40°-43°) hot, dry skin, confused, the person must be taken to the hospital as quickly as possible.
- Cooling should be started before moving, and on the way to the hospital, soak victims' clothes and fan. If transport is delayed, cool rapidly to 39°C, then slow cooling. Massage the limbs to encourage blood flow.

3.44 SWP-42: EXPOSURE TO COLD

INTRODUCTION

- Many Alberta workers may be exposed to cold temperatures while working outdoors during the winter, but exposure can also occur in indoor situations such as refrigeration and cold storage work as well.
- In a cold environment, body heat must be conserved to maintain the core temperature at normal levels and to ensure an adequate blood flow to the brain and extremities. Feelings of cold and discomfort should not be ignored, since these may be early warning signals. The effects of cold are such that problems can occur before the worker is aware of them, and furthermore; over-exposure to cold may affect judgment. People should not work alone; the "buddy system" enables them to observe each other for early signs of frostbite or hypothermia (loss of body heat). Even temperature is above freezing can cause problems, especially if the person is wet and exposed to cold and wind for a long period of time.
- An additional factor to consider is that workers can become fatigued earlier due to the need to produce more body heat and due to the bulk or weight of extra clothing which is worn in cold environments.
- The hazards of working in cold conditions may be avoided if proper protective measures are taken.

PREVENTION

Environmental Measures

Steps should be taken to protect workers from wind (or indoors, from drafts) because the cooling power of wind results in a much lower equivalent temperature than the actual temperature when there is no wind. For example, under COM conditions (little or no wind) the equivalent temperature is the same as the temperature shown on the thermometer, say -23°C. Therefore, the combination of wind and temperature must always be considered when assessing cold environments. **TABLE 1** shows the interaction between the wind and temperature and indicates when exposed flesh begins to freeze.

Personal Measures

DIET because workers in cold environments consume more calories, a diet high in fat and carbohydrates may help in the maintenance of body temperature. (For example, foods such as pastor, potatoes, rice, dairy products, nuts, fat meat, herring and salmon). Warm drinks may be taken during rest breaks. If heavy work is being done, it is important to drink enough fluids to replace the fluid lost through breathing and perspiration because dehydration increases the risk of hypothermia.

CLOTHING

Clothing should be comfortable, durable, and highly visible and to afford protection. A three layer system has been found to be the most effective. The inner layer absorbs body moisture and keeps away from the skin. Long underwear of wool or chlorofiber is ideal (besides having excellent insulation properties, chlorofiber is non-flammable).

The second layer is an insulating one which keeps a layer of trapped air around the body. Wool, synthetic or waterfowl down are suitable fabrics. The third layer protects the previous layer from dust, dirt, wind and moisture. However, it must be possible to remove this layer to prevent the buildup of body heat. Cotton twill, that has been made water and wind proof, is ideal for this layer. Nylon and synthetics are good, but can develop an electrostatic charge.

Proper hand and foot wear are essential components of cold weather clothing. Mittens and gloves should have removable insulated liners. Liners that cannot be removed and dried every day will gradually absorb moisture that is practically undetectable. This moisture will speed up the loss of body heat, considerably increasing the possibility of cold injuries. Boots should be made of the insulated type and have a removable insole area as they work well with wool, nylon blend or chlorofiber socks.

If heavy perspiration has taken place, it is very important to exercise caution in removing outer clothing while resting outdoors in order to avoid severe chilling and possible hyperthermia area clothing that has become what should be changed as soon as possible and it is wise to keep a change of clothing available.

Snow should be removed from outer clothing before going into a warm environment, otherwise the snow will melt and the clothing will be wet when going out into the cold again.

A schedule for regular rest breaks should be established to allow workers to warm up. These breaks should not be less than 10 minutes in length and should be taken in a heated area. Other clothing should be removed to prevent perspiration when indoors, which may cause chill when going out into the cold again.

TABLE 2 presents a recommended schedule of maximum work times, which should be followed by a rest, before the next work period. The table takes into account the combination of wind and temperature, and applies to moderate to heavy work of David. The note at the bottom of the table explains how to adjust for lighter work activity.

- The schedule applies to moderate to heavy work activity with warm-up breaks of 10 minutes in a warm location. For light to moderate work (limited physical movement): apply the schedule one step lower. For example, at 30°F with no noticeable wind (step four), a worker at a job with little physical movement should have a maximum work of 40 minutes (step five), because he/she generated less body heat when he/she is less active and therefore, will get colder sooner.

The following is suggested as a guide for estimating wind velocity; given accurate information is not available:

- 8 km/h: light flag movers
- 16 km/h: light flag fully extended
- 24 km/h: raises newspaper sheet
- 32 km/h: blowing and drifting snow

CAUTIONS

- Alcohol intake should be avoided when exposed to cold environments. Alcohol produces a deceptive feeling of warmth and can affect circulation, particularly to the extremities.
- Workers with health conditions which affect normal body temperature regulation or cause circulation problems, e.g. Raynaud's disease, diabetes thrombophlebitis, should avoid working in the cold.
- Workers who have previously suffered from frostbite will remain extremely sensitive to cold and should avoid further risk of frostbite.
- If loose or bulk clothing is worn, special care should be taken when working around moving equipment or machinery to prevent clothing from becoming entrapped.

CONDITIONS AND SIGNS

Frostbite: Loss of sensation, cold, pale, waxy skin. To treat, warm frostbitten area quickly, immersing in warm water for about 20 to 30 minutes. **Do Not Rub** and be careful to avoid burns because the frostbitten skin becomes sensitive in temperature. Get medical aid if there is no return of feeling.

Trench Foot/Immersion Foot: Intense pain in foot, with swelling. Discoloration of the skin may be caused by long immersion in cold water. Water temperature does not need to be below freezing to cause trench foot. Prevent further exposure, warm and dry the feet and get medical aid.

Hypothermia: Cold extremities which are non-responsive and/or clumsy; severe shivering; reduced mental alertness with your ability and lack of concentration; unusual or bizarre behavior may occur. Loss of consciousness, coma and death can occur if not treated. Remove the person from the cold water to prevent further exposure and wrap them in blankets. In more serious cases, immersing in warm water or place stripped victim in a sleeping bag with one or two stripped warm people to provide body heat. Contact medical aid for advice and assistance as soon as possible.

Table 1

Cooling Power of Wind on Exposed Flesh Expressed As Equivalent Temperature

Estimated Wind Speed in KPH	Actual Temperature Reading (°C)											
	10.0	4.4	-1.1	-6.7	-12.2	-17.8	-23.0	-29.0	-34.0	-40.0	-46.0	-51.0
	Equivalent Chill Temperature											
Calm	10.00	4.4	-1.1	-6.7	-12.2	-17.8	-23.0	-29.0	-34.0	-40.0	-46.0	-51.0
8	8.9	2.8	-2.8	-8.9	-14.4	-20.6	-26.1	32.2	34.4	-43.8	49.4	55.5
18	4.4	2.2	-8.9	-15.6	-22.8	-31.0	-36.1	-43.3	-50.0	-56.4	63.8	70.5
24	2.2	-5.6	-12.6	-20.6	-27.7	-37.8	-42.7	-50.0	-57.7	-65.0	-72.7	-80.0
32	0	-7.8	-15.6	-23.3	-31.7	-39.4	-47.2	-55.0	-63.3	-71.1	-78.8	-85.0
40	-1.1	-8.9	-17.8	-26.1	-34.0	-42.2	-50.5	-58.8	-66.6	-75.5	-83.3	-91.6
48	-2.2	-10.6	-18.9	-27.7	-36.1	-44.4	-52.7	-61.6	-70.0	-78.3	-87.2	-95.5
56	-2.8	-11.7	-20.0	-28.9	-37.2	-46.1	-55.0	-63.3	-72.2	-80.5	-89.4	-98.3
64	-3.3	-12.2	-21.0	-29.4	-38.3	-47.2	-56.1	-65.0	-73.3	-82.2	-91.1	-100.0

Winter speeds greater than 64 kph have

Little Danger If exposure is for less than an hour and skin and clothing are dry. However, workers should be aware of a false sense of security.

Increasing Danger exposed flesh may freeze with one minute.

Great Danger Exposed flesh may freeze within 30 seconds.

(Adapted from a table developed by the U.S. Army Research Institute of Environmental Medicine)

Table2

Work Warm-Up Schedule for Work in Cold Environments

Air Temperature-Sunny Sky		No Noticeable Wind	8 kph Wind	16 kph Wind	24 kph Wind	32 kph Wind
-26°C to -28°C	-15°F to 19°F	Normal work hours and break periods	Normal work hours and break periods	75 Minutes	55 Minutes	40 Minutes
-29°C to -31°C	-20°F to -24°F	Normal work hours and break periods	75 Minutes	55 Minutes	40 Minutes	*30 Minutes
-32°C to -34°C	-25°F to -29°F	75 Minutes	55 Minutes	40 Minutes	*30 Minutes	Non-emergency work should cease
-35°C to -37°C	-30°F to -34°F	55 Minutes	40 Minutes	*30 Minutes	Non-emergency work should cease	
-38°C to -39°C	-35°F to -39°F	40 Minutes	*30 Minutes	Non-emergency work should cease		
-40°C to -42°C	-40°F to -44°F	*30 Minutes	Non-emergency work should cease			
-43 & Below	-45°F & Below	Non-emergency work should cease				

*At these conditions, there is a danger that exposed flesh may freeze, and appropriate covering and precautions must be used .
(Developed by Occupational Health & Safety Division, Department of Labour, Saskatchewan.)

3.45 SWP-43: OFFICE SAFETY

All members of the staff are reminded that they too have a legal obligation to ensure that they do not work or conduct themselves in a way which will endanger the health and safety of themselves or anyone else. The following points are intended to draw attention to the hazards and dangers which are commonly found in offices and to give some guidance on how accidents can be prevented.

ASSESSMENT OF RISK
Employers are required to carry out risk assessments on all hazards which may pose a significant risk.

FALLS
- The majority of accidents in an office are due to falls. Falls generally result from untidiness in the working environment such as leaving equipment and files lying on the floor, trailing flexes such as telephone wires or electrical cables, worn or damaged floor coverings, stair treads and risers, spilt liquids and from standing on chairs or boxes instead of using proper steps and ladders.
- Staff also have a duty to ensure that, if in the course of their work they will have to use steps or ladders to reach files stored on the upper shelves of filing racks, they have available for use a sensible pair of shoes and do not attempt to climb up in unsuitable shoes.

LIFTING AND CARRYING
- If the load is on the floor or low down always bend your legs and lift with the back straight. Do not attempt to lift or carry too much at a time. If moving heavy loads about for any distance, always use a trolley to avoid putting undue strain on the back.
- Do not attempt to carry more than you can comfortably manage. Do not carry so much that you cannot see where you are going. Be especially careful when negotiating stairs while carrying things. Always use the handrail and don't carry so much that you are unable to do so.
- Do not place or leave any objects in passages or on stairs which could cause someone else who is carrying something to walk into or fall over them.

WALKING
- It is essential that staff obey the golden rule - 'WALK - DON'T RUN!" Running can cause an accident to yourself or to someone else. Be especially careful on stairs. Ensure that you only take one step at a time and hold onto the railing. Pay special attention if you suspect that the floors have just been polished and may still be slippery. If you find a floor surface that is slippery report it as a hazard and warn other staff.
- Be particularly careful with swing doors, especially heavy entrance doors. Do not follow someone else too closely who may not be aware of your presence and let the door swing into you. Always ensure that there is nobody following you before releasing a swing door behind you. Pay special attention to any member of the public or child in the vicinity of a swing door as they may not be as aware of the potential danger as you are.
- If you discover worn surfaces or coverings on the floor or stairs, obstacles placed in walkways or passages, or trailing wires or cables, report them to your Supervisor or the Safety Department.

OFFICE EQUIPMENT

- Generally normal office equipment is not in itself dangerous, provided it is used sensibly and as intended.
- Filing cabinets can be very heavy when full, so to avoid overturning, only one drawer at a time should be opened and drawers should always be closed when not in use. Try to spread the load evenly between the drawers and preferably to put more into the lower drawers than the top as this helps to prevent overturning. Filing cabinets should be positioned so there is ample room available when the drawers are fully opened, both for working space at the cabinet and for passing by.
- Nothing should be stored on top of high filing racks or without adequate support at the ends. Storing items on the top of a rack makes them too difficult and dangerous to retrieve, even using steps. Heavy objects such as bricks or blocks should not be placed on racks, and particularly not on the higher shelves or on the top of racks, to keep files upright or to act as end stops because of the obvious danger of their falling off onto someone. Similarly racks should never be moved while loaded or with loose objects on the shelves or top of the racks. Wooden furniture which is damaged or splintered should be reported. Be particularly careful with metal furniture which may have sharp edges on shelves or drawers.

MACHINES

- Most offices contain electrically operated machines and the attendant electrical wiring and supply. Always ensure they are operating correctly. If there is any reason to think that a machine is not operating properly, disconnect it and do not use it until it has been checked and serviced. Always switch off electrical machines when not in use and disconnect before leaving the office for any length of time and especially at lunchtime or in the evening.
- If you are expected to use or carry out routine servicing on a machine, even just cleaning it out, make sure you fully understand how to operate it and carry out any servicing routine. If chemicals or dyes are involved, always use protective clothing. Never attempt to carry out repairs to a machine yourself and only carry out routine servicing to a machine if you have been properly trained to do so.

OBSTRUCTIONS

General tidiness in the office is essential to ensure safety and efficiency as well as safeguarding the visual appearance of the office. All floors, passageways, walkways, stairs and other access routes must be kept clear of goods and equipment.

FIRE

- Many fires in offices occur ‘out of hours’ but they are often the result of human error during working hours.
- Keep clothing, towels, etc. away from heaters including storage heaters. The build-up of heat through lack of ventilation can cause a fire.
- Switch off all electric appliances after use.
- Keep all flammable liquids in tightly closed containers.

- ARPI'S INDUSTRIES LTD operates a No Smoking Policy throughout its premises. The only exceptions are the designated smoking areas outside the building.
- Make sure that you know what to do if you discover a fire and also when the fire alarm is sounded. Instructions on these points are displayed throughout the office.
- Familiarize yourself with the position of the fire extinguishers for your office and make sure that you know how to use them. Do not cover up extinguishers or move them to hold doors open.
- Keep all fire exits free from obstructions at all times.
- Fire doors, marked by "FIRE DOOR KEEP SHUT" signs are always fitted with self-closing devices. On no account should these doors be propped open. Their function is to hold back smoke and hot gases in the event of a fire in order that escape routes may be protected.

HORSEPLAY

The playing of practical jokes and horseplay is not only dangerous but is a violation of the workplace harassment policy. Think twice before you do anything which may cause injury to persons or damage property. It is also an offence and a breach of the safety rules to damage or misuse anything provided for health and safety.

ACCIDENTS

- All accidents, no matter how minor, should be recorded on an Accident Form kept in your Departments copy of the safety manual. If you are unable to find a copy of the Accident Form in your Department consult your supervisor or the Safety Department.
- If you require first aid you must report to one of the trained first aid personnel. Lists of all the trained first aid personnel are located throughout the office. It is the responsibility of all personnel to familiarize themselves with these lists.

TRAINING

Your employer has a duty to train all staff in the use of equipment and the day-to-day conduct of work. In the office environment this includes specific training in the use of office electronics, the ergonomics of office work and the correct way to lift and carry awkward loads. Training in the use of fire equipment and emergency procedures is also mandatory.

3.46 SWP-44: OFFICE ERGONOMICS

This policy will apply to all employees of ARPI'S INDUSTRIES LTD that work in an office environment.

REPETITIVE STRAIN INJURY – WHAT IS IT?

Overuse of the muscles through repeated movements can put stress on your body causing a **Repetitive Strain Injury (RSI).** Other names for RSI include Cumulative Trauma Disorder and Repetitive Motion Injury.

Many office jobs require that we perform repetitive motions to fulfill our duties. For this reason, RSIs are the most common type of injury found in the office. Tendons are common sites of RSI pain and discomfort, but workers may also experience pain in other areas of the body depending on the tasks performed.

SYMPTOMS OF RSIs

The first signs of an RSI may be subtle and mild, and the symptoms may appear long after performing the activity. For these reasons, people often ignore the slight aches and pains, but eventually these slight aches and pains can become serious problems if ignored. Symptoms may include:

- Dull aching
- Loss of sensation (numbness), especially at night
- Aches/pains which may be worse at night
- Tingling and burning sensations
- Swelling around the wrist/hand
- Dry, shiny palm
- 'Pins and Needles' discomfort
- Clumsiness (loss of ability to grasp items, impaired thumb and finger dexterity)
- Muscle weakness and fatigue
- Muscle spasm
- Joint restriction/loss of movement
- A 'crackling' feeling when swollen tendons are pressed tightly
- A cyst-like swelling or node, known as a ganglion, near a tendon or joint

RISK FACTORS

The risk factors closely associated with the development of an RSI are physical, psychological/organizational and environmental factors.

PHYSICAL FACTORS

Factors such as force, posture and frequency/duration of work are associated with the likelihood of developing an RSI because they stress our joints and muscles.

PSYCHOLOGICAL/ORGANIZATIONAL FACTORS

Stress is an indirect cause. Our bodies' physical reaction to stress (tensing up certain muscles and paying little attention to proper posture and movement) can cause or aggravate an RSI.

ENVIRONMENTAL FACTORS

Some environmental factors may contribute to the possibility of developing an RSI while others simply reduce productivity (noise, temperature, and lighting).

PREVENTATIVE MEASURES – WORK SMARTER AND SAFER

Since most office work is done sitting at a desk, it is important to adjust our chairs to make them as comfortable as possible.

Chair Height: adjust the height of your chair so your thighs are horizontal and your knees are at right angles when you are seated.

Seat Depth: the space between the front edge of the seat and the back of your knees should be the span of two to three fingers. This will minimize pressure on the underside of your leg.

Back Support: adjust the lumbar support so it rests in the small of your back.

Armrests: while seated, bend your elbows to 90 degrees and relax the shoulders. If your armrests do not allow for this position, do not use them while keying or using the mouse. If armrests are too high or too low, have them removed or get a new chair without armrests.

THINK

Rest breaks: avoid sitting for long periods. Move around; stretch your back, neck and shoulders at least every 10 minutes.

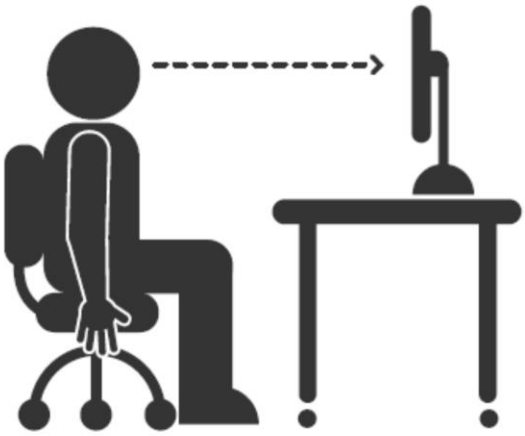
Posture: keep your feet flat on the floor (use a footrest if necessary) and lean into the backrest at all times. Keep your back in good alignment and your chin tucked in. This position should feel comfortable and natural.

Convenience: avoid overreaching. Keep items you use frequently close at hand.

Tidy: keep your work surface and underneath your desk free of clutter. Your legs should be allowed to move freely.

When positioning your computer's monitor, keyboard and mouse, location is everything.

- **Monitor Position:** place it directly in front of you when your head is in neutral position and your eyes are looking forward.
- **Screen Height:** monitor should be at eye level or just slightly below eye level
- **Distance:** the right distance is the one at which you can easily read the screen without experiencing eyestrain (between 15-27 inches is comfortable for most users). If the recommended distance is too great for you to see clearly, it is better to increase the font size rather than bringing the monitor closer to you.



A few other points you may want to keep in mind about your monitor:

GIVE YOUR EYES A BREAK

- Looking at a computer screen for extended periods of time can cause eyestrain. For a few seconds every hour, focus on something farther away (i.e.: a clock 20 ft. away).
- Tilt your monitor down if glare is noted on the screen.
- If you are tilting your head up to see the screen because of bifocal or trifocal glasses (even after setting the monitor height), you may want to consider computer-specific glasses.
- Eye strain can also be caused by uncorrected vision, have your eyes checked regularly.

KEYBOARD AND MOUSE POSITIONING

- **Keyboard:** position your keyboard so your wrists are straight when elbows are 90 degrees.
- **Mouse:** position the mouse at the same height as the keyboard and keep it within easy reach.

THINK

- **Relaxed:** holding a mouse and typing on a keyboard shouldn't take too much effort. A light grip on the mouse and a light key stroke will keep wrist pain to a minimum.
- **Straight:** try to keep the wrist relaxed and straight. Use a wrist/palm support for micro-breaks only; resting your hands or wrists on the support during keying and mouse usage can bend the wrist. Also, keep your elbows as close to the body as possible and move the mouse with the whole arm, initiating movement from the shoulder.

Accessories such as document holders, footrests and headsets are other tools that can be used to improve the ergonomics of your office.

LAPTOP TIPS TO PREVENT AND REDUCE PAIN

- Make your laptop setup as close to the desktop ergonomic computer station setup as possible.
- Keep the wrists in the most natural wrist position that you can achieve.
- Rotate the screen so that bending of the neck is minimized.
- Tuck the chin in to rotate the head instead of bending the neck

OFFICE EXERCISES

Done frequently and properly, the following exercises can help relieve joint and muscle tension and offset injury.

A few things to remember about doing exercises:

- If you are under medical treatment, please contact your physician before doing any of the following suggested exercises.
- Perform all exercises within your comfort zone, and breathe naturally.
- Stretches should be done slowly and smoothly. Do not bounce or strain. If you feel discomfort, STOP.

Wrist/Forearm Stretches

1. Drop your arms and hands to your sides. Shake them out for a few seconds.

2. Sit on a chair with elbows on a table in front of you. Bring palms together as you slowly lower wrists to the table until you feel a stretch.

3. Straighten one arm in front of you, palm down. Using the hand of the other arm, slowly bend your hand down until you feel a stretch. To intensify the stretch, make a fist with the hand of the outstretched arm. Switch arms.

Upper Back Stretch

- Extend both arms out in front of chest at shoulder height. Do not overextend the elbows.
- Interlock fingers, palms facing away from the body.
- Maintaining an upright posture, reach forward with the arms until you feel a stretch in the shoulder/upper back region. Hold for six to ten seconds.
- Raise and stretch both arms overhead, keeping arms extended and fingers interlocked. Keep stomach muscles tight to avoid arching the low back. Breathe naturally and hold for ten seconds.

Neck Stretch

- Sitting up straight, draw the chin in gently.
- Gently and slowly bend your head towards your right shoulder until you feel a mild stretch on the left side of your neck.
- Hold for five seconds and repeat on the other side.

Palming Your Eyes

- Cup your hands.
- While resting your elbows on a desk or table, cover your eyes with one hand and overlap with the other to ensure all light is blocked. Do not put direct pressure on the eyes.
- Breathe naturally as you hold this position for 30 seconds.
- Remove hands and open eyes slowly.

3.47 SWP-45 ENTERING A CUSTOMER'S PROPERTY

PARKING

- Park in designated areas only. Whenever possible, park so that the vehicle can be driven forward when leaving the parking area;
- Get out of the vehicle and check the space or use a guide person to assist when parking in a confined area with limited clearance, or when backing up a vehicle with limited rear visibility;
- Turn off the vehicle engine when parked. If necessary to keep the vehicle running, do not park within 5 meters of a building entrance, window or ventilation intake;
- Remember to park in a manner that gives you safe access to your tools and equipment in the vehicle either through the back doors or the side door;
- When parking facing downhill, turn your wheels towards the curb.
- When parking uphill turn the wheels towards the road.

APPROACHING AND ENTERING THE HOME

- The means of entry and exit to and from the worksite must be assessed. Walkways and entries should be inspected for hazards including but not limited to ice, mud, cracked sidewalks, steps, and/or debris. Corrections must be made where reasonable, and awareness for those hazards we can't correct.
- Make sure footwear is clean. Dirty footwear can create a slipping hazard for both the technician and the customer, and leave a mess.
- Be careful not to bump walls, floors and furniture with your tools and equipment as you make your way through the home, as this may cause damage to the customer's property.
- A handrail should be provided on at least one side of any staircase but this isn't always the case. Sometimes a handrail can be unreliable in an unmaintained property, assess its stability before relying on it to hold you up should you become unstable in your footing.

THE MECHANICAL ROOM

- For many property owners, mechanical rooms are virtually unknown portions of the property. "Out of sight, out of mind" rings true in far too many cases. It's important to note the equipment in the mechanical room may be 10, 20, 30 or even 50 years old, with each unit installed to comply with the codes of the day.
- Be certain that work in relation to or near essential services such as gas, electricity, water, sewage, and telecommunications do not affect the health and safety of persons in the customer's property.
- Also note the location and ease of access to the shut offs for these services, should the need arise to shut them off.

- Walkways should be kept clear, work materials and tools should be neatly stored, and any waste should be regularly removed to prevent obstruction.
- For your safety and that of the customer, spills on floors must be cleaned up immediately.

3.48 SWP-46 LOAD SECUREMENT

PURPOSE

Cargo being transported on by vehicle must remain secured on or within the transporting vehicle. An improperly secured load can result in loss of life, loss of load, damage to cargo, damage to vehicle, a crash, fines, or the vehicle being removed from the road and impounded. This practice will outline some basic rules to assist personnel to properly secure all loads.

RESPONSIBILITIES

- Adequately secure and properly distribute cargo
- Verify vehicle capacity is sufficient for the load weight
- Always use tailgate, doors, tarps, carry spare tire, chains and straps appropriate to the load.
- Do not obscure the driver's view
- Do not block emergency equipment
- Do not block vehicle exits
- Check vehicle structure for obvious damage, distress, weakened parts and weakened sections. If they exist do not use
- Tie-down straps must be designed, constructed, and maintained so that the driver can tighten them
- Tie-down straps must be rated and have an intact rating label attached to them
- Connect tie-downs to rated anchor points (if available) or structural members of the transport vehicle
- Tie-down straps cannot by cut or otherwise modified in anyway
- DO NOT use knots
- DO NOT use bungee cords or tarp straps to secure loads
- Attach and secure tie-downs to prevent objects from coming loose, unfastened, or released during transit
- Use a minimum of 1 tie-down for every five feet or for every 500kg of load
- The steeper the tie-down angle, the less likely the load will shift
- Secure any loose ends on the tie-downs in a manner that will not come loose during transport
- Ensure parking brake is engaged on heavy equipment before securing
- Use a minimum of 4 tie-downs for large equipment
- Chain heavy equipment at the front and rear using the manufacturers mounting points
- Attach red flagging to any material that sticks out past the dimensions of the transport vehicle

3.49 SWP-47 PRE-CORING INSPECTIONS

PURPOSE

Prior to any coring commences the following steps must be completed.

REQUIREMENTS

- Lay out of core locations
- Review core location from below and identify any hazards or obstructions
- If no hazards or obstructions are visible then request scanning and coring from the Prime Contractor.
- If visible hazards or obstructions are in the area of the core then re-adjust the core location and request the Prime Contractor to scan and core.

3.50 SWP-48 LASER LEVEL USE

Even though the beam coming out of a laser level has only a small amount of power, it is concentrated enough to harm your eyes. Anyone using a laser level should follow the below precautions:

- **Never** stare into a laser beam.
- If you are wearing tinted lenses to increase the laser beams intensity, remember tinted glasses do not offer protection to the eyes from direct exposure to the laser beam.
- Do not attempt to repair or disassemble the laser tool. If unqualified persons attempt to repair the tool, serious injury may result.
- Make sure to read the instruction manual and for your own safety do not use your laser level until you are familiar with how it operates.
- Never point a laser where it can encounter any vehicle with a driver, people, or pets.
- Obtain a laser level with the strength compatible with your intended usage. See below for laser level classifications.
- Always turn the laser level tool off when not in use or left unattended for a period of time.
- Remove batteries when storing the tool for an extended period of time (more than three months) to avoid damage to the tools should the batteries deteriorate.
- Do not modify the laser tool for any reason as damage to the user or tool may occur.

Laser Level Classifications:

Class I Lasers are usually under 0.4 milliwatts (mW) of power are considered incapable of damaging skin or tissue and are exempt from most controls. *Examples are a scanner at a retail outlet, CD players or laser printers.*

Class II Lasers are visible to the human eye, although they are still very low power, below 1.0 mW. When the eye is exposed to a class to laser, it blinks, offering adequate protection. If exposed continually over time, eye damage could occur. *An example is a laser pointer.*

Class IIa Lasers are not intended to be viewed and exposure for more than three minutes or so (1, 000 seconds) over an eight-hour period, may result in injury. *An example is a bar-code scanner.*

Class III Lasers is where most quality Laser Levels will fall.

Class IIIA are intermediate power lasers between 1 - 5 mW.
Class IIIB are moderate power lasers; 5 - 500 mW, specific safety controls are recommended.

Class IV Lasers are high-power lasers, 500 mW and higher, are hazardous to view under any condition. *Example would be surgical lasers.*

HAZARDS	RANK	CONTROLS
Laser burn to Optic Nerve	2	Wear Protective Glasses

3.51 SWP-49 LIFTING LARGE A/C CONDENSING UNITS

Lennox XC-17 & Lennox XC-21

- In the residential shipping/receiving area, very large Lennox condensing units are loaded into the back of some of the trucks and vans. These can be almost 4 feet square by 4 1/2 feet tall and weigh up to 300 pounds more or less.
- If at all possible, the forklift or other mechanical means should be used to raise these up and into the back of a truck or van. Sometimes the forklift is not available so hand lifting will need to be done.
- These units should be lifted by a minimum of 2 people with lifting aids. Safe lifting procedures should be utilized while doing so. (See safe lifting procedure in safety manual)
- Utilize blocking under the unit to prevent crushed fingers and assist in getting a good grip prior to lifting. Remember to bend at the knees when raising or lowering the unit.
- When at a jobsite and placing the condensing unit, try to arrange help so you have 2 or more people placing the unit. Plan the lift and movement of the unit. Establish a path of delivery and go over it with all helpers so everyone is on the same page. Ensure the path of delivery is clear and free of debris.
- Back injuries can be the most painful and longest lasting injury of all. Remember, once you injure your back it is much easier to reinjure it.
- Please see your department manager for other lifting and moving equipment such as lifting straps and heavy-duty roller carts that allow you to place the unit on the cart to move it into position so you don't have to carry it the entire way.
- Take care of your back as it's the only one you'll ever have and without it you can't do much.

HAZARDS	RANK	CONTROLS
Strain/Sprain	2	Lifting straps, dollies/hand trucks, helper(s)
Pinch Points	2	Wear gloves, identify pinch points ahead of lifting and keep body parts clear

3.52 SAFE WORK PRACTICE REVIEW FORM

Safe Work Practice Reviewed:

Date:

Reviewed By:

Comments:

SECTION FOUR: Safe Job Procedures

SJP 101-135: Sheet Metal

SJP 201-215: Plumbing

SJP 301-306: Mechanic Shop

SJP 401-414: Applicable to All

SJP 501-509: Applicable to Service

4.1 SAFE JOB PROCEDURES INTRODUCTION

A job procedure is a written, step-by-step description of how to do a job from start to finish. Written job procedures are used to train all workers on the processes and safe methods. Job procedures are also used by workers as a reference, especially for complex jobs, particularly hazardous jobs, or for jobs that are not done very often.

ABOUT SAFE JOB PROCEDURES (SJP)

Safe Job Procedures are written, specific guidelines helpful to the operation of a piece of equipment or performance of a task. SJP's are a specific step-by-step list of instructions in performing a task in the order they need to occur.

SJP's that are listed within the manual have been developed based on pieces of equipment and/or tasks that occur on a frequent basis and pose potentially higher hazards.

As any job is unique and may require a specific procedure to be developed for that task, the Job Hazard Analysis should be used to develop a job specific SJP.

DEVELOP JOB PROCEDURES

1. Develop your job procedure as follows:

2. Make a list of all the jobs that are done in your organization.

3. Examine each job to determine the potential hazards.

4. Rank the jobs on "worst-first" basis. Look at past history for:
    a) Jobs which have caused injuries.
    b) Jobs which have caused lost production.
    c) Jobs which have caused lost time.
    d) Jobs performed on an infrequent basis.
    e) Include jobs that have the potential for major loss.

5. Select the job that poses the greatest hazard.

6. Examine the job carefully by watching how an experienced worker does it and by discussing it with supervisors.

7. Identify, locate and read regulations that apply to the job.

8. Locate all appropriate safe work practices.

9. Combine the above information into a step-by-step format that is easy to understand.

10. Communicate the job procedure to your employees and make sure they follow the procedure.

Safe job procedures are ways of controlling hazards and doing jobs with the minimum of risk to people and property. To reduce risks, an organization must have a set of safe job procedures. These must be developed to fit the particular company. Management must understand and fully support the safe job procedures, and ensure that:

- Safe job procedures are in writing.
- All employees understand the safe job procedures that apply to them.
- All equipment and management support to permit compliance are available.
- Supervisors ensure that all safe job procedures are followed.

When to Use Safe Job procedures

- Employee Orientation.
- Proper Job Instruction.
- Planned Job Observation.
- Personal Contact, Coaching and Tipping.
- Tool Box Topics.
- Accident/Incident Investigation.
- Skill Training

4.2 SJP CRITICAL TASK LIST

SJP#	SAFE JOB PROCEDURES	Last Reviewed				REVIEWED BY
		Date			Risk Level	
		M	D	Y		
101	Power Slitter	02	01	2024	**2**	JWHSC
102	Ring and Circle Shear	02	01	2024	**2**	JWHSC
103	Beta 1 Machine	02	01	2024	**2**	JWHSC
104	Elbow Machine	02	01	2024	**2**	JWHSC
105	Power Beading Machine	02	01	2024	**2**	JWHSC
106	Spot Welders	02	01	2024	**2**	JWHSC
107	Arc Welders	02	01	2024	**2**	JWHSC
108	Spin-in Collar Machine	02	01	2024	**2**	JWHSC
109	Spiral Tubeformer Machine	02	01	2024	**2**	JWHSC
110	Rotary Machines	02	01	2024	**2**	JWHSC
111	Lock Former Machines	02	01	2024	**2**	JWHSC
112	Bar Folder	02	01	2024	**2**	JWHSC
113	Cleat and Cheek Bender	02	01	2024	**2**	JWHSC
114	Floor Hand Brakes	02	01	2024	**2**	JWHSC
115	Cut-off Machines	02	01	2024	**2**	JWHSC
116	Box and Pan Break	02	01	2024	**2**	JWHSC
117	Air Shear	02	01	2024	**2**	JWHSC
118	Cleat Bender Air Operated	02	01	2024	**2**	JWHSC
119	Collar Machine	02	01	2024	**2**	JWHSC
120	Drill Press	02	01	2024	**2**	JWHSC
121	Duct Liner Station	02	01	2024	**2**	JWHSC

122	Gap Gang Punch Machine	02	01	2024	**2**	JWHSC
123	Hydraulic Shear	02	01	2024	**2**	JWHSC
124	Install Coil Procedure	02	01	2024	**2**	JWHSC
125	Pipe Line Machine	02	01	2024	**2**	JWHSC
126	Plasma Cutter	02	01	2024	**2**	JWHSC
127	Power Crimper	02	01	2024	**2**	JWHSC
128	Power Edge Former	02	01	2024	**2**	JWHSC
129	Press Brake	02	01	2024	**2**	JWHSC
130	Stapling Machine	02	01	2024	**2**	JWHSC
131	Vertical Band Saw	02	01	2024	**2**	JWHSC
132	Installing a Main Line Duct	02	01	2024	**3**	JWHSC
133	Installing a Riser Duct	02	01	2024	**3**	JWHSC
134	Hanging Fans	02	01	2024	**3**	JWHSC
135	Removal of Ductwork	02	01	2024	**3**	JWHSC
201	Roust-A-Bout	02	01	2024	**3**	JWHSC
202	Threading Machine	02	01	2024	**2**	JWHSC
203	Arc Welder	02	01	2024	**2**	JWHSC
204	Gas Powered Arc Welder	02	01	2024	**3**	JWHSC
205	Hot Tap Tool	02	01	2024	**2**	JWHSC
206	Chain Falls	02	01	2024	**3**	JWHSC
207	Electric Pallet Jack	02	01	2024	**2**	JWHSC
208	Beam Clamps	02	01	2024	**2**	JWHSC
209	Plasma Cutter	02	01	2024	**2**	JWHSC
210	Plate Clamp	02	01	2024	**2**	JWHSC

211	Shop Exhaust System	02	01	2024	**1**	JWHSC
212	Victaulic Roll Grooving Machine	02	01	2024	**2**	JWHSC
213	Overhead Crane	02	01	2024	**3**	JWHSC
214	Pipe Positioner	02	01	2024	**2**	JWHSC
215	Hydrostatic Pressure Testing	02	01	2024	**3**	JWHSC
216	Opening a Valve to a Newly Installed System	02	01	2024		JWHSC
301	Vehicle Hoists	02	01	2024	**3**	JWHSC
302	Tire Service	02	01	2024	**2**	JWHSC
303	Tire Demounting and Mounting	02	01	2024	**2**	JWHSC
304	Brake Setup	02	01	2024	**2**	JWHSC
305	Clutch Setup	02	01	2024	**2**	JWHSC
306	Greasing Vehicles	02	01	2024	**2**	JWHSC
401	Backing Up Mobile Equipment	02	01	2024	**2**	JWHSC
402	Installing Drop In Anchors	02	01	2024	**3**	JWHSC
403	Fire Extinguisher Use	02	01	2024	**3**	JWHSC
404	Hot Work Procedures	02	01	2024	**2**	JWHSC
405	Tag-Out Procedure	02	01	2024	**1**	JWHSC
406	Electricity Lockout	02	01	2024	**3**	JWHSC
407	Man Basket Use	02	01	2024	**3**	JWHSC
408	Fire Retardant Spray	02	01	2024	**1**	JWHSC
409	Working Alone	02	01	2024	**3**	JWHSC
410	Floor Openings	02	01	2024	**3**	JWHSC
411	Pre-Cast Insert Installation	02	01	2024	**3**	JWHSC
412	Ground Disturbance	02	01	2024	**3**	JWHSC

413	Handheld Grinder Use	02	01	2024	**2**	JWHSC
414	Moving Large Furniture	02	01	2024	**2**	JWHSC
501	Boiler Precision Tune-Up	02	01	2024	**2**	JWHSC
502	Furnace Precision Tune-Up	02	01	2024	**2**	JWHSC
503	Air Conditioner Precision Tune-Up	02	01	2024	**2**	JWHSC
504	Furnace No Heat	02	01	2024	**2**	JWHSC
505	Air Conditioner No Cooling	02	01	2024	**2**	JWHSC
506	Heat Exchanger Replacement	02	01	2024	**2**	JWHSC
507	Boiler Replacement	02	01	2024	**2**	JWHSC
508	Hot Water Tank Replacement	02	01	2024	**2**	JWHSC
509	Chimney Liner Installation	02	01	2024	**2**	JWHSC

4.3 SJP101: POWER SLITTER

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses and Gloves (Cut resistant - Best Choice)

NOTE: The Power Slitter is a portable continuous sheet metal slitter that uses opposed "driven" rotary blades powered by a 115 volts electric motor. It may be benched mounted or installed on an optional stand which is available. Optimum operating height from the floor to the backgauge bar is approximately 32" – 35". Standard feed direction, when facing the machine, is right to left. Before using this piece of equipment, you must first be trained and have permission from the shop supervisor.

PROCEDURE

1. Move a rolling table with your material over to the right (feed direction side) of the slitter. Make sure that the power is off (you can find a switch placed on top of the slitter) when adjusting the backgauge bar.

2. Loosen the knobs (the LEFT & the RIGHT) to allow the backgauge bar to move to your desired measurement. Use the scale that can be found at the side of the housing. The amount of movement on the left side will result in an opposite movement on the right side. Tighten both knobs to secure your measurement.

3. When ready, turn ON the switch and place your material on the right side (feed direction side) of the slitter. Keep it against the backgauge bar's groove and feed the material from right to left, ask for help if you're feeding a longer piece of metal. Place the material on the same table or put another rolling table at the left side of the slitter if you have longer pieces. When done, switch OFF the machine.

During the slitting process the action of the top Blade causes a very slight load to be put on the sheet being slit, thus holding the sheet in the backgauge's groove. This helps the operator in keeping the sheet against the backgauge bar during the entire slitting process, thus resulting in a straight cut.

HAZARDS	RANK	CONTROLS
Cuts/Amputation	2	Careful Operation and wear cut resistant gloves
Pinch	2	Careful hand placement
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.4 SJP102: RING AND CIRCLE SHEAR

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses and Gloves (Cut resistant - Best Choice)

NOTE: This machine allows you to cut ring and circles from ***3-1/2 inch up to 42 inches diameter*** with a maximum capacity of ***16 gauge Mild Steel and up to 18gauge on a Stainless Steel*** material. Before using this piece of equipment, you must first be trained and have permission from the shop supervisor.

PROCEDURE

1. Wheel a loaded rolling table with your material over to the right side of the machine. Make sure that the power is OFF (you can find a switch placed on the machine) when adjusting the tailstock clamping plates.

2. Prior to operation, oil the machine with a few drops of S.A.E. 30W oil at the following points: *elevating screw on the hand wheel; the bottom clamping plate particularly at the lower clamp shaft; and at both sides of the tailstock slide-side plates* and periodically thereafter depending on use of the machine.

3. Loosen the special swivel base socket screw on the tailstock and move the tailstock to desired diameter you wish to cut, using scale on the front of the machine for approximate diameter. “Note” for real close diameters you will have to measure the cut ring or circle and move the tailstock accordingly. All other bolts on the tailstock carriage are for alignment only and should not be loosened except to adjust alignment.

4. Prior to placing material to be cut in machine, check for proper clearance between upper and lower cutting blades by cranking upper blade down 1/16in past top of lower blade, then check between the rear face of the lower blade and the front face of the upper blade with a feeler gauge. Clearance should be 10% of material thickness with a minimum of 0.002 thousands between blades. “Caution” – Make sure upper blade does not touch lower blade or the blades will chip and have to be reground before using.

5. Place material to be cut in the clamping plates and centering it for a minimum run out. The material should be at least ***1 inch*** larger than diameter to be cut. Secure the material by lowering the hand actuated cam on the top of the tailstock clamping unit, check to be sure that blank material is resting level on lower blade, make sure that the clamping pressure is not too tight or this will cause the bearings to bind and the material will not turn freely, also the material will raise off the lower cutting blade and distort; if the material is too loose it will pull from between the clamping plates creating several diameter rings on top of the material as it creeps out. The material should spin freely by hand with a slight amount of back pressure when the pressure is

right.

6. Make sure that no one is working on, or examining the machine, then when ready turn ON the switch to start cutting. Now crank the upper cutting blade down using the handwheel till it touches the materials and starts to revolve like the lower cutting blade, continue cranking 1/8 to 1/4 turn per revolution of the materials until the ring id parted off. Return the upper cutting blade to its upper position. Stop the machine and remove your finished part. Also remove the trimmed outer material piece from the machine as this part may hang up on the next material blank and chip the cutting blades.

7. If the finished part meets with your approval you should be ready for production, if not recheck paragraph 3 thru 5.

8. Remember to place the trimmed outer piece of material (scraps) into the scrap bin beside the machine.

During the cutting process make sure that no one is working near or around the machine and the operator should not have any loose clothing that might catch when the material is spinning. Remember to always keep an eye on your piece and your hands away from the spinning metal and keep in mind the location of the OFF switch in case something goes wrong.

HAZARDS	RANK	CONTROLS
Cuts/Amputation	2	Careful Operation and wear cut resistant gloves. Careful hand placement
Entanglement	2	Do not wear loose clothing
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.5 SJP103: BETA 1 MACHINE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses and Special Gloves (Armoured Glove - Best Choice)

NOTE: BETA 1 Machine will enable you to form an elbow of 90 degree, with a 300mm diameter in about 15 minutes with rigidity. This machine will also set (form) other metals (aluminum, copper, inox etc.) It will enable you to set pipes of all diameters ranging from 250 to 1000mm for the setting and between 200 and 1000mm for the edging. The only rule to follow is that the angle between two segments cannot exceed 30 degree, in other words the elbow can only be set with segments of 30 degree maximum. Before using this piece of equipment, you must first be trained and have permission from the shop supervisor.

PROCEDURE

1. **Preparation**. From the Plasma Cutter the pieces (called – segments) are cut up. Trim or notch some part of the piece and inscribe your lap guide (ask the Plasma Cutter Operator or the shop foreman for the proper joint lap measurement). Roll up the pieces to form segments and close in the joint lengthwise using the spot welder. For SE (Small End) – BE (Big End) elbow, put bead only to the SE part of the segment (common is 2 inches from the straight edge) by using one of the beading machine located at the middle of the shop area. Now that the segments are prepared, roll it on a table and place it near the machine for the next step.

2. **Beading**. Set up the machine table on the multiple spline and fixed it with the set screws and then link the butt strapes (this is the most important). Then set up and fixed the profile wheel, put up the bar into the holes of the table following the segment diameter. Put the first segment on the table and put on the jack and the gliding shoes and set on for proper position (position No. 1 for single flange and position No. 2 for double flange), numbers are indicated on the gliding shoes.

   If you need to adjust the height of the flange, you can do this by using the eccentric lever. For basic adjustment, a single flange ranges from 5 – 6mm approx. and a double flange ranges from 9 – 9.5 mm approx. The measure has to be taken from the fixroll (non-adjustable profile wheel) to the horizontal part of the hardened plate surface.

3. Carefully guide the segment along the edges with the help of an armoured glove or a u-iron as you press down the pedal of the right foot switch the profiling wheel will starts to move towards the segment and by actuating the knob that can found on top of the machine the segment will now starts to turn and put a bead on the edge of the segment.

4. **Flanging**. Put the segment on the machine table and guide them along the edges with the help of an armoured glove or a u-iron, by actuating the knob that can found on top of the machine the rolls will now starts to turn and as you press down the pedal of the right foot switch and the

profiling wheel will start the movement of the shaping disks forming a flange. The segment has to make about 2 rotations before the roll is advanced by tripping the foot switch until you get a good flange.

The end segments will have one side beaded (Big End) or flanged (Small End) and the other side is straight. The middle segments will have one side beaded and the other side is flanged. Do all segments and after you're now ready to go on the next step.

5. **Seam Locking**. Set up now the machine for seam locking. Remove the machine table, change the profile wheel with a drive roll (non-adjustable feed wheel) and put on a pair of arms into the multiple splines. The arms must correspond to the segment diameter; the two support rolls in the arms must be adjusted in a way that the flange is supported behind the segment angle. The opening of the support arms is adjusted to the segment size with the connecting rod. After setting the support rolls against the segment, an adjusting ring must be secured on the connecting rod approximately 20mm from the guide tube. The contact pressure of the support rolls is determined by the setting of the spring tensioning plate. The supporting wheel must be adjusted in a way that it makes a firm contact with the outer contour of the segment. The position of the bearing point of the closing roll on the feed wheel must be adjusted to correspond with the segment material thickness. (the ring, connecting rod, guide tube and the spring tensioning plate can be found at the base of the machine between stands)

6. Prepare the segments of the elbow by putting in the flanged side of second segment into the beaded part of the first segment, aligning it to form the first part of the elbow and then hammer at least four to six points around the circumference to secure the parts. When that the part of an elbow is prepared, you're now ready to close the seam.

7. Put now that part of an elbow into the beta machine in between the support arms and proceed as follows: Press the right foot pedal to close the rolls. Pull the lever to close the wheel and lowers into the seam, turn the knob clockwise to turn on the feed rolls and closes the seam. Turn the knob counter-clockwise to stop the feed rolls, push the lever to open the closing wheel and trip the foot pedal to open the feed rolls.

8. Remove the seamed segment from the machine and repeat again paragraph 6 to connect the next segment into the elbow and then paragraph 7 until you connect and seamed all the segments, thus forming an elbow with your desired degree.

We use the beta machine mainly to make rigid elbows but we can also use this machine to seam lock some other types of round fittings, offsets, reducers and in some cases putting collars to larger piece of square to round fittings. Thus the latter sometimes requires welding to better secure the piece or put some supports to reinforce the fitting.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant or armored gloves
Pinch	2	Careful hand placement. Do not wear loose clothing
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.6 SJP104: ELBOW MACHINE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Ear Plugs and Gloves (cut resistant glove - Best Choice)

NOTE: This type of machine can make an adjustable segmented elbow from a sheet of metal (G.I. 28 to 24 gauges) ranging from 3" up to 36". There are three (3) stages that make up this machine; Stage 1 is for cutting, Stage 2 is for crimping and Stage 3 is for sealing. Before using this piece of equipment, you must first be trained and have permission from the shop supervisor.

PROCEDURE

1. **Cutting set-up**. First select the correct size cutter, beader and setting down rolls for the desire diameter elbow to be made. Install the cutting and beading rolls in the proper sequence on the roll shafts as describe in the operator's manual. After the cutting and beading rolls are secured with the retainer screw on the top shaft, install the rolls on the lower shaft. After this is done position the adjusting collar on the lower shaft so that front end is flush with the shoulder on the shaft, then slide the roll set against it. Next push the upper roll shaft down by hand as far as it will go; be careful, and see that the top and bottom cutter rolls do not hit each other as they are hardened and may chip or break. Next hold the lower roll set, by hand, against the adjusting nut and adjust the nut so there is enough air gap between the flat surface of the two cutter blades, and then secure the rolls in the position with the retainer screw. Turn the machine on and while the rolls are rotating observe the air gap to see if the clearance between the cutters is maintained, if not re-adjust to suit. The next adjustment is to set the depth of the upper cutter blade; this is done by the use of the adjusting screw. First loosen the lock nut on the adjusting screw, and then position the cutter by rotating the screw or adjusting block. Be sure the air is off when adjusting the block, otherwise resistance will be noticed.

   Note: The cutter must be set low enough to cut the material easily, however, do not set it too low as this will cause the bead section to be too deep and rolled over cut edge. The segments will not snap together easily when assembled for the setting down operation.

   Setting down set-up (sealing stage). Install the correct size setting down roll on the upper shaft and secure it with the retaining screw against the shoulder on the shaft. Next install the mating roll on the lower shaft and by use of the adjustable nut, center this roll with the top roll. To regulate the downward travel of the upper roll follow the same procedure as mentioned for setting the cutter depth. The correct setting for the space between the upper and the lower setting down rolls is two material thicknesses.

   Crimping set-up. The length of the crimp is determined by the back gage on the machine. This cannot be adjusted, therefore, if other lengths are required special arrangements would have to be made. The depth of the crimp may be regulated; follow the same instructions as mentioned for

adjusting the depth of the cutters. Always crimp the small end of the elbow.

2. **Preparation of material to be cut**. Form a tube from a sheet metal piece by rolling and rivet the joints. First stage is to punch holes to the sides of the blanked piece of metal using and follow the *Gap Gang Punch Machine SJP-15* safety procedures. Set-up the punch machine using the templates for the desire elbow profile found on the wall right next to the machine. Insert the blank piece of sheet metal (lengthwise) into the punch machine and step on the foot pedal to punch the holes, flip the material forward, but do not rotate, and do the same on the other side. Place the punched piece on the table into your right for the next stage. Next is rolling the punched materials, from the table to your left side of the power roller take two material at a time (follow the *Power Rollers SWP-29* for safety). Set-up the roller for the desire tube diameter and roll the materials. Place the material onto a table to your right for the next stage. Next is riveting the rolled materials, from the table to your left side of the rivet machine take one material at a time. Follow these rules, Small End feed – right over left lap joint, and Big End Feed – left over right lap joint. Place the riveted elbow tube onto the table on your right for the machine elbow.

3. Now you are ready to cut, crimp and seal to make an adjustable angle elbow.

   Cutting elbow segments. Select a jig for the desired elbow diameter. When the jig is in place for the first cut, place the wire end of the jig in the outer groove of the top roll and then lower the roll to start the cut and beading operation (use the foot pedal – right pedal switch to lower). Once around the tube is enough for each segment. When the operation is complete raise the top roll (use the foot pedal – left pedal switch to rise) and removed the segment which has been cut, go on until the last segment is cut.

   Crimping segments. Hold the segment (small end) against the backgauge and then lower the top shaft crimp roll using the foot pedal (right pedal switch to lower) then let go of the material. Do not hold on the material while it's in the crimp roller. Once around the segment is enough. When the operation is complete raise the top shaft crimp roll using the foot pedal (left pedal switch to rise) and removed the segment which has been cut.

   Setting down segments (sealing). Start to assemble with the last segment out of the jig, snap it together with the next to last segment, and turn it into the elbow shape. Place next to last segment into the throat of the machine, leaving last segment out of the jig outside the machine. Lower the top roll using the foot pedal (right pedal switch to lower) and let the assembly revolve one complete turn, raise the top roll using the foot pedal (left pedal switch to rise) and remove the assembly. Make sure that it's not too loose or too tight and that you can freely move and turn 360 degree without difficulty but make sure it is properly sealed. Follow the same procedure for the remaining segments.

   Note: The center of the top setting down roll is fit into the groove between the segments. Always go around the throat of the elbow first and guide it a trifle. If the elbow is too tight, adjust the top setting down wheel lower by adjusting screw, which will spread the bead. If still too tight, go

around the throat of the elbow with a slight upward tension on segment outside the machine.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Noise	2	Wear ear plugs
Pinch	2	Careful hand placement. Do not wear loose clothing
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.7 SJP105: POWER BEADING MACHINE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses and Gloves (cut resistant glove - Best Choice)

NOTE: We have a variety of beading machines in the shop, listed below are the machines that uses these procedures. But before using this piece of equipment, you must first be trained and have permission from the shop supervisor.

- # 30 – Gang Beading Machine (for Flat pieces)
- # 48 – Power Rotary Bead Roller (for round/cylindrical pieces)
- # 52 – Small Rotary Bead Roller (for round/cylindrical pieces)

PROCEDURE

 # 30 – Gang Beading Machine. This machine is used to put bead/s on a flat piece of sheet metal material, only pieces that measures 12 inches or more lengthwise and crosswise can be feed to this machine.

1. Prepare your materials, notch those edges put markings etc.; and know the orientation of the piece when the materials are layout and cut from the plasma cutter, you will see it in the label (For non-insulated pieces – labels are placed in the inside part of the fitting. Feed the material label facing towards you).

2. Adjust the hand wheel that can be found on top of the beading machine to your desire bead depth (Counter-clockwise to increase and clockwise to decrease). Line up your piece and check the markings in the bead roller housing for a proper bead marks to your piece (Preferably at the center of the piece). You can use some rail guides that you can find below the beading machine beside the power switch if you want a consistent pattern.

3. Turn the power on and start feeding the material. Catch the material at the other side of the beading machine and then see if your piece has the right bead depth. If not, adjust the hand wheel to your desired depth setting. When you're done, place your piece onto a table and turn the power off.

When working with large/big pieces, it is necessary to ask for assistance. Lifting and working with heavy piece of material can cause serious injuries if not handled properly.

 # 48 – Power Rotary Bead Roller. This machine is used to put bead onto a round, cylindrical or rolled piece of material. This machine is already set-up just to put bead onto a collar for a much heavier material gauge. Normally, we use this for connecting collars.

1. Set up the material guide part (this is used to serve as a stop for the end of material to run against as it being formed. The guide can be moved either in or out as needed to confirm the profile being formed.

2. Carefully press the material along the edges with the help of a leather, or a cut-resistant glove against the guide as you press down the pedal of the foot switch, this allows the upper shaft to engage the work piece and put the bead. Allow the material to rotate 360 degrees for a nice bead pattern.

3. Disengage the piece by letting go the foot pedal switch and removed your materials. Remember to turn off the machine after.

 # 52 – Small Rotary Bead Roller. This machine is already set-up and its main function is to put bead onto a round, cylindrical or rolled piece of material.

1. You must first set-up your desired bead distance from the edge of the material by loosening the set screw of the material guide part by hand. Put your piece into the machine with a marked distance of your bead and aligned it in between the upper and the lower roller. Slightly crank down the piece between the rollers and move the guide against the edge of the material, tighten the set screw.

2. You can find a directional switch located at the base of the motor to select your running direction either clockwise or counter-clockwise. Holding the material with one hand or both hands (in some cases) as you press down on the foot pedal switch until the material rotates 360 degrees.

3. Rotate the crank handle clockwise to apply depth onto your piece until the desired bead has been formed. Loosen the crank handle (counter-clockwise) and slide the material out and inspect for deficiencies.

Due to the nature of the machine and the necessity to feed parts by hand into the machine while it is turning, great care must be followed to ensure that fingers, hands, and any body parts do not come near the forming rolls when in use. We encourage you to have protective clothing such as hairnets, tight clothing and tight fitting protective glove when operating this machine.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Crush/Pinch	2	Careful hand placement. Do not wear loose clothing
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.8 SJP106: SPOT WELDERS

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, mask (respirator) and Gloves (Cut resistant - Best Choice)

NOTE: There are three (3) spot welders located in the shop, each have their own uses and functions. These machines consist basically of self-contained pneumatically operated Spot/Projection Welder. Design of machine enables additional pneumatic cylinders to be fitted to give a wide range of welding pressures or high lift stroke if required. Before using this piece of equipment, you must first be trained and have permission from the shop supervisor.

- # 36 – Weld-o-Matic Spot Welder AF (long tip)
- # 41 – Weld-o-Matic Spot Welder AS (short tip - RES)
- # 61 – Spot Welder AS25KVA (special tip – for damper assembly)

Procedure

1. Check that the material to be welded is within the capacity of the machine. Turn on the power and water supply (the switch is located on the wall behind the spot welder), removed the electrodes isolator (a wooden object in between) and check the weld/no weld switch if it's in the "Weld" position. Set the control dial to the desired weld setting.

2. Move a rolling table with your material over to the spot welder. Check the electrodes, keep the tip taper and holder taper clean smooth and free from foreign deposits.

3. Place the material to be weld between the electrodes and depress the weld footswitch. Check the weld area in the material, a gold-yellowish indicates a good weld.

4. If you have to excessive sparking and burning of weld, this may be caused by too high current setting. Try a high tap number or lower percentage heat setting. If still, clean the material to be welded of dirt or other foreign matter.

5. Repeat procedure no. 3 again. When done, turn off the power and water supply. Don't put the electrode isolators; we only put it at the end of the day or our shift.

The electrode tips should be checked very frequently and dressed or replaced as soon as any sign of "mushrooming" becomes apparent. The tip diameter should not be allowed to spread as this will result in decreased current density and consequently faulty welds. The projection welding dies should be kept clean and free from oil, dirt and weld spatter and to be replaced when showing signs of wear, otherwise faulty weld may occur.

HAZARDS	RANK	CONTROLS
Burn	2	Wear required PPE gloves
Pinch	2	Careful hand placement
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.9 SJP107: ARC WELDERS

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Welding Helmet, Safety Glasses, Welding Jacket or Sleeves and Gloves (Leather - Best Choice)

NOTE: There are several arc welders and a stick welder located in the shop, each have their own uses. These machines consist basically of self-contained pneumatically operated Spot/Projection Welder. Design of machine enables additional pneumatic cylinders to be fitted to give a wide range of welding pressures or high lift stroke if required. Before using this piece of equipment, you must first be trained and have permission from the shop supervisor.

- # 70 – ARC Welder DC 7027 (Mild Steel Materials)
- # 72 – ARC Welder AC/DC S-250 (SMAW or Stick Welder)
- # 73 – ARC Welder DC RC256 (Mild Steel Materials)
- # 75 – MEGA-MIG Welder RC-300RUS (Stainless Steel Materials)

PROCEDURE

1. Gather your materials, chipping hammer to get rid of the slag and a wire brush to clean the welds.

2. Put on your safety gear and prepare the area to be welded in. Remove all flammable material and put the ground connection either right on the piece you are welding or at the metal workbench. Turn on the ventilation system.

3. Set-up the welder and your material; check welder's amperage, welding wire & welding gun and/or electrode; clean the metal by brushing the surface with a wire brush or a grinder before welding to make sure its dry and clean of dirt or other foreign matter.

4. Flip the helmet down and strike the arc to find where you want to start welding. Build up a weld pool and start moving the weld pool across the metal. Use the chipping hammer to break the slag off the weld, the wire brush to clean the weld and examine the welded area. Allow the metal to cool

5. When done. Remove the ground, turn off the machine, the gas & the ventilation system and clean your work place.

Welding machines can be dangerous. Read all warnings and take every measure to ensure the safety of you and those around you. Do not weld near something that can catch fire. Do not look at the arc without proper dark lens designed for welding. Adequate ventilation should be provided to remove fumes which are produced by this welding process. A fire extinguisher must be on standby.

HAZARDS	RANK	CONTROLS
Burn/Sparks	2	Wear required PPE (long sleeves, pants, welders apron, welding gloves) and properly cordon off work area.
Fire	3	Clear flammables from the area. Have a fire extinguisher ready
Respiratory Ailments	2	Adequate ventilation system and/or use a respirator
Eye Injury	2	Wear welding helmet and safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.10 SJP108: SPIN-IN COLLAR MACHINE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses and Gloves (Cut resistant - Best Choice)

NOTE: This Spin-In Collar machine uses a unique sliding roll design to form a deep draw, 3/8" inch deep, spin-in pocket on a round collar. Spin-in collars are still the surest and quickest way to connect round pipe to rectangular duct and the Spin-in Collar machine produces this pocket with a one-step operation. Before using this piece of equipment, you must first be trained and have permission from the shop supervisor.

PROCEDURE

1. Fabricate a plain collar to be beaded. Collars overlap can be spot welded (G.I. or Stainless Steel) or riveted (Aluminum). Make sure the edges are riveted or welded near the corners. Use a 3/8 inch overlap.
2. With the machine in the off position, insert the collar between rolls in the machine with the collar pushed against the face plate. Gently pull down the press bar to hold the collar. The lap of the collar must be oriented so that the collar won't catch on the collar guide.
3. Adjust the collar guide so that this guide will ride on the inside of the collar as it turns. This guide will act to stabilize the collar.
4. Turn the starter switch on. Press the foot pedal. Rolls will turn and pull down on the press handle. Pull gently at first to "track" the bead. Then pull firmly until the desired bead is formed. This will take about 8 rotations.
5. Release the foot pedal, lift the press handle, remove the collar and turn the starter switch off.

Keep the rolls clean. Never remove covers with the starter switch in the on position. Do not run material heavier than 22 gauges galvanize in the machine. Keep area around the machine free of debris and clutter. And wear appropriate gloves.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch	2	Careful hand placement. Do not wear loose clothing
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.11 SJP109: SPIRAL TUBEFORMER MACHINE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Ear Plugs and Gloves (Cut resistant - Best Choice)

NOTE: This machine handles a significant range of tube diameters and strip material thicknesses, and they are designed to produce spiral tube at strip speeds of up 270 feet per minute. This machine must be installed by a qualified ISM technician and the machine operator must have completed the ISM training session.

PROCEDURE

1. Visually verify the condition of the machine before turning on the main power source to the machine. Verify that the Calibration Photo Eye has not been moved or disconnected. And also verify that the male connector from the run-off table Calibration Photo Eye and Over-Travel Limit Switch cable assembly is plugged into the matching socket at the side of the main machine.

Before operating this machine, the operator needs an ISM training session. This machine is equipped with Spiral Smart Technology (SST), to be used during the Setup, Operation and Debugging phase of the pipe production process. Please refer to Section 6.0 of the operator's manual on how to calibrate, set-up, enter and adjust the production programs and operational parameters. (*Please measure the strip thickness and enter the value when requested by the SST System. DO NOT enter the thickness values taken from Gauge Charts because these values are approximations, as they overlap into adjacent gauges*).

2. When ready, select and install the Forming Head (choose from – ***4 in. to 66 in. Ø tube diameters***) needed to guide the roll formed strip to set the required tube diameter and align the strip edges for clinching. Mount the Forming Head on the mandrel and clamped in position to the slitter. Align and setup the roll formed strip and secure it in the guide into the driving housing.

3. Select the mode you want to perform by turning the **MODE** selector switch (choose from ***MAN***, ***AUTO 1*** or ***AUTO 2***). Make sure that the selector switch for the ***LUBE PUMP*** is at ON position and the ***CLINCH ROLLER*** is at UP position too.

Manual Mode Operation. This mode it requires the operator input at each stage in the production cycle of spiral tubes. This includes the entry of length data, production start, tube cutting and tube discharge.

- Start the machine by pressing the ***CONTROL ON*** switch.
- Confirm that the mode switch is set to ***MAN***.
- Press ***MENU*** key on the touch screen. On the screen, enter the desired tube length by touching the ***IN*** or ***MM*** number. Touch the ***DONE*** key when the correct length has been entered. Touch

HELP key for additional information (*This key is use to access useful information about the options available to the operator for the particular screen*).

- Select the appropriate production and cutting speeds by setting the ***PRODUCTION SPEED*** and ***CUTTING SPEED*** potentiometers (*Start on a slow speed to avoid the roll strip to be distorted*).
- Start the machine by pressing the ***PRODUCTION ON*** switch. The tube will run to the programmed length and stop.
- Operate the slitter by pressing the ***CUTTER ON*** switch.
- Start the discharge of the tube by pressing the ***DISCHARGE ON*** switch.

Auto 1 Mode Operation: This mode operates on the basis of a pre-programmed production sequence. This mode requires operator input at the start and discharge stage of the production cycle, and is the recommended mode for the production of large diameters spiral tubes, and the verification of a production sequence program prior to running it in the ***AUTO 2*** mode.

- Note that a production sequence program must first be programmed into the ***Length Control System*** before starting an ***AUTO 1*** spiral tube production session (*Please refer to Section 6.8 of the operator's manual for the direction on how to enter a production sequence program into the **LCS***).
- If a production sequence program has previously been stored in the LCS, it is advisable to verify this production sequence prior to running the program (*Please refer to Section 6.9 of the operator's manual for the direction on how to view or edit the existing production sequence*).
- Start the machine by pressing the ***CONTROL ON*** switch.
- Confirm that the mode switch is set to ***AUTO 1***.
- Once satisfied that the production sequence program is correct and ready to be executed, select the appropriate production and cutting speed by setting the ***PRODUCTION SPEED*** and ***CUTTING SPEED*** potentiometers (*Start on a slow speed to avoid the roll strip to be distorted*).
- Start the machine by pressing the ***PRODUCTION ON*** switch. The tube will run to the first programmed length and the slitter will engage.
- Start the discharge of the tube by pressing the ***DISCHARGE ON*** switch.
- Start the next production cycle by repeatedly following the previous two (2) steps until the entire production sequence has been produced (*Note that the Tubeformer will continue with the stored production sequence until the entire production is produced, even if the machine was powered down in between production sessions*).

Auto 2 Mode Operation. This mode also operates on the basis of a pre-programmed production sequence and will automatically produce spiral tubes using the pre-programmed production sequence entirely without operator input (*Make sure that the LCS is calibrated, per the directions outlined in Section 6.7 of the operator's manual, before proceeding with this production phase*).

- Note that a production sequence program must first be programmed into the ***Length Control***

System before starting an ***AUTO 2*** spiral tube production session (*Please refer to Section 6.8 of the operator's manual for the direction on how to enter a production sequence program into the* ***LCS***).

- If a production sequence program has previously been stored in the LCS, it is advisable to verify this production sequence prior to running the program (*Please refer to Section 6.9 of the operator's manual for the direction on how to view or edit the existing production sequence*).
- Start the machine by pressing the ***CONTROL ON*** switch.
- Confirm that the mode switch is set to ***AUTO 2***.
- Once satisfied that the production sequence program is correct and ready to be executed, select the appropriate production and cutting speed by setting the ***PRODUCTION SPEED*** and ***CUTTING SPEED*** potentiometers (*Start on a slow speed to avoid the roll strip to be distorted*).
- Start the machine by pressing the ***PRODUCTION ON*** switch. The machine will start and proceed through the entire program without requiring and further input (*When the production sequence produces a large number of spiral tubes, make sure that an attendant empties the Run-off Table Receiving Ramps, so not to cause an overflow situation*).

When shutting down the machine, it is strongly recommended that the production and cutting speed potentiometers be set back to *"0"* (zero). And turn off the main power lever located at the Control Panel door.

1. Check each end of the spiral tube for jagged edges. Cut and file the edges to avoid cuts during transport and installation.
2. Put the finished spiral tubes onto a low table with four support pegs (*Especially made for transporting this kind of materials*) for storage.

Always keep clean the machine surroundings, especially the floor around the run-off table receiving ramps for oils, lubricants and metal shavings.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch	2	Careful hand placement. Do not wear loose clothing
Noise	2	Wear ear plugs
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.12 SJP110: ROTARY MACHINES

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses and Gloves (Cut resistant - Best Choice)

NOTE: There are variety of rotary machines located in the shop, each have their own uses and functions. These machines consist basically of a driver motor and a turning machine; each having a directional selector switch and a foot pedal.

- # 50 – Power Edge and Seam Former Combo (CSM)
- # 59 – Power Seam Former (CSM)
- # 60 – Power Edge and Crimp Former Combo (CSM)

PROCEDURE

1. Choose your desire power former machine by putting the drive shaft into the spindle that drives the lower forming disc shafting at the back of your preferred rotary machine.

2. **Edge & Seam Forming**. Loosen and adjust the guide plate to your required bead measurements for the job at hand. Don't forget to tighten the set screw to secure the guide plate. (*Make sure that the directional selector switch is at neutral position and/or you don't step on the foot pedal*).

3. Start by opening the upper forming disc by turning the crank handle counter-clockwise and position your piece in between the forming discs against the guide. Secure by lowering the upper forming disc, cranking the handle clockwise until it touches the material surface. Put the directional selector switch to forward position.

4. First run, quarter (1/4) turns the crank handle clockwise and step on the foot pedal switch and guide carefully the work piece for one (1) complete rotation to "track" the bead.

5. Gradually turn the handle as you step on the foot pedal switch and guide your piece until you form your desired depth of the bead or the required edge you need. Release the foot pedal switch and turn the crank handle counter-clockwise to remove your piece.

6. Inspect the piece and if it does conform to the standards. Now, you are ready for production.

7. Insert the next piece and secure it in between the forming discs against the guide. Secure by lowering the upper forming disc, cranking the handle clockwise until it touches the material surface. Repeat Step 5.

8. **Sealing the Seam**. Start by opening the upper forming disc by turning the crank handle counter-

clockwise and position your beaded piece in between the forming discs. Secure by lowering the upper forming disc, cranking the handle clockwise until it touches the material surface. Loosen and adjust the guide plate so that it will touch the edge of the material (*Make sure that the directional selector switch is at neutral position and/or you don't step on the foot pedal*). Don't forget to tighten the set screw to secure the guide plate.

9. Gradually turn the handle as you step on the foot pedal switch and guide your piece until you the seal the seam (*Be careful when sealing the seam, too much pressure can cut the material right on the seam*). Release the foot pedal switch and turn the crank handle counter-clockwise to remove your piece.

10. Insert the next piece and secure it in between the forming discs against the guide. Secure by lowering the upper forming disc, cranking the handle clockwise until it touches the material surface. Repeat Step 9.

11. **Crimp Forming**. Start by opening the upper forming disc by turning the crank handle counter-clockwise and position your piece in between the forming discs. Secure by lowering the upper forming disc, cranking the handle clockwise until it touches the material surface. Loosen and adjust the guide plate to your required crimp measurement for the job at hand (*Make sure that the directional selector switch is at neutral position and/or you don't step on the foot pedal*). Don't forget to tighten the set screw to secure the guide plate.

12. First run, quarter (1/4) turns the crank handle clockwise and step on the foot pedal switch and guide carefully the work piece for One (1) complete rotation to "track" the crimp.

13. Gradually turn the handle as you step on the foot pedal switch and guide your piece until you form your desired crimp depth. Release the foot pedal switch and turn the crank handle counter-clockwise to remove your piece.

14. Inspect the piece and if it does conform to the standards. Now, you are ready for production.

15. Insert the next piece and secure it in between the forming discs against the guide. Secure by lowering the upper forming disc, cranking the handle clockwise until it touches the material surface. Repeat Step 13.

Keep the forming discs clean and free from slugs and metal shavings so that it won't fly up towards the operators face. Safety glasses are a MUST for these machines. Leather gloves are optional but a cut-resistant glove is the best choice.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch	2	Careful hand placement. Do not wear loose clothing
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.13 SJP111: LOCK FORMER MACHINES

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Ear Plugs and Gloves (Cut resistant - Best Choice)

NOTE: There are lots of variety of **Lock Former Machines** located in the shop, each have their own uses, functions and end result. These machines consist of different forming stations, rollers and discs combination; also it has lots of fast-moving parts and comes in different feeding speeds. Your utmost attention is a MUST when working with these machines. Lists are provided below:

- # 22 – Male Button Snap Lock & Cleat Former Combo (24Ga. max – RES)
- # 23 – Block End/Hammer Lock & Female Button Snap Lock Combo (24Ga. max – RES)
- # 26 – Button Snap Lock Former (24Ga. max – RES)
- # 28 – High Speed Small Pittsburgh Lock Former (20Ga. max – CSM/RES)
- # 29 – Transverse Duct Connector Machine (16Ga. max – CSM)
- # 31 – Pittsburgh Lock Former & Easy Edger Combo (24Ga. max – CSM)
- # 33 – Large Pittsburgh Lock & Cleat Former Combo (16Ga. max – CSM)
- # 37 – High Speed Small Pittsburgh & Pipe Lock Former Combo (20Ga. max – CSM)
- # 38 – Large Button Lock & Cleat Former Combo (20Ga. max – CSM)
- # 39 – Small Button Lock & Cleat Former Combo (24Ga. max – CSM)

PROCEDURE

1. Roll a table with your materials adjacent to the feed side of the machine.

2. Visually verify the condition of the machine before turning on the power switch (*Report any damages or malfunctions you encounter during this procedure, refer to our safety manual for the Tag/Lock Out Procedures*). Make sure that the safety cover guards are in place and there are no hazards and other things than blocks your way when you run your piece.

3. Prior to operation and especially if you are the first one to use the machine, oil the machine with a few spray of S.A.E. 30W oil. Open or remove the cover guard and turn on the machine, spray oil and *start from the second forming rollers up to the end rollers or discs* and periodically thereafter depending on use of the machine. Turn off the machine and put back the cover guard.

Never use the machine without the safety cover guards when running your piece. In some cases that we need to run an odd shape or large/big materials and we have to remove or open the cover guard, you have to put your utmost care and attention when running your piece (*Get a helping hand and attract the attention of other person around you or the one's working with you*).

4. Some machine sometimes needs some adjustment to the pressure from the forming rollers when you use it to run especially for making cleats, those machines with cleat former combo usually needs some more space between the forming rollers and the material. If you need to adjust the rollers make sure to put it back to the right settings before you leave the machine (*Not everyone is allowed to adjust the settings of any machines in the shop, ONLY the one who is trained to do such things are allowed to do so. Ask help of your shop foreman or supervisor and NEVER tamper with the settings*).

5. Turn on the machine (*Each machine has its own power switch located mostly at the side of the machine where you usually feed your piece, some are push button and others with knob or lever*) and start running your piece. Always keep your piece against the material guide to keep it straight and have a nice result when it leaves the forming rollers.

Material that has curves or bends must be flattened. Constant pressure is needed as the material can pull away from the guide. Heavier gauges of material will require more pressure to hold against the guide. Odd shape and large pieces of material may require more than one person to run the piece. Always ask for help.

6. Once the material has been run, place it on an empty table and inspect for quality issues.

7. When you're done, turn off the machine.

Keep the forming discs clean and free from slugs and metal shavings so that it won't fly up towards the operators face. Safety glasses and cover guards are a MUST for these machines. Leather gloves are optional but a cut-resistant glove is the best choice. At no time are sheet metal pieces to be leaned against the side of the machine as this can create cut or tripping hazards that you can't see as the work piece is being run through the machine.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Fast moving parts	3	Careful body part placement. Do not wear loose clothing
Noise	2	Wear ear plugs
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.14 SJP112: BAR FOLDER

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses and Gloves (Cut resistant - Best Choice)

NOTE: The Bar Folder is a hand machine used to bend a metal sheet into a sharp, narrow, and accurate fold or a rounded fold along the edge. Lists of bar folders in the shop are provided below:

- # 14 – Bar Folder 23A36 (24 in & 24Ga. max – RES)
- # 63 – Bar Folder 23A36 (24 in & 24Ga. max – CSM)

PROCEDURE

1. Roll a table with your materials adjacent to the side of the machine.

2. Visually verify the condition of the machine before you use it (*Report any damages or broken parts during this procedure, refer to our safety manual for the Tag/Lock Out Procedures*). Make sure that there are no hazards and other things than blocks your way when you fold your piece.

3. Set your folding measurement, there is an adjustment knob located just below the base of the bar folder to your right; it also has scale in it. Twist the knob handle counter-clockwise to loosen and slid it to your desired measurement against the scale markings and tighten it to secure your measurement. There is also an angle set guide located below the lever arm at the right corner of the base bar, you only have two choices, 45˚ degree (push forward the guide in the left) and 90˚ degree (push both guide forward) bend.

4. Insert your piece between the folding bar and the base bar as you firmly hold it against the back gauge inside the base bar, pull the lever arm at the right side of the bar folder towards you to fold your piece.

5. When done, don't forget to disengage the angle set guide (*pull both guide against the base bar*).

Leather gloves are optional but a cut-resistant glove is the best choice. At no time are sheet metal pieces to be leaned against the side of the machine or the foot of the wooden table as this can create cut or tripping hazards that you can't see as the work piece is being folded.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch	2	Careful body part placement. Do not wear loose clothing
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.15 SJP113: CLEAT AND CHEEK BENDER

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses and Gloves (Cut resistant - Best Choice)

NOTE: Cleat and cheek bender is similar to a bar folder, it is a hand machine used to bend a metal sheet into an accurate fold measurement along the edge. Lists of the benders in the shop are provided below:

- # 24 – Cleat Bender on Stand (1/2in fold @ 18 in & 24Ga. max – RES)
- # 46 – Cheek Bender (1/4in fold @ 24 in & 24Ga. max – CSM)
- # 53 – Cleat Bender mounted on table (1/2in fold @ 18 in & 24Ga. max – CSM)

PROCEDURE

1. Roll a table with your materials adjacent to the side of the machine.

2. Visually verify the condition of the machine before you use it (*Report any damages or broken parts during this procedure, refer to our safety manual for the Tag/Lock Out Procedures*). Make sure that there are no hazards and other things than blocks your way when you fold your piece.

3. Insert your piece between the folding bar and the slotted base bar as you firmly hold it against the back gauge inside the slotted base bar, pull the lever arm connected to the folding bar towards you to fold your piece.

Use the slots at the base of the bar with regards to your material width to ensure an even fold. Leather gloves are optional but a cut-resistant glove is the best choice. At no time are sheet metal pieces to be leaned against the side of the machine or the foot of the table as this can create cut or tripping hazards that you can't see as the work piece is being folded.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch	2	Careful body part placement. Do not wear loose clothing
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.16 SJP114: FLOOR HAND BRAKES

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses and Gloves (Cut resistant - Best Choice)

NOTE: This is a floor mounted hand break that use to bend a metal sheet over the entire length in their rated capacity. We also use this to make cross bead to most material that can't fit to our Gang Gap Bead Machine. Lists of the hand breaks in the shop are provided below:

- # 25 – Brown Boggs Hand Break (8ft & 16Ga. max – RES)
- # 47 – Roper Whitney Hand Break (8ft & 14Ga. max – CSM)
- # 51 – Roper Whitney Hand Break (8ft & 14Ga. max – CSM)
- # 85 – (New) Hand Break on stand (4ft & 16Ga. max – CSM)

PROCEDURE

1. Roll a table with your materials adjacent to the break.

2. Visually verify the condition of the jaws, mounting bolts, apron, etc. before you use it (*Report any damages or broken parts during this procedure, refer to our safety manual for the Tag/Lock Out Procedures*). Make sure that there are no hazards and other things than blocks your way, the apron or the counterweight when you fold your piece.

3. Insert your piece between the jaws and line up your mark against the edge of the jaws. Lock it in by firmly grip the clamping lever (either the left or the right – it depends on your strong hand) and pull towards you to hold the material in place.

A firm grip and a controlled pulling motion on the clamping lever must be done when bringing down the upper jaw until you hear a clang sound. It's NOT supposed to be hard on your arm when you do this, if you're having a hard time pulling the lever, make some adjustments. Never-ever clamp your piece against the jaws if it's too tight, because you will have a hard time opening the jaws and you might injure yourself in the process.

4. To make some adjustments with regards to the clamping power of the jaws. There are two (2) clamping level turnbuckle located on both side ends of the break adjacent to the clamping lever (*Turn it to the left to loosen the grip and vice versa – you'll see a slight movement of the lever arm, if it moves away from you it means your tightening the grip; make sure to turn it gradually so you don't overdo it*).

5. Repeat step 3, make sure that the clamping pressure are evenly distributed towards your piece to make an even bend (*The maximum angle of bend you can do to this hand break is at 135˚*

degrees).

6. Push away the counterweight next to the clamping lever, as the apron swings upward, catch the apron in front of the break as you bend the material and make your angle of bend. Bring back the counterweight into its resting position slowly (*Watch yourself, don't let the apron and the counterweight to hit you or others in the process and don't let the apron bangs over the lower beam bracket when you put it back to rest*).

7. Release the piece by pushing away from you the clamping lever arm (*Be gentle – don't hurt your arm*) and pull out your piece.

DO NOT form or bend wire, nails, rods or pipe in these brakes. Leather gloves are optional but a cut-resistant glove is the best choice. At no time are sheet metal pieces to be leaned against the side of the machine or the foot of the table as this can create cut or tripping hazards that you can't see as the work piece is being folded.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch	2	Careful body part placement. Do not wear loose clothing
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.17 SJP115: CUT-OFF MACHINES

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Face shields, ear plugs and Gloves (Cut resistant - Best Choice)

NOTE: Everyone using abrasive wheels and machines must be familiar with the instructions and fully comply with all applicable safety codes for safe operation. Before using this piece of equipment, you must first be trained and have permission from the shop supervisor. We have to kinds of cut-off saw in our shop. Lists of these are provided below:

- # 78 – Walter Cut-off Saw (Aluminum Material Only – CSM)
- # 79 – Everett Cut-off Saw (Steel Material Only – CSM)

PROCEDURE

1. Roll a table with your materials adjacent to the tool.

2. Visually verify the condition of the wheel, wheel guard, etc. before you use it (*Report any damages or broken parts during this procedure, refer to our safety manual for the Tag/Lock Out Procedures*). Make sure that there are no hazards and other things than blocks your way.

3. Adjust down stop so that wheel passes thru wheel slot in vise but does not touch the bottom of the vise. (*The wheel, if allowed to touch the vise, will cut the vise as easily as it cuts your material. Lower the stop as wheel wears*).

4. Hold the material in the vise (*It is very important that the material does not move while being cut. When cutting long lengths use the conveyor onboard support to keep the material level with the vise*).

5. Start your cut by bringing the cutting wheel onto the material gradually and apply steady even pressure until the cut is complete (*Recommended cutting speeds to start are 5 seconds per square inch of material dry cutting, and 30 second per square inch wet cutting*).

6. Release the piece from the vise and turn the machine off. Always keep your work place clean.

DO's…

- Read the operator's manual carefully. Learn the applications and limitations as well as specific potential hazards related to this tool.
- Keep guard in place and in working order. Never operate the tool with any guard or cover removed. Make sure all guards are operating properly before each use.
- Ring test and inspect each wheel before installing.

- Wear full face shield when operating this tool.
- Operate within rated machine capacity.
- Always keep wheel guard in down position except when changing wheel.
- Keep hands clear of cutting area.
- Observe all common sense safety practices.

DON'Ts…

- Do not exceed machine capacity.
- Do not over feed cut-off wheel.
- Do not use wheel if cracked or fractured.
- Do not modify the plug provided – if it will not fit into the outlet, have the proper outlet installed by a qualified electrician.
- Do not use side of cut-off wheel for grinding.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch	2	Careful body part placement. Do not wear loose clothing
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.18 SJP116: BOX AND PAN BREAK

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses and Gloves (Cut resistant - Best Choice)

NOTE: This Box & Pan Break is another type of hand break; this is used to bend a metal sheet over using a finger assembly or groups of finger assembly's. It is rated for bending of 30Ga – 22Ga of sheet metal and with a wide range of finger assembly, this machine is a MUST when bending narrow pieces with offset bends.

PROCEDURE

1. Roll a table with your materials adjacent to the break.

2. Visually verify the condition of the finger assembly's, mounting bolts, apron, etc. before you use it (*Report any damages or broken parts during this procedure, refer to our safety manual for the Tag/Lock Out Procedures*). Make sure that there are no hazards and other things than blocks your way, the apron when you fold your piece.

3. Select and insert your desired finger/s assembly onto the upper clamping bar (*Different finger assembly can be found at the base of the break, it is arrange by sizes – 2in, 3in, and a 4in finger width's*). Clamp the finger assembly onto the jaw of the upper bar and tighten it with the use of an Allen wrench provided with this tool (*Hand tight only to avoid damaging the Allen screw head*).

A firm grip and a controlled pulling motion on the eccentric lever must be done when bringing down the upper jaw until you hear a clang sound. It's NOT supposed to be hard on your arm when you do this, if you're having a hard time pulling the lever, make some adjustments. Never-ever clamp your piece against the jaws if it's too tight, because you will have a hard time opening the jaws and you might injure yourself in the process.

4. To make some adjustments with regards to the clamping power of the jaws. The clamping pressure is controlled by two (2) nuts located at the eccentric handle assembly (Left and right end of the handle assembly – *turn it to the left to loosen the grip and vice versa – make sure to turn it gradually so you don't overdo it*).

5. Insert your piece between the finger/s against the lower jaw; make sure that the clamping pressure is evenly distributed towards your piece to make an even bend.

6. Pull the apron upward as you bend the material and make your angle of bend. Bring back the apron into its resting position slowly (*Watch yourself, don't let the apron hit you or others in the process and don't let the apron bangs over the lower beam bracket when you put it back to rest*).
7. Release the piece by pushing away the eccentric lever arm (*Be gentle – don't hurt your arm*) and

pull out your piece.

DO NOT form or bend wire, nails, rods or pipe in these brakes. Leather gloves are optional but a cut-resistant glove is the best choice. Put away with care the finger assembly into the rack at the base of the break and never drops it to avoid deformation or denting the finger edge. At no time are sheet metal pieces to be leaned against the side of the machine or the foot of the table as this can create cut or tripping hazards that you can't see as the work piece is being folded.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch	2	Careful body part placement. Do not wear loose clothing
Eye Injury	2	Wear safety glasses

HAZARDS **CONTROLS**

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Manual

4.19 SJP117: AIR SHEAR

PROCEDURE

Move a rolling table over to the sheet metal racks, load the correct amount of sheets or scrap metal and wheel back to the shear. Ask for help with heavier sheets of metal

1. Notch the scrap or full sheets with the correct measurements.

2. With the sheet pushed firmly against the guide fence, feed the sheet in until both notched sides are past the cutting blade and pull the sheet back until the notches catch on the cutting edge.

3. Placing one foot on the shear pedal and both hands on the material, gently push down on the pedal so that the cutting blade hits both notches at the same time.

4. Collect the pieces you have cut from the back side of the shear. All scrap metal must be put in metal bins or larger scrap must be put back in the racks.

NOTE: Shears 1 & 2 closest to the Pearson power shear are used for commercial use and the last shear is shared by residential and commercial. At no time is anyone to put their hand (fingers) into the notches of the hold down fence.

HAZARDS	RANK	CONTROLS
Pinch	2	Keep hands away from fence and shear blade. Situational awareness
Cuts to hands	2	Wear cut resistant gloves when handling sheet metal
Strains/Sprains	2	Get help when handling awkward/heavy sheets of metal

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.20 SJP118: CLEAT BENDER AIR OPERATED

NOTE: Only trained shop staff shall be allowed to operate this equipment. If you have any questions or concerns please speak with your supervisor.

PROCEDURE

1. Wheel a loaded rolling table and an empty table over to the cleat bender.

2. Look at the material you will be forming, take notice of the sides that need slips and the others that need drives.

3. Special care needs to be taken as serious pinch points can occur, so watch your fingers and hands.

4. Proper PPE is required to operate this unit.

5. Take one piece of material and place it on the material table. Only form one piece at a time.

6. Insert the material between the cleat bender fingers so that the material is sitting tightly against the back fence.

7. Step on the foot pedal and complete a full cycle, as the fingers start to release, remove the material and inspect for imperfections.

8. Stack all completed product the same way on a rolling table or cart.

NOTE: Drives go on the female side and slips go on the male.

PPE REQUIREMENTS; Safety Glasses and cut resistant gloves

HAZARDS	RANK	CONTROLS
Pinch	2	Exercise caution. Situational awareness
Cuts to hands	2	Wear Cut Resistant Gloves
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S Safety Manua

4.21 SJP119: COLLAR MACHINE

PROCEDURE

1. Before operating this unit you must have proper training and permission from the supervisor. As well as proper PPE such as safety glasses, hearing protection and a good pair of gloves.

2. Look at the outside steel horseshoe ring around the front of the machine to see what size it has been set for.

3. Make sure that the power cord is not plugged in as this machine can cause serious pinch points and injury.

4. All the tools needed to switch the size of the unit are located in a green coffee can just to the left of the machine on a fixed table.

5. Open the top cover of the unit to access the inner components to change them out.

6. Lock off the belt pulley with the steel rod, place the steel rod against the pulley and a solid piece of metal preferably the cross member of the pulley support.

7. Start to remove the horse shoe guides with a 5/8" hand wrench. Remove the bottom bolts and work your way up, as this will hold the guides in place until the top bolts are ready to come out.

8. Loosen the stop fingers, and push them to the farthest position back. Use the Allen key provided to loosen and remove the inner fingers and reposition them in the correct location as per the size of material being formed.

9. Re-assemble the inner parts and adjust the stop fingers, remove the steel rod and step on the pedal to separate the forming wheels and hand spin the forming set by hand to check if the forming wheels will catch on any parts of an incorrect set up.

10. Once set up has been double checked, close the top of the unit and lock in place. Plug the power cord in. Insert a completed collar into the horse shoe guide so that the collar is flush to the face of the guide and the back of the collar is resting on the stop fingers.

CAUTION THIS MACHINE CAN CAUSE SERIOUS HAND INJURY AND THERE ARE A FEW PINCH POINTS TO BE AWARE OF SPECIAL CARE MUST BE TAKEN.

11. Turn the power switch on. Carefully place the material into the collar locked in place by pulling the handle towards the floor, proper hand placement should be at the 7:00 and 5:00 position as this will ensure that hands are far enough away from moving parts. Extra caution is needed as the material may slip out of the collar and direct your hand towards the moving parts.
12. Once the material is held in place firmly, step on the foot pedal for no more than 10 seconds.

Release the foot pedal and loosen the handle a bit and turn the material and collar a quarter turn and step on the pedal again for 6 seconds and release. Remove the material and inspect for deficiencies.

13. Remove completed product and stack on a rolling cart or bin.

HAZARDS	RANK	CONTROLS
Hand/Finger Pinch	2	Wear appropriate cut resistant gloves. Exercise caution when operating machine
Cuts to hands	2	Wear appropriate cut resistant gloves and exercise caution when operating machine
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

Manufacturers' operators manual will offer the best information to safely operate the equipment. For more information on safe machine operation, speak with the shop foreman / supervisor

4.22 SJP120: DRILL PRESS

Before operating this equipment, inspect the machine then clean up machine and area around machine. If necessary ask your supervisor for safe operating advice. Assess potential hazards prior to beginning this task.

1. Select the correct drill bit for the job at hand.

2. Loosen the chuck with the key provided with the drill press. This may be located in the bit box or near the drill press.

3. Insert the correct drill bit and tighten the chuck by hand so that the bit fits correctly, use the chuck key to tighten the chuck completely.

4. Adjust the table height and depth gauge to the appropriate settings.

5. Place a block of wood on the adjustable table, so that you don't drill into the table and explode the drill bit. Use a fixed or rolling metal stand to support the material you will be working on.

6. Once the drill press is set and ready to go, place the sheet or sheets onto the fixed or rolling metal stand and adjustable height table. At this point it may be necessary to clamp the work pieces to the table to prevent the drill bit from grabbing and spinning the work at high speed.

7. Turn the power on to the drill press, and with the left hand hold the material and with the right hand hold the drill press handle. Rotate the handle until the bit contacts the sheet or sheets.

8. With even pressure, keep rotating the handle until the bit bores into the wood block under the material. When nearing the bottom end of the pile ease up on the drill bit as this will create a cleaner hole when exiting the material.

9. Release the drill press handle and power the unit down, collect the material and place back onto a rolling table.

HAZARDS	RANK	CONTROLS
Cuts to Hands/Arms	2	Clamp work firmly or block work to keep from spinning. Wear gloves
Entanglement	2	Do not wear loose clothing
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.23 SJP121: DUCT LINER STATION

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Gloves and a Dust Mask / Respirator (Best Choice)

NOTE: The liner station consists of three different areas. A workbench with a spool for mounting a roll of duct liner at one end. This is used for hand cutting odd shapes and sizes of liner. Next there is a station equipped with a machine called a duct liner sizer. This assists in cutting larger straight cut pieces accurately and quickly. The third and final station consists of a bench where a water based adhesive is applied to the inside of the duct parts then a machine made by Duro Dyne which is an auto feed pin spotter. This procedure will cover all three areas in sequence.

PROCEDURE

1. **Cutting Bench**. Install a role of liner on the liner spool at one end of the bench. The liner can be either 1 inch or 2 inches thick depending on the job. Be sure to read through the MSDS sheet for the duct liner material to be aware of hazards handling this material. The MSDS sheet can be found in the binder mounted on the wall of Foreman's office. Be sure to wear PPE recommended in the MSDS. Dust mask, gloves and safety glasses. It also recommends long sleeve shirt to avoid getting fibers on arms.

2. Pull liner onto work bench by grabbing loose end of roll and pulling across work bench. Keep bench surface clear of debris. Place sheet metal piece on top of liner then cut around outside edge with a sharp razor knife. Be sure to keep hand not holding razor knife out of path of force being applied to razor knife. Also be very aware of sharp edges of sheet metal part being traced. **Cut resistant gloves are available from the safety supervisor.**

3. Put sheet metal part with duct liner (keep together) onto a rolling table. Repeat step 2 until all parts have had liner cut for them and they have been placed on the rolling table. Be sure parts are stacked in a stable manner so as not to fall off while moving table over to gluing and pin spotting station. See steps 13-19 for safe procedure on gluing and pin spotting.

4. **Duct Liner Sizer Station**. The Liner Sizer machine assists the workers with quickly cutting liner to size and maintain consistent width and length. First install a roll of duct liner on the spool at the left-hand side of the machine. This will again be either 1 inch or 2 inch thick duct liner. Be sure to be wearing a dust mask, gloves and safety glasses before handling material. Handling liner creates airborne fiberglass particles that can be breathed into your lungs. Check MSDS for medical information on the effect this can have on your health.

5. Turn duct liner sizer on. There is a switch on the right side of the main control box.

6. On the left-hand side of the main control box there is a toggle switch which allows you to raise

and lower the press roller that presses the material against the power feed roller. Using the toggle switch raise the press roller.

7. At this time move the width cutter wheel into position. There is a ruler attached to the bar that the width cutter slides on. Loosen the clamp screw and center the cutter wheel on the desired width measurement. Tighten the clamp screw on top of the width cutter. The cutter wheel is quite sharp so be careful handling it and wear gloves.

8. Grab the loose end of liner fabric and keeping it tight to the guide at the front of the machine, pull it under the press roller. Using the toggle switch on the main control box lower the press roller onto the fabric.

9. On the right-hand side of the machine, there is a sliding stop that will allow you to set your cut length. This has three buttons on top, one button operates the power feed roller to advance the material through the machine. There is a middle cutter button which activates the cutter that cuts the material to length. Then there is a reverse button which allows the power roller to back the material up in case it's gone too far. The sliding stop also contains a light activated power feed shutoff. Once the material reaches the light the power feed stops. There is a ruler alongside the sliding control stop that allows you to easily set your desired cut length. Move the sliding stop to the desired length at this time.

10. Press the power feed button on the sliding control stop until the material reaches the light activated stop.

11. Press the cutoff button in the middle of the sliding stop. This activates the length cutting wheel which is pneumatically powered. The wheel will run straight out 4 1/2 feet and return to its starting position. There is a guard covering this wheel to prevent workers from getting their hands in the way of the cutter. Be sure the guard is in good condition and properly installed before using this machine. Before pressing the cutter button it's a good idea to take a quick look be sure the area is clear.

12. Remove the cut liner piece from the cutting table and put it with the duct it will be installed in. Repeat steps 4 through 12 until all liner has been cut for the job.

NOTE: During use of the duct liner sizer, the operator will have to keep checking to be sure the fabric is still tight to the front guide. The fabric tends to move away from the guide. Be sure to wear gloves, dust mask and eye protection while operating the equipment.

13. **Gluing and Pin Spotting Station.** This is the last station in the duct lining process. Place your first duct piece with its liner on the workbench. Move the liner off to the side.

14. Open a container of the water-based liner glue. Using a paintbrush or a roller spread the glue evenly over the inside surface of the duct piece. Read the MSDS sheet on the water-based glue to

be sure you know how to handle the material safely.

15. Place the liner back onto the duct piece with the dark side of the liner facing away from the glue. Press down on the duct liner to set it into the glue. Be sure to wear a dust mask and work gloves as well as safety glasses. Again be careful of any sharp edges on the sheet metal.

16. Next to the gluing bench is the pin spotting station. The pin spotter is an auto feed Duro Dyne Mach 2. Before bringing the lined and glued duct to the pin spotter the machine will have to be powered on and the pin hopper topped off. It is strongly recommended that any new workers review the safety portion of the operator's manual before using the tool. Be aware of the electric shock hazard as well as the potential for arc flash and burns. There is safety signage on the machine. Read and follow any manufacturer's instructions.

17. Wearing rubber palmed gloves (preferable) bring the lined piece to the pins potter and using both hands position the piece (liner side up) so the location for the first pin is directly between the spotter electrodes.

18. Place your foot in the actuator pedal housing and press down. The electrode holding the pin will lower down until the tip of the pin contacts the sheet metal under the liner when it will close the circuit and quickly weld the pin to the surface of the sheet metal.

19. Release the pressure on the pedal and the electrode will rise up and reload. Shift the duct to the next appropriate pin position then depress the foot pedal then release once the pin has been welded on. Repeat until all necessary pins have been welded in place. Repeat this procedure for every remaining piece.

During the pin spotting process be sure to wear all proper PPE. Dust mask, gloves and safety glasses to avoid possible arc flash damage to the optic nerve. Also be sure to keep both hands well out of the way of electrodes prior to depressing the foot pedal. Once a week the Liner Stations as well as the area right around them should be either vacuumed or swept up using an anti-dust product such as green sweep.

HAZARDS	RANK	CONTROLS
Burns	2	Wear gloves
Cuts	2	Wear gloves
Silica Dust (long term effects Eye Injury)	2	Wear respirator / N95 Dust Mask
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual MSDS Sheet for liner material (see binder at shop office) , Section-7, PPE. Alberta OH & S Act Regulation & Code Schedule 1.

4.24 SJP122: GAP GANG PUNCH MACHINE

PROCEDURE

Start by rolling a table over to area needed and tuck it out of the way as this will be in the Residential Department area.

1. Adjust the punch fingers with the appropriate tools located in the coffee can sitting beside the punch. This will consist of a 1/4" T-handle Allen wrench and a 9/16"socket extension.

2. Depending on the job, there are a couple of different patterns to set up the punch, if not sure which pattern to use ask the supervisor for assistance.

3. With the material pushed firmly to the fence guide, push the material into the punch until the sheet contacts the punch fingers. Check to see if the sheet is still against the guide.

4. With your foot, push down on the foot pedal until the punch tabs go through the sheet.

5. Remove the sheet from the punch and flip the sheet end over end and insert the non-punched end into the punch.

6. Repeat step 3-5 checking every 5-10 sheets for imperfections and punch tab changes.

7. Proper PPE is required to operate this machine such as gloves, glasses and hearing protection.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Hearing Damage	2	Use provided ear plugs (see wall dispenser)
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.25 SJP123: HYDRAULIC SHEAR

PROCEDURE

Before using this piece of equipment, you must first be trained and have permission from the supervisor.

1. Wheel a loaded rolling table of sheet metal over to the shear.
2. Turn on the power and back light to the shear.
3. Measure and notch the material waiting to be cut.
4. Adjust the shear for the correct measurement; there is a GREEN Power button to energize the shear, a RED EMERGENCY STOP button, a BLACK button to adjust the back gauge and a BLACK hand wheel to fine tune the measurement.
5. Place the material on the shear table, keeping the sheet pushed tightly against the fence.
6. Step down on the foot bar until the shear blade has cut through the sheet.
7. Remove the piece you have just cut, and place it back onto the rolling table.
8. Clean up scrap pieces that have been collected in the back of the shear and put away accordingly.
9. Safety glasses, gloves and hearing protection are all required to operate this machine. Two people may be required depending on the size of the sheet.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Back Injury	2	Get help for large pieces of metal
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacturer's Operators Manual, ARPI'S INDUSTRIES LTD Safety Manual

4.26 SJP124: INSTALL COIL PROCEDURE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

Note: The following procedure is only to be performed by a trained / certified forklift operator.

1. Adjust the forks on the large Toyota forklift so they will fit into the coil hoisting attachment or pockets.
   - **Hazards**: It is possible to pinch your fingers while sliding the forks into position.
   - **Control**: wear gloves and arrange a helper to give you a hand.

2. Pull the forklift forward slowly sliding the forks into the pockets on the coil hoisting attachment.

3. Chain the coil hoisting attachment to the mast of the forklift
   - **Hazard**: forklift could roll forward or attachment slide off fork.
   - **Controls**: make sure the forklift emergency brake is on while attaching coil hoisting attachment and tilt forks up slightly to prevent the attachment from falling off.

4. Raise coil hoisting attachment up so the bottom of it is about six (6) feet above the floor.

5. As the attachment will now be in your field of view use your assistant to guide you and slowly drive the forklift over the coil line and position the attachment directly above the empty coil spool.

6. With assistance slowly lower the coil hoist into position so it is centered on the spool.

7. Again with assistance slowly pull forward so the hoist bracket nearest the mast comes to rest just below the spool pocket.

8. Have your assistant slide the far bracket forward so the bottom of it rests just below the opposite spool pocket.

9. Slowly raise the hoist attachment so the brackets engage in the pockets on the spool. Raise the spool so it is free of the tubular frame railings.

10. With assistance slowly back up the forklift making sure there are no obstacles or people in your way and position the forklift in front of the coil you are about to hoist.

11. Lower the hoist so the spool is resting on the ground and the brackets are disengaged from the spool hoisting pockets.

12. With your assistants help, remove the far side of the spool from the mast of the fork lift. This will

reveal the end of the spool axel.

13. Make sure the forklift and Spool axel are lined up with the coil you are about to mount. Drive the forklift forward slowly inserting the axel through the center of the coil.

14. Attach the far spool side to the axel then slide the hoisting bracket so it can is directly below the hoisting pocket.

15. Slowly raise the hoisting attachment so the brackets engage the pockets on the spool then raise the spool and coil into the air.
    - **Hazard**: brackets may not engage pockets correctly and coil can fall.
    - **Control**: make sure to keep any helpers out-of-the-way while raising the coil. The coil of metal can weigh over 5 tons.

16. With your helper guiding you slowly maneuver the forklift and coil into position directly over the axel brackets on the tubular frame.

17. With your helper watching the far end of the coil slowly lower the spool and coil into position so the ends of the spool axel lineup with the axel pockets on the tubular frame.

18. Lower the hoisting attachment so the bottom of the brackets disengages from the Spool pockets. Slide the far bracket away from the spool and slowly back the forklift up a few inches to disengage the front bracket.

19. Raise the hoisting attachment so it is free of the spool then carefully back the forklift up and position the hoisting attachment where it will be stored and lower it down and unchain from the mast of the forklift.

Note: At all times during this procedure, remain vigilant of proper alignments and aware of the potential hazard of the spool coming free of the hoisting attachment prior to lowering into the frame. Make sure paths are clear and people are kept clear of area until procedure is complete.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch	2	Careful body part placement. Do not wear loose clothing
Crush Injury	2	Follow above procedure
Property Damage	2	Use helper (spotter) for assistance
Eye Injury	2	Wear safety glasses

4.27 SJP125: PIPE LINE MACHINE

PROCEDURE

1. Before operating this machine you must first have permission and be properly trained.

2. Proper PPE is required to use this unit such as safety glasses, hearing protection and gloves.

3. Move a low loaded rolling table over in front of the pipe machine.

4. Set the clutch measurement as per the size of pipe to be run. (see attached sheet)

5. Adjust the clutch guide and vise grip them in place as per the size of pipe to be run.

6. Adjust the rollers at the end of the line by loosening the lugs with the Allen key provided. Once the lugs are loose turn the handles by hand to the desired size and hand snug only.

7. Turn the power on to just the rollers. Listen to the rollers for the sound of bearings chattering, either loosen or tighten the rollers.

8. Once the rollers have been set, power the whole unit up. Pull the oilier handle up all the way as to lube the forming wheels. Run a couple of pieces through the line to see if the rollers have been set correctly. Checking the crimp and roll and also checking the pipe lock for imperfections.

9. Feed one piece at a time, making sure not to feed the next sheet in until the previous sheet has passed the clutch.

10. If the sheets are fed to fast, it will cause a jam up and possibly damage the pipe line.

11. Running pipe is a two man job, one normally feeds sheets and the other catches completed pipe.

12. Once all the sheets have been run, they must be put away. Ask the supervisor to advise put away location.

13. When stacking pipe, first sweep out the area where you will be stacking the pipe. Bundles must not have more than ten (10) individual pieces of pipe.

14. Marking the size on the outside of the pipe bundle will ensure proper placement.

15. If at any time an emergency should arise. There is an EMERGENCY STOP at the end of the line closest to the person feeding the sheets. There are also stop buttons for every segment of the pipe line. These buttons are located at the MAIN CONTROL box in the centre of the machine closest to the person catching.

PIPE SETTING SIZES

SIZE	RIGHT	LEFT
4”	7”	6 1/4”
5”	10”	9 1/4”
6”	13”	12 1/4”
7”	16”	15 1/4”
8”	19”	18 1/4”
9”	22”	21 1/4”
10”	25”	24 1/4”
12”	32”	31 1/4”
14”	all the way back	34 1/4”

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch/Crush Injury	2	Careful body part placement. Do not wear loose clothing
Eye Injury	2	Wear safety glasses

4.28 SJP126: PLASMA CUTTER

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

The Computerized Plasma Cutting Machine is equipment that requires training before it's operated by any employee. Please review this step-by-step procedure carefully to acquaint yourself with safe operation protocols and the potential hazards associated with working on this equipment. Where in doubt ask supervisor for clarification. A copy of the manufacturer's safety recommendations for that piece of equipment will be kept near the operators control panel.

PPE Required: Dark Safety Glasses, Gloves, Respirator (Fit Tested), Ear Plugs.

PROCEDURE

1. Take a rolling table to the sheet metal racks located at the sheet storage area. The sheet-metal can be quite sharp and heavy. Ensure to wear hand gloves and ask for help loading the table where material is heavy and large. Load the table with the sheet metal you will need for the job at the plasma cutter.

2. Once you have selected your sheet metal and loaded it onto the rolling table, safely push the table through the shop area and position the sheet metal table directly in front of the plasma cutting table. This can be done by you depending on the quantity of sheets. Where quantity is plenty ask for assistance from a colleague to push the table through the sheet-metal shop.

3. Pull the sheets required for the job onto the plasma cutting tables. There are both the left and right burning tables. Again, ensure to wear hand gloves since the plasma cutting table has some blunt raw edges as well. When hand gloves worn out or torn ask your supervisor for a new pair.

4. Turn on the 3000 CFM exhaust fan and the lights.

5. Check the air pressure gauge mounted on the back wall behind the plasma cutter to see that the required pressure is adequate. Where the required pressure is not registered on the gauge report to you supervisor immediately and do not operate.

6. Prior to starting any cuts check the copper cutting for any damage or wear. If any contact supervisor and replace.

7. Make a test run with the plasma cutter to double check that everything is okay. This will enable you know what table the plasma cutter is currently set up for and make any adjustments before going to next step.

8. Also check the support metal strips mounted in the bed of the plasma table. These wear out and have to be replaced every month as the cutter head burns into them as well.

9. Go to the computer in the programmer's office and print out the list of duct and stickers to place on the cut pieces.

10. Go back to the machine and using the operators control panel, initiate the first series of cuts on the left side table. Ensure you're wearing dark safety glasses to prevent arc flash damage to your eyes.

NOTE: If the sheet-metal being cut in is 24 or 26 gauge, the operator will most likely have to hold the metal in place as the cutter head makes its passes. This will require the operator to wear gloves, dark sunglasses, ear plugs and a fitted respirator to prevent inhalation of the zinc oxide gas produced by the plasma cutter. Even though the exhaust system will evacuate most of the zinc oxide gas, small amounts will escape into the air above the cutter head. The operator should keep his face away from the cutter head. Where sheet-metal is 22 to 18 gauge in thickness, the operator is not required to hold the metal or wear a respirator but still needs to have his other PPE on.

11. Once the plasma cutter has completed its cuts on the first sheet of metal, the operator can then apply the proper stickers to each piece so the assembly workers will know the proper orientation of the duct parts. Once the stickers are in place the parts can be removed from the cutting bench.

12. The cutting process will leave shreds of waste sheet metal surrounding the parts that have been cut. Wearing a sturdy pair of gloves, the operator should remove this metal and put it into the nearby metal bin. The scrap metal is going to have very sharp or raw edges and could also be quite hot if freshly cut.

13. The operator can now start the plasma cutter up again on the right table making sure the cutter head is aligned properly with the sheet-metal on the table.

14. While the plasma cutter is working on the right table the operator can pull another sheet of metal if necessary on to the left side table in order to get ready for another series of cuts. Repeat steps 10 through 14 as needed.

15. On Monday, you will need to turn on the computer and the operators control panel beside the plasma cutter. On Fridays, the entire system is shut down completely.

NOTE: The bridge that carries the plasma cutter head and travels up and down the rails of the table has a shut off button on the end of it. This is at the front of the machine. It can be pushed at any time during operation to shut the machine down. At no time should the machine be operated if any guards are missing or damaged or with any safety devices bypassed /defeated.

HAZARDS	RANK	CONTROLS

Zinc Oxide Fumes	2	Use a fitted respirator with combination OV/P100 and ensure that the exhaust system is operating
Eye Damage	2	Wear tinted safety glasses and avoid looking directly at the cutting arc
Burns	2	Gloves should be worn when pulling freshly cut pieces off cutter bed
Cuts	2	Wear cut resistant gloves

4.29 SJP127: POWER CRIMPER

PROCEDURE

1. Start by loosening the top crank so you can insert the material.

2. Keeping the material tight to the fence, rotate the crank handle so that both top and bottom dyes are contacting the material ready to be formed.

3. Holding the material with one or both hands and press down on the foot pedal until the material rotates 360 degrees. Rotate the crank handle again until the desired crimp has been formed.

4. Loosen the hand crank and slide the material out and inspect for deficiencies.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch	2	Careful body part placement. Do not wear loose clothing. Stay clear of the forming wheels
Eye Injury	2	Wear safety glasses, goggles, and/or face shield

4.30 SJP128: POWER EDGE FORMER

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

POWER EDGE FORMER
The power edge former can cause particles of slag from the plasma cutting process to fly up towards the operators face so safety glasses are a must for working on this equipment. Leather or rubber palmed gloves are recommended as well as the piece being formed will have sharp edges and corners.

Inspect the edge former for any damage or missing parts prior to use. Check the power cord as well for casing damage, exposed wiring or missing ground pin. If any damage or missing parts are discovered immediately tag the machine out of service until repairs can be performed.

Step 1: Install the correct wheel set for the job at hand.

Step 2: Adjust the fence to the correct depth for the job at hand.

Step 3: Open the forming set up enough to allow the material being formed to be placed against the fence. This can be done by turning the top mounted crank in a counter clockwise direction.

Step 4: Close the forming set up by turning the top mounted crank in a clockwise direction until pressure is applied to the piece.

Step 5: While holding the weight of the piece being formed in hands and applying pressure towards the fence, step on the pedal to start the machine turning and forming the metal edge.

Step 6: Carefully guide the work piece around as it is turned and formed being careful to apply a constant pressure towards the fence for the first pass. Once the first rotation is completed release the pressure on the foot pedal. **Note: Make sure foot is removed from the foot pedal completely and machine is unplugged prior to making any adjustments to the machine.**

Step 7: If more forming is required, adjust the pressure being applied to the work by turning the top crank in a clockwise manner a small amount. Be sure to hold the work at a constant elevation through the forming process unless otherwise required. At this time step on the pedal to start the machine.

Step 8: Once a complete revolution has been completed, remove your foot from the pedal to stop the machine. Repeat steps 5 and 6 until the desired edge has been formed.

Step 9: While holding the weight of the work piece release the pressure of the forming set by turning the top crank counter clockwise until the work is free to be pulled out of the machine.

At all times the operator must keep a safe distance from the power forming wheels while the machine is in operation as these can be a serious pinch point hazard.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Crush/Pinch	2	Careful body part placement. Do not wear loose clothing. Stay clear of forming wheels
Eye Injury	2	Wear safety glasses

4.31 SJP129: PRESS BRAKE

PRESS BRAKE

1. Before operating this piece of equipment, you must be trained and have permission to use this machine.

2. Wheel a rolling table over to the brake and grab an empty table also.

3. Turn on the brake. There will be a GREEN power button on the right side of the unit.

4. Wearing proper PPE program the control box located near the top right of the press brake.

5. Setting the controls varies from job-to-job, so assistance may be required.

6. Once the brake has been programmed, test the brake to make sure it is set correctly. If necessary repeat step 5.

7. Once it is set up correctly, step on the foot pedal until the brake fully opens. Insert a piece of material into the brake while holding the sheet with both hands. If the sheet is too large a second person may be required. Step on the foot pedal until the top dye contacts the sheet, release the foot pedal.

8. Checking to make sure you are in the correct position to brake the sheet, step on the foot pedal again until the top dye contacts the bottom dye. Release the foot pedal and remove the piece you were working on.

9. Repeat steps 5-8 until complete.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch	2	Careful body part placement. Do not wear loose clothing
Crush Injury	2	Never reach through jaws of machine. Remove foot from pedal when adjusting metal
Eye Injury	2	Wear safety glasses

4.32 SJP130: STAPLING MACHINE

PROCEDURE

1. Training by the shop foreman/staff is required for the safe use of this equipment

2. Before operating this unit extreme care must be taken as there are pinch points to be aware of. Serious injury could occur.

3. Make sure that you will have enough wire to complete the job at hand if not replace spool or ask for assistance.

4. Proper PPE must be worn such as safety glasses, hearing protection and gloves.

5. Turn the machine power on.

6. Hold the work material firmly with both hands so it doesn't slip. Insert the material onto the stapling plate. Make sure fingers are away from any moving parts. Press down on the foot pedal and repeat if necessary.

7. Once completely done using the stapler, turn the power off and clean up around the station.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Pinch	2	Careful body part placement. Do not wear loose clothing
Eye Injury	2	Wear safety glasses
Hearing Damage	2	Wear ear plugs

REFERENCES

The operator's manual is always the best place to look for safety information in the operating of this equipment. See either of the shop foremen for this manual.

4.33 SJP131: VERTICAL BAND SAW

NOTE: Supervisory approval and training is a requirement for use of this machine.

1. Start by having proper PPE such as good hearing protection glasses and gloves; as this unit can cause serious injury.

2. Wheel a rolling table loaded with material over to the area near the band saw.

3. Start by checking the blade, light, tension and empting the filings can. Replace the blade if required.

4. Place the material onto the band saw table; while holding the material with both hands guide the material into the blade pushing evenly until the material has been cut.

5. Take special care where you place your hands, as they can come close to the blade and cause serious injury or loss of fingers.

TO REPLACE THE BAND SAW BLADE

1. Turn the power off. Unplug machine so it can't accidentally be started.

2. Loosen the tension wheel located under the two rotating wheels before the blade goes through.

3. Remove the saw table and blade block. To remove the table you must first locate the table locks located under the table. Turn the locks counter clockwise and slide the table out towards yourself. To remove the blade block just pull it straight up.

4. Before removing the blade look and see which direction the blade teeth are facing. (they should be facing in a downwards direction.)

5. Remove blade and discard in the metal bin.

6. Ask the supervisor to get a new blade or check the shelf outside the supervisor's office.

7. Uncoil the new blade and flip inside out if need be. Place one loop of the blade on the lower guide wheel and feed the blade over the rest of the guide wheels. Make sure that the blade is not rubbing on the back side of the guide wheels as this could cause the blade to jam and break or pop the blade off the guide wheels.

8. Once installed check the tension and make sure the blade is aligned properly.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Hearing Damage	2	Wear ear plugs
Eye Injury	2	Wear safety glasses

4.34 SJP132: INSTALLING A MAIN LINE DUCT

1. Assess work area for any hazards such as openings in floor or drop offs, icy/slippery conditions, electrical hazards, other trades, overhead work etc. Clean and sweep floor of all dust and debris.

2. Using blue prints, layout required hangers for the duct line and mark locations on the floor.

3. Transfer hanger layout marks onto overhead slab using lasers. Laser beams can cause eye damage. Ensure eyes are not exposed to the laser beam.

4. Drill into overhead concrete (Use Respirator-Eye Protection) to install inserts or use beam clamps if marks fall onto beams. (See Safe Work Practice for installing inserts). Often a ladder, scaffolding or scissor lift must be used to reach the overhead slab. Observe all safe ladder & scaffold use rules, 3 points of contact, no use of top 2 steps, no leaning against wall and no walking ladder, get off ladder and move it. Scaffold must be green or yellow tagged to be used. Always inspect for proper setup or damage, missing parts. A scissor lift requires fall awareness/protection training as well as training on the scissor lift itself.

5. Cut threaded rod to required length. Ensure workers are aware of their location. Do not leave cut off lengths of threaded rod laying on the floor as it is a serious slip hazard.

6. Assemble 2 lengths of duct on floor and screw together (know your limits, do not put together to much ductwork). Seal the top of the joints if access after install will be limited.

7. If duct is large and heavy ask for help to place ductwork onto genie lifts. Be sure to lift with your legs not your back. Depending on size of ductwork several Genie lifts may be required to handle the load safely. Be aware of potential pinch points when lowering duct onto lifts.

8. Roll the Genie lifts with ductwork into position underneath hangers and raise ductwork using Genies. **Note:** When two or more genies are being used, **one person** shall give instructions to raise lower or shift ductwork. Once the duct is raised higher than head height area under duct is to be kept clear and other site workers made to go around work area and not walk directly under load.

9. Once required height has been reached install channel supports underneath ductwork and secure to threaded rod using nuts. As duct is now suspended by the hangers, the genies may be lowered to the ground. Ensure no one works underneath duct until it is properly supported.

10. This process may be repeated for the next length of ductwork, once in the air, the **new** section can be screwed to the first section hung.

NOTES

- **Gloves** should be worn at all times when handling the ductwork.
- **Safety glasses or goggles (best choice) as well as a properly fit tested respirator** will be necessary for installing the inserts.
- If using a scissor lift, a **personal fall restraint system** will be used. (Training required)

REFERENCES
ARPI'S INDUSTRIES LTD Safety Manual
See Part 9-Fall Protection of the OH & S Code

General protection

139(1) Subject to subsections (3) through (8), an employer must ensure that a worker is protected from falling at a temporary or permanent work area if a worker may fall

(a) a vertical distance of 3 metres or more,
(b) a vertical distance of less than 3 metres if there is an unusual possibility of injury, or
(c) into or onto a hazardous substance or object, or through an opening in a work surface.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Hearing Damage	2	Wear ear plugs
Eye Injury	2	Wear safety glasses
Silica Dust (long term effects)	2	Fit tested respirator
Crush Injuries	2	Situational awareness (hand placement)
Falls from Height	3	Personal fall protection system & training

4.35 SJP133: INSTALLING A RISER DUCT

NOTE: This task will involve working in very close proximity to shaft openings through the floor of the building. If guardrails/plywood covers are in place and need to be removed ensure signage and caution or danger tape warn other trades of the fall hazard. Workers performing this task will require fall protection training as fall restraint/arrest systems will need to be utilized if the openings are large enough to fall through.

1. Assess the work area for other potential hazards, ice/slippery conditions, overhead work, electrical hazards, toxic atmosphere, standing water, other trades etc. and keep work area clean to prevent accidentally knocking anything through opening in floor or down shaft.

2. Assemble two lengths of duct work and install hanger bracket(s) across duct to support duct across opening in floor. Know your limits and only assemble what can easily be maneuvered into place without injury. Depending on the size and weight of the ductwork, more help may be needed to assist in placing the duct in position. A chain fall or genie lift may be necessary. Safety glasses are to be worn at all times on commercial jobsites. Gloves will be required to prevent cuts. Use hearing protection if banging duct together.

3. Prior to removal of any guard rails/plywood covers, secure area around shaft using barriers or danger tape to prevent falls from other trades. All personnel within area will need to be wearing proper fall protection equipment and tool lanyards will be used to prevent tools from falling down.

4. Remove only enough guard rail/plywood to complete the install safely and proceed to lower ductwork through hole in floor, until hanger bracket sits on the floor to support duct.

5. Use necessary anchors/fasteners to secure to floor to prevent movement of ductwork. If using hit pins/nail-ins, ensure safe hand placement or use setting tool to start the pins when driving pins in with hammer.

6. Further lengths of duct maybe installed on top of riser duct until top of duct work is close to bottom of next floor. Screw and seal the connections as you go. If using ladders refer to ladder safe work practice.

7. Once duct install is complete (screwed, sealed) tidy up area and replace any guardrails removed during install before moving to next floor. To prevent material, tools or debris from falling through to the floor below, remaining openings around riser ducts should be covered.

8. Repeat steps 1 to 7 until riser duct is installed through all floors

NOTES

- Gloves should be worn at all times when handling the ductwork (prevent cuts).
- Safety glasses or goggles (best choice) as well as a properly fit tested respirator will be necessary for installing any overhead inserts.
- If using a scissor lift, a personal fall restraint system will be used. (Training required)

REFERENCES

ARPI'S INDUSTRIES LTD Safety Manual: See Part 9-Fall Protection of the OH & S Code

General protection

139(1) Subject to subsections (3) through (8), an employer must ensure that a worker is protected from falling at a temporary or permanent work area if a worker may fall

(a) a vertical distance of 3 metres or more,

(b) a vertical distance of less than 3 metres if there is an unusual possibility of injury, or

(c) into or onto a hazardous substance or object, or through an opening in a work surface.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Hearing Damage	2	Wear ear plugs
Eye Injury	2	Wear safety glasses
Silica Dust (long term effects)	2	Fit tested respirator
Crush Injuries	2	Situational awareness (hand placement)
Falls from Height	3	Personal fall protection system & training

4.36 SJP134: HANGING FANS

Developed by: Chris Ohem

1. Assess work area for any hazards such as openings in floor or drop offs, icy/slippery conditions, electrical hazards, other trades, overhead work etc. Clean and sweep floor of all dust and debris.

2. Using the mechanical plans, specifications, and fan shop drawings, layout required hangers for the fan and mark locations on the floor.

3. Transfer hanger layout marks onto overhead slab/deck using lasers. Laser beams can cause eye damage. Ensure eyes are not exposed to the laser beam.

4. Drill into overhead concrete (Use Respirator-Eye Protection) to install inserts (SJP-402) or use beam clamps if marks fall onto beams. (See Safe Work Practice for installing inserts). Often a ladder, scaffolding or scissor lift must be used to reach the overhead slab. Observe all safe ladder & scaffold use rules, 3 points of contact, no use of top 2 steps, no leaning against wall and no walking ladder, get off ladder and move it. Scaffold must be green or yellow tagged to be used. Always inspect for proper setup or damage, missing parts. A scissor lift requires fall awareness/protection training as well as training on the scissor lift itself.

5. Cut threaded rod to required length. Ensure workers are aware of their location. Do not leave cut off lengths of threaded rod laying on the floor as it is a serious slip hazard

6. Install the rods into the inserts

7. Place the fan on a genie lift (SWP-31) and raise it to the correct height. Be careful to ensure that the rods line up correctly with the mounts on the fan.

8. Secure the fan to the rods with two nuts to lock it onto the rod.

NOTES

- Gloves should be worn at all times.
- Safety glasses or goggles (best choice) as well as a properly fit tested respirator will be necessary for installing any overhead inserts.
- If using a scissor lift, a personal fall restraint system will be used. (Training required)

REFERENCES

ARPI'S INDUSTRIES LTD Safety Manual: See Part 9-Fall Protection of the OH & S Code

General protection

139(1) Subject to subsections (3) through (8), an employer must ensure that a worker is protected from falling at a temporary or permanent work area if a worker may fall

(a) a vertical distance of 3 metres or more,

(b) a vertical distance of less than 3 metres if there is an unusual possibility of injury, or

(c) into or onto a hazardous substance or object, or through an opening in a work surface.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Hearing Damage	2	Wear ear plugs
Eye Injury	2	Wear safety glasses
Silica Dust (long term effects)	2	Fit tested respirator
Crush Injuries	2	Situational awareness (hand placement)
Falls from Height	3	Personal fall protection system & training

4.37 SJP-135: REMOVAL OF DUCTWORK

1. Assess work area for any hazards such as openings in floor or drop offs, icy/slippery conditions, electrical hazards, other trades, overhead work etc. Clean and sweep floor of all dust and debris.

2. Assess the size of the ductwork to be removed. Multiple genie lifts may be required (SWP-31). If the ductwork is wider than the genie forks then extensions must be used.

3. Inspect the genie before use.

4. Centre the genie of the section of duct to be removed.

5. Raise the genie to take the weight of the ductwork off the hangers.

6. If you are taking the duct apart at the joint remove the screws or drive cleats from the section of ductwork that is to be removed. If joint is not accessible use a reciprocating saw to cut the ductwork to be removed.

7. In the case of TDC ductwork you may need to hammer a screwdriver or pry-bar into the joint enough to allow the gasket to be cut with a knife. Always cut away from your body.

8. Once the joints are separated remove the hangers from the duct.

9. Lower the genie to the ground. Watch the ductwork closely to ensure that it does not snag on anything or become unbalanced. All works must stay clear of any areas the duct may fall into. If multiple genies are being used a spotter must be used to instruct the genie operators to lower simultaneously to keep the ductwork balanced.

10. Repeat steps 4-9 until all sections are removed.

11. Use poly-plastic to seal any open duct ends once you are done for the day.

12. Cleanup any debris created during this task

NOTES

- Gloves should be worn at all times.
- Safety glasses or goggles (best choice) as well as a properly fit tested respirator will be necessary for installing any overhead inserts.

- If using a scissor lift, a personal fall restraint system will be used. (Training required)

REFERENCES

ARPI'S INDUSTRIES LTD Safety Manual: See Part 9-Fall Protection of the OH & S Code

General protection

139(1) Subject to subsections (3) through (8), an employer must ensure that a worker is protected from falling at a temporary or permanent work area if a worker may fall

(a) a vertical distance of 3 metres or more,

(b) a vertical distance of less than 3 metres if there is an unusual possibility of injury, or

(c) into or onto a hazardous substance or object, or through an opening in a work surface.

HAZARDS	RANK	CONTROLS
Cuts	2	Wear cut resistant gloves
Hearing Damage	2	Wear ear plugs
Eye Injury	2	Wear safety glasses
Silica Dust (long term effects)	2	Fit tested respirator
Crush Injuries	2	Situational awareness (hand placement)
Falls from Height	3	Personal fall protection system & training

4.38 SJP201: ROUST-A-BOUT

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Gloves, CSA approved steel toe boots and hard hats.

OPERATOR SAFETY INSTRUCTIONS

IMPORTANT
Read and understand Operators Manual before using Roust-A-Bout

Inspect cable before use. Do not operate if cable is frayed, worn or damaged.

Use only on solid level surface. Keep work area clear of clutter and debris.

Test load balance before lifting. Do not exceed rated load capacity. Never use two Roust-A-Bouts to lift a load which exceeds the capacity of a single lift.

Stay clear of overhead wires and obstructions.

Do not operate in gusty winds.

Never allow anyone under an elevated load.

Never leave Roust-A-Bout unattended with an elevated load.

Do not climb on Roust-A-Bout or put side load on mast.

Do not operate during storms.

Never lower load using free fall lever. Keep lever engaged at all times under loaded conditions.

OPERATOR SAFETY INSTRUCTIONS (CONTINUED)

Do not use Roust-A-Bout over 20 ft (6.1 m) without using Guy Lines.

Never lift a load over the short legs unless a counter weight equal to the load is applied to the long legs.

Do not pull or drag load.

Do not move the Roust-A-Bout by pulling on load line.

Do not raise or lower loads over 500 lb (225 kg) by raising masts.

Do not use accessories with the Roust-A-Bout that are not supplied by the manufacturer.

Wear proper clothing. Hard hat, safety shoes, and gloves should be worn as a precaution while operating this lift.

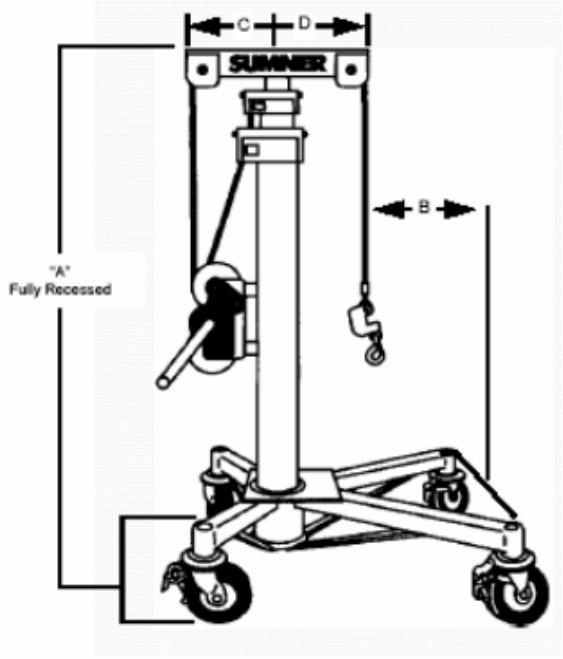
Avoid horseplay around equipment, and keep bystanders at a safe distance. Do not allow children to operate this unit and always keep them out of work areas.

Always match Base and Tee Head to correct model Roust-A-Bout.

SPECIFICATIONS

Model	Maximum Lifting Capacity*	Maximum Height
R-100	1500 lbs (680 kg)	15 ft. (4.6 m)
R-150	1500 lbs (680 kg)	15 ft. (4.6 m)
R-180	1500 lbs (680 kg)	18 ft. (5.5 m)
R-250	1500 lbs (680 kg)	25 ft. (7.6 m)
*1,000 lb. (455 kg) Limit (all models) with optional Tee Head Extension Bar		

For **OVERALL DIMENSIONS**, refer to the illustration and chart below.



Model	A	B	C	D	Base Dimensions	Shipping Wt.
R-100	79" 200 cm	20" 50 cm	12" 30 cm	12" 30 cm	32 x 40 80 x 100 cm	311 lb 140 kg
R-150	79" 200 cm	20" 50 cm	12" 30 cm	12" 30 cm	40 x 40 100 x 100 cm	311 lb 140 kg
R-180	126" 320 cm	25" 63 cm	14.5" 36 cm	14.5" 36 cm	50 x 50 125 x 125 cm	337 lb 153 kg
R-250	119" 302 cm	30" 75 cm	17.5" 44 cm	17.5" 44 cm	60 x 60 150 x 150 cm	381 lb 170 kg

ASSEMBLY INSTRUCTIONS

1. Turn base upside down.
2. Insert the four casters into the base legs.
3. Secure the casters into the base by installing the four supplied setscrews into the base legs and then tighten with allen wrench. Ensure screw is tightened onto caster stem.
4. Turn base over and lock caster brakes.
5. Insert mast assembly into base assembly socket with winch to rear of base, rear being the side of base with the shorter legs.
6. Ensure base latch is engaged.
7. Release tension on lifting cable by turning the lower shaft on the winch counterclockwise. Remove clevis pin and clevis. Now lower the lift cable so end of cable can be reached by operator.
8. Attach counterweight and line shackle directly to loop on end of lift cable.

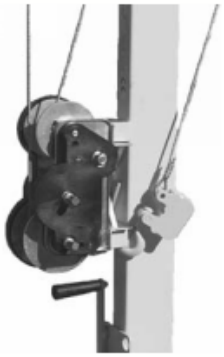
OPERATING PROCEDURE

WARNING
Operators should be thoroughly familiar with the preceding safety precautions before attempting to operate this equipment.

NOTE: Always lower mast assembly to the lowest possible position prior to moving unit.

1. MOVING ROUST-A-BOUT TO WORK AREA (NO LOAD)

1. The load line shackle should be attached to winch mount bracket prior to transporting unit to prevent the cable from swinging and striking operator or bystanders.
2. Attach winch handles to both sides of winch, which will allow them to be used as a handlebar to steer the unit.

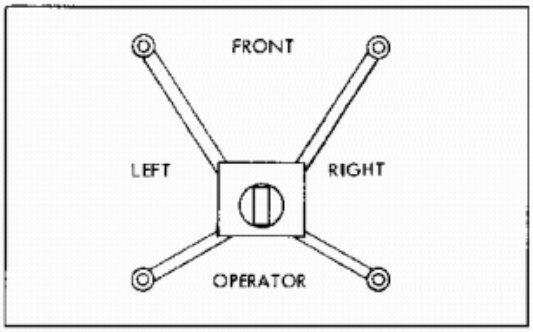


3. Release caster brakes.
4. Grasp winch handles and make a forward "S" motion to align casters for forward movement to work area.

WARNING
Roust-a-Bout should only be operated on level and smooth surfaces to avoid tipping and possibility of operator injury.

2. MOVING ROUST-A-BOUT TO WORK AREA (WITH LOAD)

1. When the Roust-A-Bout is used to transport a load, the load should be placed on the base legs for positive control of the lift.
2. The loaded Roust-A-Bout should only be moved in the forward direction, whenever possible.
3. Repeat steps 2, 3 and 4 from previous section.



3. Elevating Mast

NOTE: Mast should be elevated to required height prior to lifting any load over 500 lb (225 kg).

WARNING
"Guy Lines" must be used anytime mast is elevated over 20 ft (6.1 m)

3. Elevating Mast (continued)

1. Turn handle on left side of winch counterclockwise to elevate.

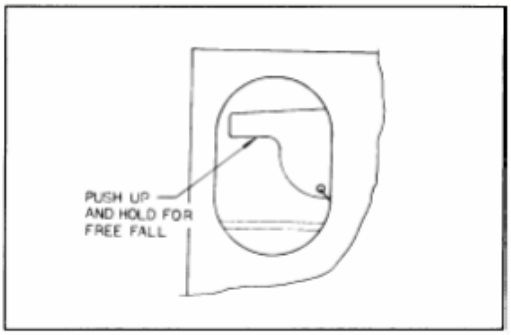
2. Never allow lift cable loop, Counter Weight, or line shackle to contact "Tee Head" while elevating mast. Continued cranking in this condition will cause "Tee Head" to bend.

NOTE: A red line will appear on the center mast as a warning to use "Guy Lines" on the R-250.

See page 10 for "Guy Line" assembly instructions.

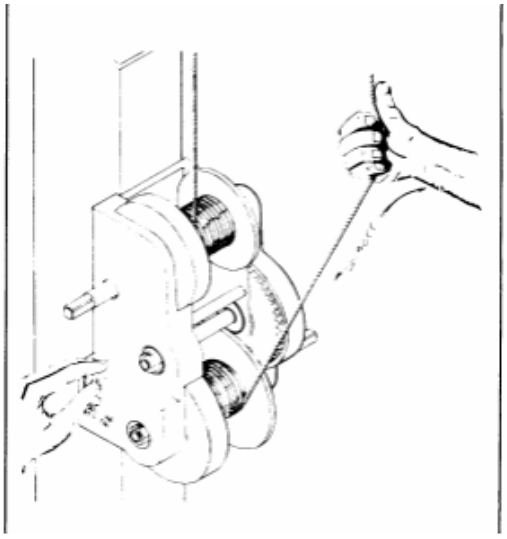
4. Attaching Lift Cable to Object

1. With mast elevated, lower lift line to load by pushing up, and holding, the Free Fall Lever (located on the left side of the winch).



WARNING
Never attempt to use free fall lever with a load attached.

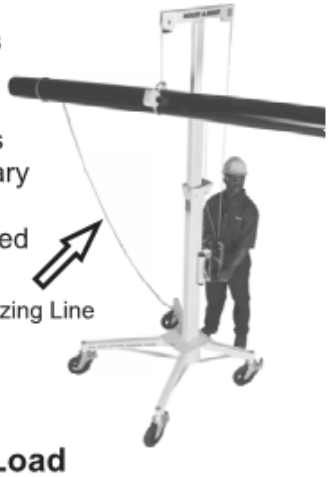
2. While holding up Free Fall Lever, pull cable from lower spool of winch, as shown, until the cable is long enough to securely attach to the load.



Note: Secure load line using approved rigging practices and equipment only.

WARNING
Always lift load slightly to check rigging and balance before elevating.

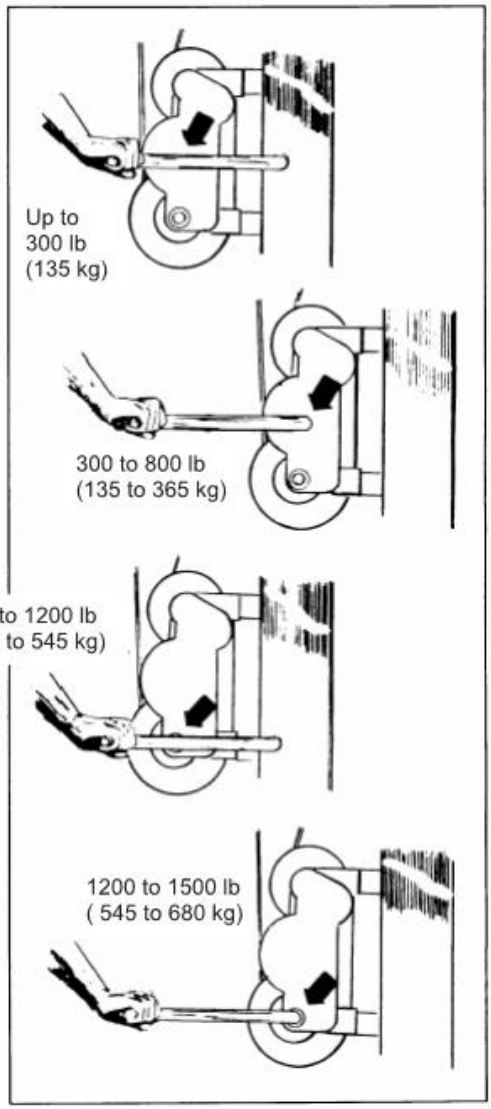
Note: Stabilizing lines should be used to control any long or awkward load. Use as many lines as necessary to maintain complete control of the suspended object.



5. Elevating Load

1. Select the proper shaft and winch handle socket for lifting in accordance with the weight chart below.
2. Raise the load by turning the winch handle in a clockwise direction.

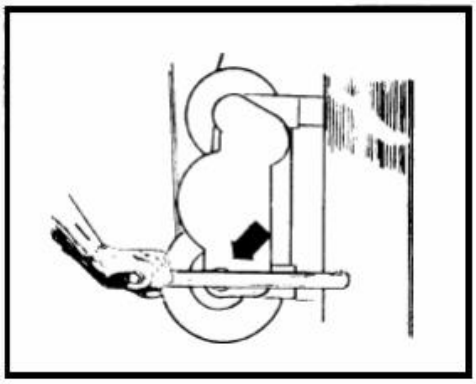
WARNING
Never allow anyone under an elevated load.



6. Lowering Load

WARNING
Never lower load using free fall lever. Keep lever engaged at all times under loaded conditions.

1. Load can only be lowered by using the lower shaft on the right side of the winch.



2. Insert either socket on winch handle onto lower shaft and turn handle counterclockwise to lower load.

7. Lowering Mast

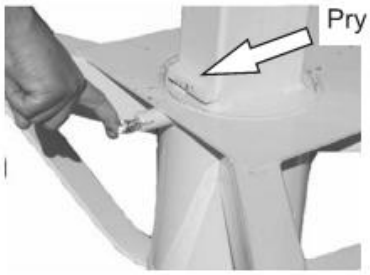
Note: Mast should be lowered with no load whenever possible, and should never be lowered with a load exceeding 500 lb (225 kg) attached.

1. Install winch handle onto lower shaft on left side of winch.
2. Lower mast buy turning handle in a clockwise direction.

8. Removing Mast

Note: Caster brakes should always be locked when removing mast.

1. Release base latch by pulling ring and turning. Make sure ring is not engaged in housing slot.



2. Place crowbar under pry tab and raise mast from base until the locating ring rests on top of the base.
3. Remove mast from the base.

9. Caster Brakes

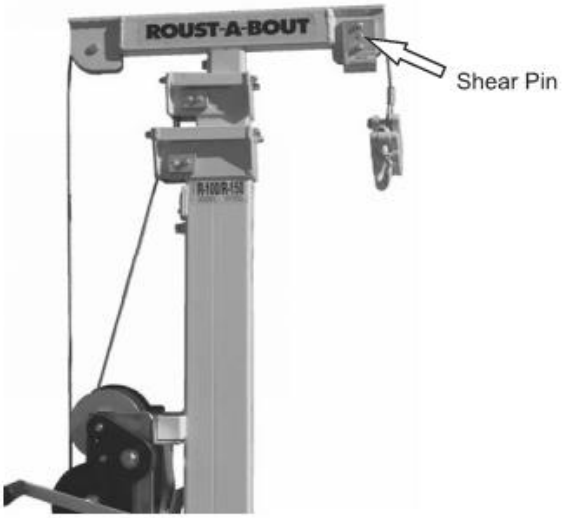
1. Set brake by pressing down on brake lever as shown.
2. Release brake by lifting up on brake lever.

10. Handle Storage

When not in use, the Roust-A-Bout handles should be kept in the storage location.

1. To store handles, align the sockets with the holes in the storage plate.
2. Slide handle in until it contacts the spring loaded pin.
3. Press in spring loaded pin and continue to slide in handle.
4. Reverse steps 1 thru 3 to remove.

11. Shear Pin



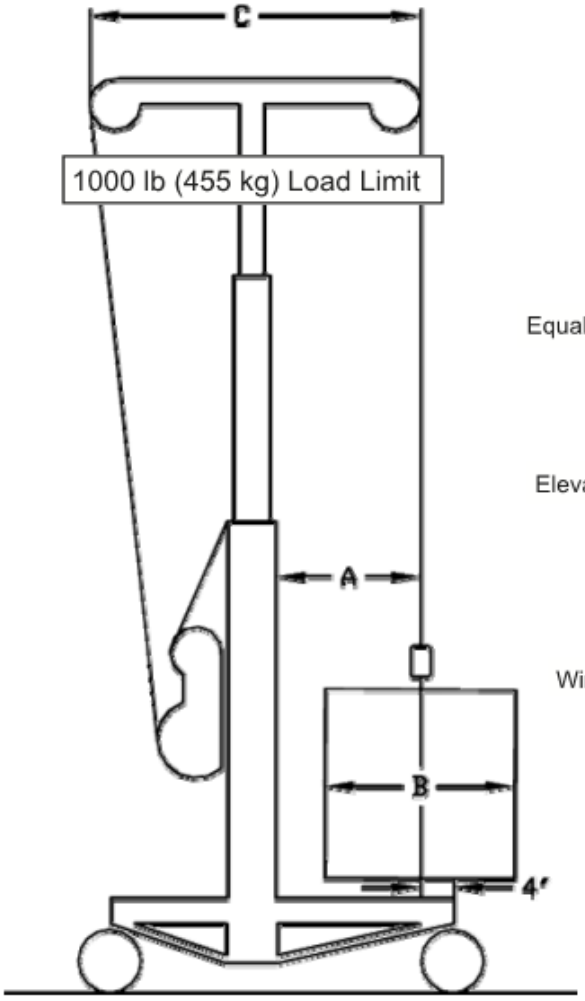
Note: All R-Series Roust-A-Bouts contain a safety device known as a Shear Pin. This pin is located on the front sheave of the "Tee Head". The purpose of the pin is to protect the lift in the event of an overload. A spare Shear Pin is located underneath the Winch Assembly.

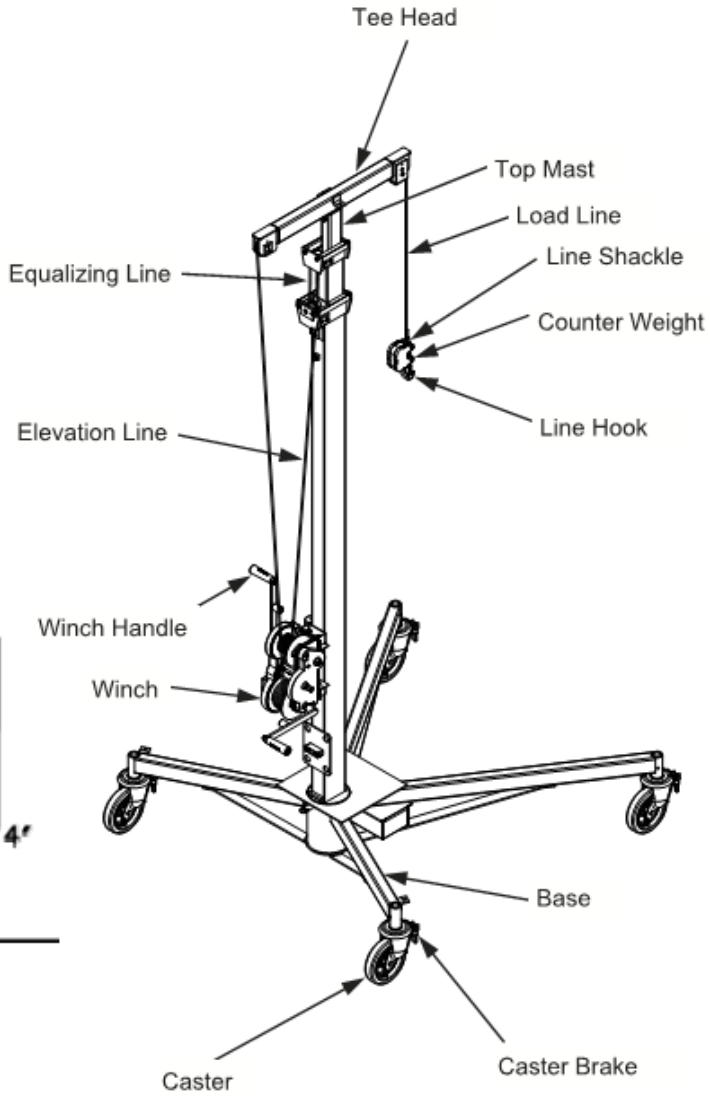
12. Options

Tee Head Extension Bar

Note: Allows handling of bulky loads. Advise Model No. when ordering.

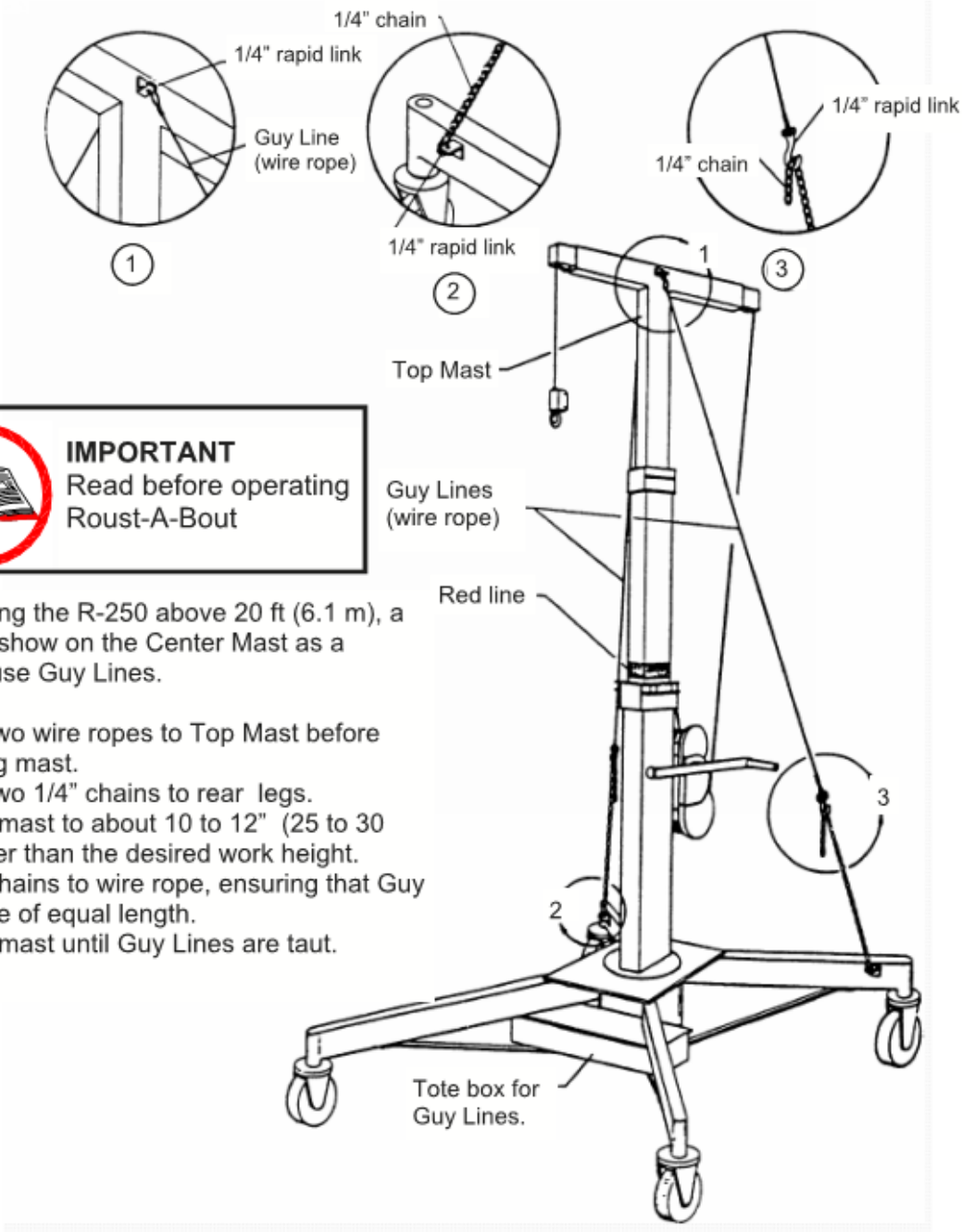
WARNING
Load center is only 4" (10 cm) behind centerline of front casters. This lessens the stability of the lift and should only be used when handling bulky loads.





Model	A	B	C
R-100	22" (55 cm)	43" (108 cm)	48" (120 cm)
R-150	22" (55 cm)	43" (108 cm)	48" (120 cm)
R-180	29" (73 cm)	58" (145 cm)	63" (158 cm)
R-250	37" (93 cm)	73" (183 cm)	78" (195 cm)

13. Guy Lines



IMPORTANT
Read before operating Roust-A-Bout

When working the R-250 above 20 ft (6.1 m), a red line will show on the Center Mast as a warning to use Guy Lines.

1. Attach two wire ropes to Top Mast before elevating mast.
2. Attach two 1/4" chains to rear legs.
3. Elevate mast to about 10 to 12" (25 to 30 cm) lower than the desired work height.
4. Attach chains to wire rope, ensuring that Guy Lines are of equal length.
5. Elevate mast until Guy Lines are taut.

MAINTENANCE INSTRUCTIONS

Before each use:

1. Inspect the cable for kinks and frays. If kinked or more than 3 wire strands are broken (small wires) do not use the lift until the cable has been replaced.
2. Make certain winch operates freely and cable is not tangled on the winch drum.
3. Inspect masts, legs, and base for bends.
4. Make sure caster wheels move freely.

Recommended Inspection Every 6 Months:

1. Inspect cable for frays and kinks (see point 1 above)
2. Make certain winch works freely and that there are no loose or damaged parts.

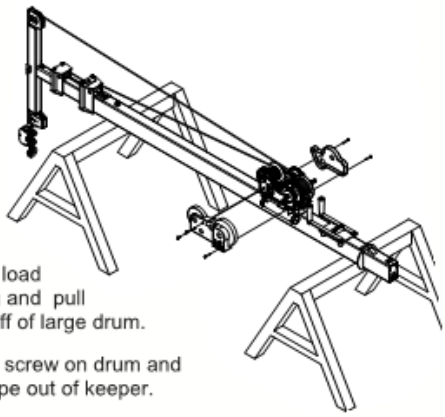
Winch Maintenance:

1. Refer to the winch assembly drawings in this Operators Manual.
2. Be sure that both winch covers are on the winch.
3. Check ratchet dog and brake ratchet for wear. If any wear is visible, replace the part.
4. Inspect gear teeth for wear. If there is no sign of visible wear, brush teeth with 50-wt. Motor oil.
5. For proper brake adjustment see "Troubleshooting" section on page 12.

Replacing the Cables:

A. Load Lifting Line

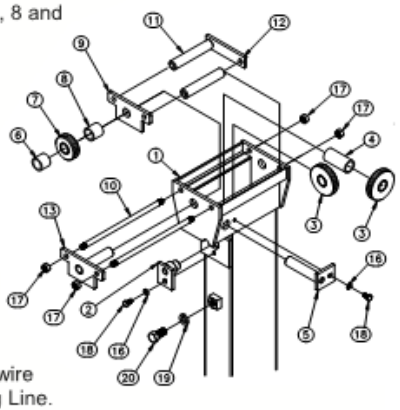
1. Lay Roust-A-Bout across supports with the winch facing up.



2. Remove both gear covers.
3. Disengage load ratchet dog and pull wire rope off of large drum.
4. Loosen set screw on drum and pull wire rope out of keeper.
5. Pull Load Line out through front of Tee head.
6. Reverse for installing new Load Line.

B. Mast Elevating Line

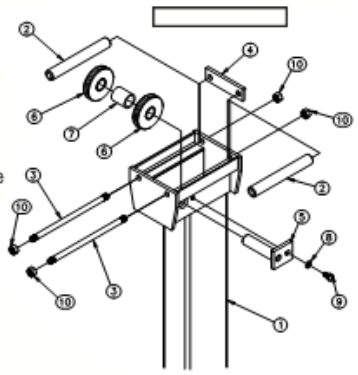
1. Lay Roust-A-Bout across supports with the winch facing up.
2. Remove both gear covers
3. Remove in sequence item numbers 17, 10, 11 and 12.
4. Remove in sequence item numbers 13, 6, 7, 8 and 9.
5. Remove in sequence item numbers 18, 16, 5, 3 and 4.
6. Remove in sequence item numbers 18, 16, 2 and 3.
7. Remove Center Mast.
8. Remove keeper wire and old Elevating Line. Note direction of reeve.



9. Reverse steps 1 thru 8 to install new line.

C. Equalizing Line

1. Remove in sequence item numbers 10, 3, 2 and 4.
2. Remove in sequence item numbers 8, 9, 5, 6 and 7.
3. Remove Top Mast.
4. Remove keeper wire and old Equalizing Line. Note direction of reeve.
5. Reverse steps 1 thru 8 to install new line.



General Maintenance:

1. Check both winch handles for wear or bends.
2. Examine all bolts and nuts to be sure they are tight.
3. Legs, braces and base should be dent free and damage free.
4. Check pulley housings for damage (indentations) which can restrict the rotation of the pulleys.
5. Make sure all lines are seated in all pulleys and that pulleys rotate without obstruction.
6. Check all rollers for free rotation.
7. Raise mast sections to inspect for free, smooth sliding action. Make sure wire slide ways are free of dust and oxidation and spray a light coat of silicone lubrication in slide ways.
8. Make sure caster wheels rotate freely and are undamaged.

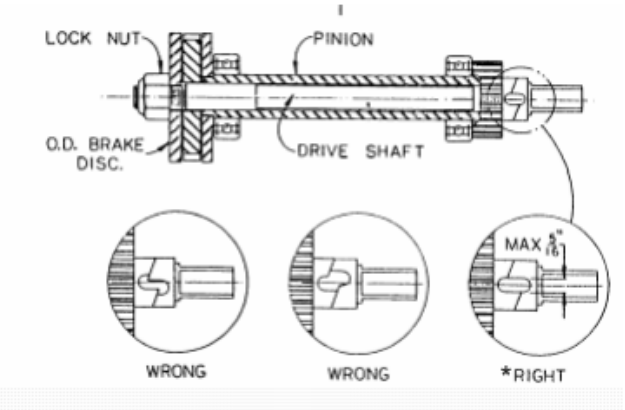
WARNING
Modifying the Roust-A-Bout in any way can cause injury or death!

WARNING
Replace all worn or damage parts only with Sumner parts.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Masts not rising	Trying to lift more than 500 lb (225 kg) by elevating the masts.	Remove load, elevate the masts to the desired height, raise load.
	Mast rollers not rotating. Inspect for debris or any foreign obstruction	Clean roller shafts with a degreaser or brake cleaner and lubricate with a silicon lubricant
	Cable pulley wheel not rotating	If there is any damage to the pulley wheel, or if the wheel doesn't rotate smoothly, change wheel.
	Inspect cable for damage	If cable is kinked, worn or frayed, replace cable
	Inspect mast sections for damage	Replace damaged mast section
If none of these solutions seem to fix the problem...		Call distributor's Customer Service Department

PROBLEM	CAUSE	SOLUTION
Roust-A-Bout not holding the load.	Winch Brakes need adjusting.	See below
	Brake pads are worn.	Replace Brake pads.
	Ratchet Dog or Brake Ratchet are worn.	Replace the Ratchet Dog and/or Brake Ratchet
	Ratchet Spring is broken or worn.	Replace the Brake Ratchet Spring.



Important

The information below applies to both Load Drum and Hoist Drum Drive Shafts.

For proper adjustment on the CS2000 winch, the pinion and drive shaft must be in position shown when lock nut is tightened against O.D. Brake Disc. The lock nut should be torqued to 15 ft lb.

*Correct alignment is only visible when load is applied to lift.

HAZARDS	RANK	CONTROLS
Eye Injury	2	Wear safety glasses
Head Injury	2	Hard Hat
Hand Injury	2	Gloves

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.39 SJP202: THREADING MACHINE

BEFORE BEGINNING

Do not wear gloves or loose clothing when operating the threading machine. Keep sleeves and jackets buttoned. Do not reach across the machine or pipe. Do not use this threading machine if the foot switch is broken or missing. Always wear eye protection to protect eyes from dirt and other foreign objects. Keep hands away from the rotating pipe and fittings. Stop the machine before wiping pipe threads or screwing on fittings. Allow the machine to come to a complete stop before touching the pipe or machine chucks. Ensure that the threading machine is set up on a spill containment tray.
Do not use this machine to "put on" or "break off" fittings. This practice is not an intended use of this threading machine.

Installing Pipe in Threading Machine:

1. Check to ensure the cutter, Reamer and the head are swung to UP position.

2. Mark the pipe at the desired length if it is being cut to length.

3. Insert the pipe into the threading machine so that the end to be worked or the cutting mark is located about 12 inches to the front of the speed chuck jaws.

4. Insert work pieces less than 2 feet long from the front of the machine. Insert longer pipes through either end so that the longer section extends out beyond the rear of the threading machine.

Warning: to avoid equipment tip-overs, position the pipe supports under the work piece.
Note! For plastic and coated work pieces, special jaw inserts (No. 97365) should be used to prevent damaging the work piece.

5. Tighten the rear centering device around the pipe by using a counter clockwise rotation of the hand wheel at the rear of the threading machine. This prevents movement of the pipe that can result in poor thread quality.

6. Secure the pipe by using repeated and forceful counter clockwise spins of the speed chuck and wheel at the front of the threading machine. This action "hammers" the jaws tightly around the pipe.

CUTTING PIPE WITH No. 820 CUTTER

1. Swing Reamer and die head to UP position.
2. Move pipe cutter down onto pipe and move carriage with hand wheel to line up cutter wheel with mark on pipe.

NOTE: If using a length gauge on machine carriage, place cutter wheel against end of stock and set point to zero. Raise cutter to clear stock and turn carriage hand wheel until pointer is at length desired.

3. Tighten cutter feed screw handle on pipe keeping wheel aligned with the pipe. (Figure 6)

Figure 6 – Cutting Pipe with 820 Cutter

4. Assume the correct operating posture.

5. Flip the directional switch to FOR (Forward).

6. Grasp the pipe cutters feed screw handle with both hands.

7. Depress and hold down the foot switch with the left foot.

8. Tighten the feed screw handle slowly and continuously until the pipe is cut. Do not force the cutter into the work piece.

9. Release the foot switch and remove your foot from the housing.

10. Swing pipe cutter back to the UP position.

REAMING PIPE WITH THE No. 341 REAMER

1. Move reamer arm into DOWN position.

2. Extend reamer by pressing latch and sliding knob toward pipe until latch engages bar.

3. Check the directional switch to ensure it is in the FOR (Foreword) position. Then press and hold the foot switch down with the left foot.

4. Position reamer into pipe and complete reaming by exerting pressure on the hand wheel.

5. Retract reamer bar and return reamer to UP position.

6. Release foot switch and remove your foot from the housing.

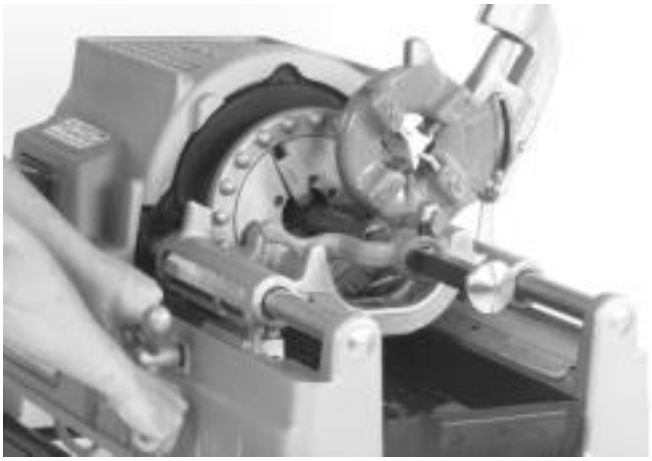


Figure 7 – Reaming with 341 Reamer

THREADING PIPE OR ROD WITH QUICK OPENING, SELF OPENING OR SEMI AUTOMATIC DIE HEAD

1. Install die set. Refer to die installation procedure. (See Rigid Operator's Manual)

2. Swing cutter and reamer to UP position.

3. Swing die head to DOWN position with throw out lever set to CLOSE position.

4. Check directional switch to ensure it is in the FOR (Foreword) position. Depress and hold the foot switch down with your foot.

NOTE: Current 535 Machines have an automatic oiling system that brings oil to the work through the die head. Machines made prior to June 1, 1996 have an oil spout which must be swung to the DOWN position to flood dies with oil.

5. Turn carriage hand wheel to bring dies against end of the pipe. Slight pressure on hand wheel will start dies. (Figure 8).

6. **Quick-Opening 811A Die Head (Figure 9)** - When thread is completed, rotate throw out lever to OPEN position, retracting dies.

   Self-Opening 815A Die Head (Figure 10)-when die head trigger contacts end of pipe, throw out lever is automatically opened.

   Semi-Automatic Die Head (Figure 11) - when the end of the pipe being threaded is flush with the end of the number one die, tap the handle for the dies to release the pipe.

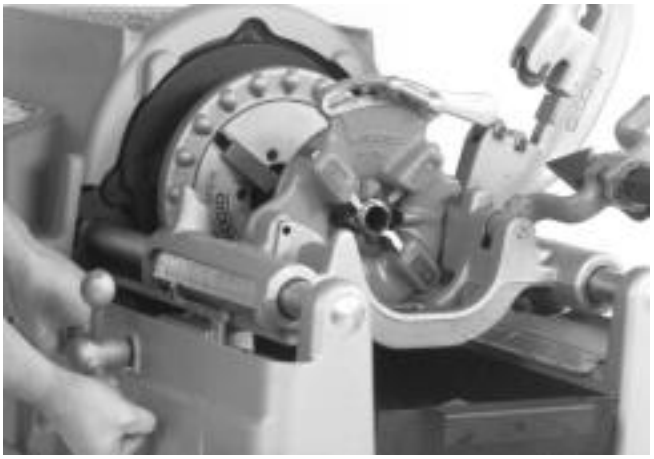


Figure 8 – Threading with 535 Manual Threading Machine

7. Turn carriage hand wheel to back die head off pipe.

8. Release the foot switch and remove your foot from the housing.

9. Swing die head back to UP position.

HAZARDS	RANK	CONTROLS
Eye Injury	2	Wear safety glasses
Cuts to Hands/Body	2	Gloves. Caution handlings tools/pipe
Crush Injury	2	Cautious hand placement. Situational awareness
Environmental Contamination	2	Cautious use, disposal and storage of cutting oils

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual
The procedures in this Safe Job Procedure are taken from the Rigid 535 Operator's Manual.

4.40 SJP203: ARC WELDER

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Welding Helmet, Safety Glasses, Welding Jacket or Sleeves and Gloves (Leather - Best Choice) Flame retardant coveralls, CSA approved steel toe boots, hearing protection

NOTE: There are several different types of arc welders located in the shop each have their own uses. These machines consist basically of Mig, Tig and stick welders. Before using these pieces of equipment you must first be trained and have permission from the shop supervisor

PROCEDURE

1. Inspect the work area. Be aware of your surroundings to prevent injury.

2. Put on your safety gear and prepare the area to be welded in. Remove all flammable material and put the ground connection either right on the piece you are welding or at the metal workbench. Turn on the ventilation system.

3. Set up the welder and your material; check welders amperage ,welding wire & welding gun and/ or electrode; clean the metal by brushing the surface with a wire wheel or a grinder before welding to make sure its dry and clean of dirt or other foreign matter.

4. Flip the helmet down and strike the arc where you want to start welding build up a weld pool and start moving the weld pool across the metal. Use the chipping hammer to break the slag off the weld, the wire brush to clean the weld and examine the welded area. Allow the metal to cool.

5. When done. Remove the ground, turn off the machine & ventilation system and clean up the work area.

Welding machines can be dangerous. Read all warnings and take every measure to ensure the safety of you and those around you. Do not weld near something that can catch fire. Do not look at the arc without proper dark lens designed for welding. Adequate ventilation should be provided to remove fumes which are produced by this welding process. A fire extinguisher must be on standby.

HAZARDS	RANK	CONTROLS
Burn/Sparks	2	Wear required PPE (long sleeves, pants, welders apron, welding gloves) and properly cordon off work area.
Fire	3	Clear flammables from the area. Have a fire extinguisher ready
Respiratory Ailments	2	Adequate ventilation system and/or use a respirator
Eye Injury	2	Wear welding helmet and safety glasses

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.41 SJP204: GAS POWERED ARC WELDER

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Welding helmet, safety glasses, welding jacket or sleeves and gloves (Leather - Best Choice) flame retardant coveralls, CSA approved steel toe boots, hearing protection.

NOTE: Gas powered arc welders should be treated as a vehicle and not operated indoors due to exhaust fumes.

PROCEDURE

1. Worker must be trained in use of welding machine.
2. Perform a walk around inspection before starting equipment.
3. Check all fluid levels.
4. Do not fuel the machine while running or hot, someone other than the welder or fitter must do this to prevent clothing fires do to fuel spills.
5. String out the welding cables and hook up the ground, then start the machine, set the required amperage, and start welding.
6. When welding is complete shut off machine and roll up cables.

Welding machines can be dangerous. Read all warnings and take every measure to ensure the safety of you and those around you. Do not weld near something that can catch fire. Do not look at the arc without proper dark lens designed for welding. Adequate ventilation should be provided to remove fumes which are produced by this welding process. A fire extinguisher must be on standby.

HAZARDS	RANK	CONTROLS
Burn/Sparks	2	Wear required PPE (long sleeves, pants, welders apron, welding gloves) and properly cordon off work area.
Fire	3	Clear flammables from the area. Have a fire extinguisher ready
Respiratory Ailments	2	Adequate ventilation system and/or use a respirator
Eye Injury	2	Wear welding helmet and safety glasses

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.42 SJP205: HOT TAP TOOL

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Gloves, CSA approved steel toe boots

NOTE: Cutting into pipe containing liquids or gases under pressure is potentially hazardous. Correct procedures must be followed in the use of this equipment to maintain a safe working environment and prevent serious personal injury.

PROCEDURE

1. Determine exactly which pipe needs to be tapped into. Follow the pipe as far as possible to ensure that it is indeed the pipe as far as possible to ensure that it is indeed the pipe that requires tapping and record the media (what is in the pipe) and the pressure on a copy of the worksheet at the back of the manual.

2. Determine exactly where the pipe needs to be tapped. Consider not only the best route for the new line but also the effect that any chips from the tapping operation could have on downstream equipment. Consider the orientation of the tap, tapping the top of the pipe may drop chips into the tapped pipe whereas tapping the bottom of the pipe will tend to drop the chips back into the tool. Use of the bleed valve assembly will tend to wash away most of the chips if open during the entire drilling operation.

3. Determine whether a service saddle or a thread-o-let or a weld-o-let will be used to mount the valve to the main. The o-lets must be welded squarely in the center of the pipe. The media in the pipe must be considered also as chilled lines will effect weld penetration and may cause leaks and high temp lines may allow the weld to blow through causing severe injury to the welder

4. Select the full port valve required for the job and check if the cutter will pass through freely.

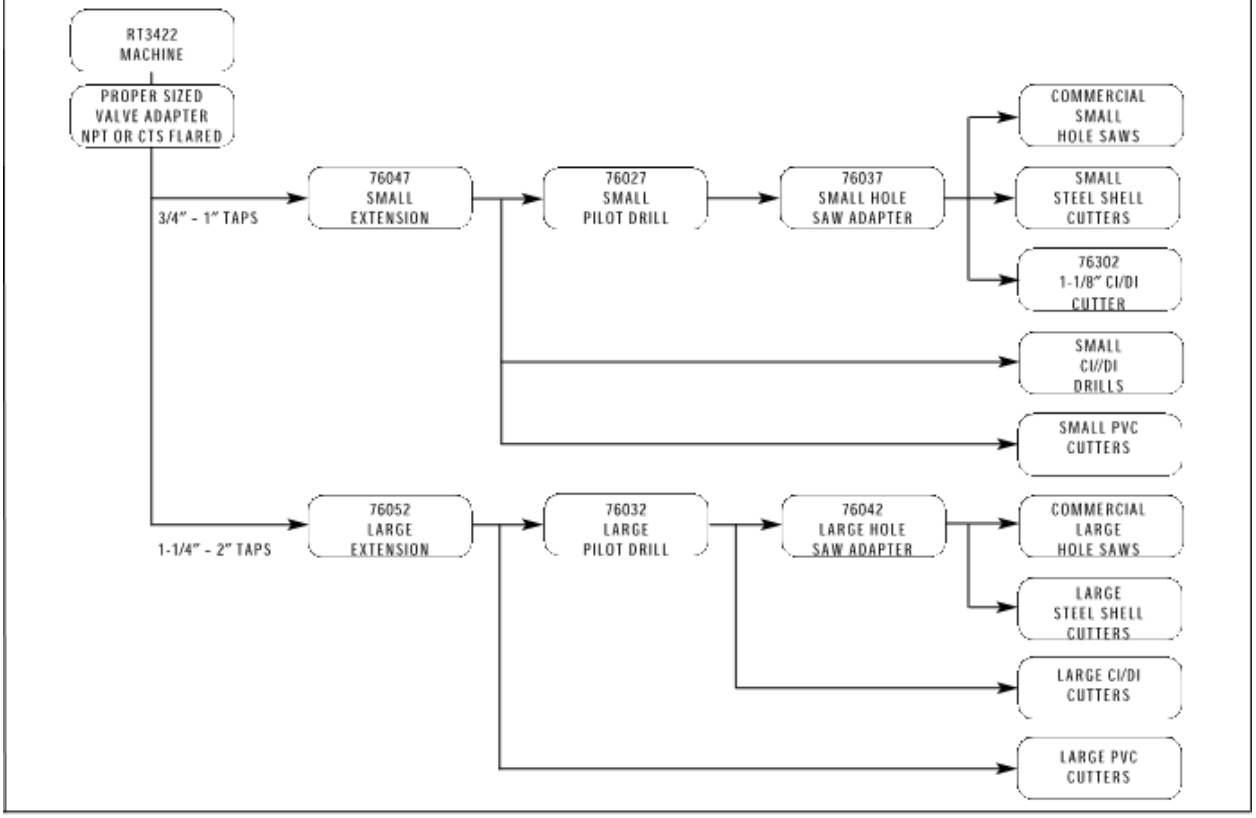
5. Assemble the tool for use and determine the feasibility of the tapping operation. This is to confirm whether the planned configuration will allow enough stroke to complete the tap or if the configuration could allow the over-penetration of the far side of the pipe.

6. The flow chart will assist the operator in determining the required equipment to perform the tap.

Valve Adapter Selection

Valve Size	Bore Size	CTS Adapter	NPT Female Adapter	NPT Male Adapter	BSPT Female Adapter	BSPT Male Adapter	Pilot Size	Extension	Saw Adapter	Remarks
3/4"	0.625	76057	76087	76132	76177	76222	0.250	76047	76037	Preferred Configuration
	0.688									
1"	0.750	76067	76092	76137	76182	76227	0.250	76047	76037	
	0.813									
	0.875									Preferred Configuration
	0.938									
1-1/4"	1.000	76072	76097	76142	76187	76232	0.250	76047	76037	
	1.063									
	1.125									Preferred Configuration
	1.188									
1-1/2"	1.250	76077	76102	76147	76192	76237	0.375	76052	—	Special Saw Adapter
	1.313									Special Saw Adapter
	1.375								76042	Preferred Configuration
	1.438									
2"	1.500	76082	76107	76152	76197	76242	0.375	76052	76042	
	1.563									
	1.625									
	1.688									
	1.750									Preferred Configuration
	1.813									
	1.875									

Tapping Tool Assembly Flow Chart



7. Having ensured that the tool is in the shortest, collapsed, position and having selected the proper size extension, hold the spindle by the flats at the end and screw the extension into the end of the spindle. This only has to be hand tight as the threads will be tightened by the operation of the tool (Figure 1).

Figure 1 – Installation of extension

8. Inspect the "o-ring" seal in the valve adapter (replace if damaged) and holding the bronze feed screw by the flats, assemble the valve adapter onto the bronze feed screw. This should be done by hand as the operator will feel first the seal engaging and then feel the adapter reach an abrupt stop as the bronze feed screw "bottoms out" in the valve adapter (Figure 2).

Figure 2 – Installation of valve adapter

9. Select the cutter to be used for this particular operation from the chart on the next page. Note that the pilot drill and hole saw adapter may not be required depending on the actual cutter selected. If the selected cutter requires a hole saw adapter, screw it into the end of the extension. CI/DI and PVC cutters do not require use of hole saw arbor. As before, this only has to be hand tight (Figures 3 and 3a).

Figure 3 – Installation of small hole saw adapter

Figure 3a – Installation of large hole saw adapter

10. Inspect the selected cutter to be used for this particular operation to ensure that it is in good working order and screw it into the hole saw arbor If present or directly into the extension as required. As before, this only has to be hand tight (Figures 4 and 4a).

Figure 4 – Installation of cutter on small hole saw arbor

Figure 4a – Installation of cutter on large hole saw arbor

11. Inspect the selected pilot drill for this particular operation to ensure that it is in good working order. Pay particular attention to the coupon retaining device as coupon may not be retrieved if this device is damaged. Insert this pilot drill into the hole saw adapter if present or directly into the cutter as required. Secure the pilot drill in place with the set screw positioned on the flat of the pilot and firmly tighten. (Figure 5)

12. Inspect the selected pilot drill for this particular operation to ensure that it is in good working order. Pay particular attention to the coupon retaining device as coupon may not be retrieved if this device is damaged. Insert this pilot drill into the hole saw adapter if present or directly into the cutter as required. Secure the pilot drill in place with the set screw positioned on the flat of the pilot and firmly tighten. (Figure 5)

Figure 5 – Installation of pilot drill

13. Measure the distance from a point such as the wrench flats on the feed screw to the end of the sleeve. In Figure 6 below it is 1”.

14. Unscrew the sleeve back up the bronze feed screw. (i.e. Looking along the length of the tool from cap end towards the drill end, the sleeve turns counter-clockwise to extend the tool). Turn the sleeve all the way until it stops. Again measure the distance from a point such as the wrench flats on the feed screw to the end of the sleeve. In Figure 7 it is 15”. Subtract the distance from the previous step

(h) from this distance. The result is 14" full stroke. Note that the stroke distance may be affected by various valve adapter / cutter combinations.

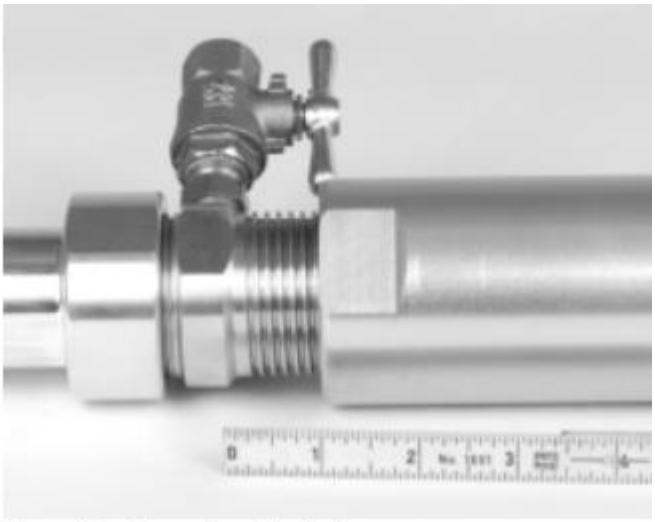


Figure 6 – Measuring 1" offset

Figure 7 – Measuring full stoke distance

15. Attach the selected service saddle to the main in accordance with the manufacturer's specifications, or weld the selected Thread-o-let or Weld-o-let to the main in accordance with all applicable welding standards.

16. Apply pipe sealant to the threads on the "corporation stop" or valve and tightly thread it into the saddle or Thread-O-Let™ to assure a leak proof assembly. Ensure that the valve is in the CLOSED position.

17. Measure the distance from the surface of the pipe to the outlet end of the valve as shown in Figure 8 & 9. This is the minimum amount of stroke required before the cutter makes contact with the pipe to be drilled into. (In the illustrated example this is 4 ½".) If this distance is within 1 inch of the stroke distance from step 13 then the machine may not have enough travel to safely complete the tap and this operation must be aborted and reconfigured for a different valve and/or saddle.

Figure 8 – Measuring valve standoff distance

18. Measure the distance from the far surface of the pipe to the outlet end of the valve as shown in Figure 10. This is the maximum amount of stroke required before breaking through the far side of the pipe to be drilled into. (In the illustrated example this is 10 ½".) If this distance is less than the stroke distance from step 13 then the machine has enough travel to penetrate the far side of the pipe. This is true in the illustrated case. Therefore, this operation must be carefully executed to avoid problems.

Figure 10 – Measuring maximum stroke

19. Calculate the ideal distance to penetrate in order to stop at the centerline of the pipe. Add the valve standoff distance from step 16 to the maximum stroke from step 17 and divide the result by 2. (In the example illustrated this is 10½" plus 4½" which gives 15", then divided by 2 yields 7 ½" ideal penetration.

20. Subtract the ideal penetration distance from the full stroke in Step 13. (In the example illustrated this is 14" total stroke minus 7 ½" required stroke which equals 6 ½" remaining unusable stroke.)

21. If the bleed valve assembly is not going to be used, ensure that the bleed-off valve is closed or a ⅜" plug is installed. Use pipe sealant to seal the threads on the bleed valve and plug.

22. Attach the fully assembled and fully extended tapping tool to the outlet thread of the valve by screwing on the valve adapter (Figure 11). Pipe sealant is required for NPT and BSPT valve adapters in the temporary assembly between the valve and the valve adapter and it should be firmly tightened so as not to leak. The connection of the valve adapter to the valve when using CTS (Copper Tube Size – flared or compression) adapters does not require pipe sealant but must have the appropriate gasket in place and be in good working condition.

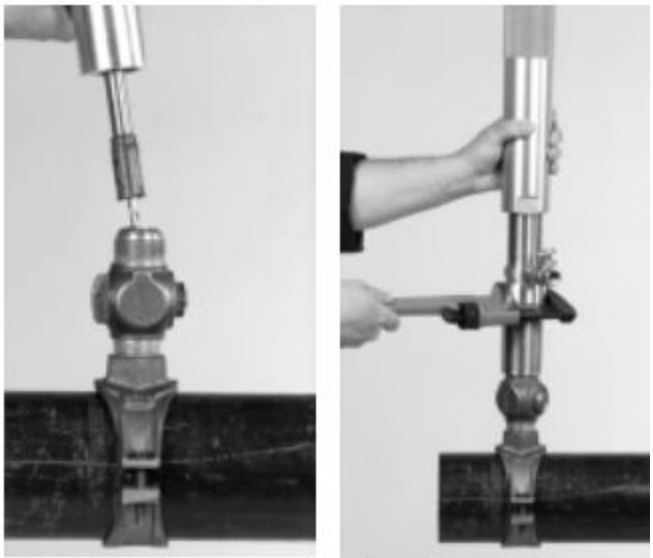


Figure 11 – Attaching tool to valve

23. If the bleed off valve is to be used, a hose may be connected to it to help direct the discharge. Remember to restrain the free end of the hose to control the direction of the discharge. Note that this discharge is the same as the media in the pipe.

NOTE: Be sure no one is standing in line of the discharge from the bleed valve in the event of accidental opening of the valve. Pressures may be very high and can result in serious injury.

24. Turn the sleeve clockwise until the cutter comes into light contact with the main, and back the

sleeve up one turn. Using the ratchet wrench, or a power tool, rotate the drive shaft at the 11/16" hex while continually applying pressure by turning the sleeve. Do not apply too much pressure on the cutter and pipe with the feed screw. Gentle light pressure applied with the feed will produce superior cutting characteristics (Figure 12).

Note: Excessive feeding of the cutter may result in high torque feedback to the operator and could wrench or injure arm.

Continue to drill through the main until no resistance is felt when advancing the feed. Stop immediately if only the "remaining unusable stroke" remains to be used. Continuing past this point could cause penetration through the far side of the pipe.

Note: DO NOT tap through the bottom of the pipe.

Figure 12 – Pivot of hand on ratchet and other hand on tool

The drilling into the pipe is now complete. The valve and saddle as well as the tool are now filled with the media in the pipe. Turn the sleeve counter-clockwise until all the threads of the bronze feed screw are exposed and the sleeve comes to a halt. This action has fully retracted the cutter and the coupon. Close the corporation stop or valve. Should it be difficult to close the valve (due to chips from the drilling operation), attach a hose to the bleed valve assembly if it is not already there and open the bleed valve to "wash" away as many chips possible. Then rock the valve open and closed until it can be completely shut-off. It is vital that the valve is closed before proceeding. If the bleed valve assembly is in use it may be closed as well and the hose removed. Note that this hose will contain residue of the same media that is in the pipe.

25. Remove the ratchet or power tool from the hex on the drive shaft. Place a wrench on the valve to prevent it from disconnecting as the valve adapter is unscrewed from the valve with another wrench. Be prepared for the tool to suddenly come free and for it to spill out any media it contains. If the drilled pipe was dry, be aware that the cutter may be hot.

26. The new plumbing may now be attached to the outlet end of the valve. After that, all that is required is to open the valve to activate the newly installed system.

27. To remove the coupon from the cutter, turn the sleeve clock-wise until the cutter is exposed. Shell cutters have a hole or slot to allow the coupon to be pushed out. Remove the cutter if required,

in order to make coupon removal easier. If using a coupon retaining pilot bit, squeeze the spring retainer to allow the coupon to slide off. After completing all taps of this configuration, continue to step 10. If more taps are needed, reinstall the cutter and start again from step 1.

28. Remove the valve adapter, drill or cutter, pilot drill (if used), saw adapter (if used) and extension from the tool. Turn the sleeve clockwise until all the threads of the bronze feed screw are hidden and the tool is fully collapsed. Simply wipe all the components until clean and dry and store them in the toolbox.

No person should use this tool who is not fully trained in the proper operating procedure and who is not fully aware of the potential hazards connected with work on pipe containing liquids or gases under pressure.

HAZARDS	RANK	CONTROLS
Eye Injury	2	Safety glasses/goggles
Explosion	3	Do not exceed pressure and temp rating of the tool and any attachment, valve or fitting. Only tap into lines that contain specified media.

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.43 SJP206: CHAIN FALLS

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Gloves, CSA approved steel toe boots

NOTE: Chain hoists are useful because the load can be stopped and kept stationary at any point. Because of their slow rate of travel, chain hoists also allow precise vertical placement of the load

PROCEDURE

1. Inspect hoist for wear, damage, and sufficient capacity before each use

2. Secure the chain fall to a building support member or concrete anchor of sufficient strength to support the load to be lifted.

3. Position the load under the chain fall.

4. Secure the load to the chain fall with lifting straps or chains.

5. Ensure that all personnel are clear of the work lifting area. If the area is subject to traffic or other trades flagging tape must be setup to keep unauthorized personnel out of the lifting area. At no time can anyone be allowed to stand under a suspended load.

6. Pull on the hoisting chain to begin raising the load. Raise the load 6 inches above the ground and check that the center of gravity is correct and the load is secure.

7. Continue raising the load to the desired height and secure into place.

8. Once the load is secured into its final position operate the hoisting chains in the reverse direction to create slack in the lifting chain. Verify that the load is fully secure in its final position.

9. The lifting straps or chains can now be removed from the load.

10. Remove the chain fall from the anchor point and store it properly.

Before using the hoist, inspect the chain for nicks, gouges, twists and wear. Check the chain guide for wear. Hooks should be measured for signs of opening up. Ensure that the hooks swivel freely and are equipped with safety catches. If the hoist has been subjected to shock loads or dropped, it should be inspected thoroughly before being put back into service. Check the load break by raising the load a couple of inches off the ground and watch for creep.

HAZARDS	RANK	CONTROLS
Crushing	3	Proper rigging
Hand Injury	2	Wear gloves. Awareness of surroundings
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.44 SJP207: ELECTRIC PALLET JACK

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Gloves, CSA approved steel toe boots

NOTE: Do not operate an electric pallet jack unless you have been trained and authorized by your company. Follow all warnings and instructions in the owner's manual and the data plate

PROCEDURE

Before operating this piece of equipment a pre-use inspection form must be completed.

TRAVEL

1. Make sure the battery is plugged into the truck and the Master Control ON/OFF Switch is ON.
2. Enter your key code on the keypad and press the green button marked I, or turn the optional key switch to ON (|).
3. Pull the directional/speed control handle down into the drive mode.
4. Rotate the thumb controls in the direction you want to travel.
5. When driving forks-first, keep both hands on the control handle.
6. When driving tractor-first, walk to the side and ahead of the lift truck. Keep only one hand on the control handle.
7. If the lift truck does not move when you rotate the thumb controls, raise the control handle all the way up. Bring the control handle back to a comfortable position, then rotate the thumb controls.

STOPPING

1. Rotate the thumb controls on the control handle through neutral in the opposite direction the lift truck is moving.
2. When the lift truck speed slows and stops, release the thumb control.

SLOWING DOWN

1. Rotate the thumb controls on the control handle through neutral in the opposite direction the lift truck is moving.
2. When the lift truck speed slows, rotate the thumb controls back towards the direction you are moving and hold to maintain the speed.

CHANGING DIRECTION

1. Move the thumb controls on the control handle through neutral in the opposite direction the lift truck is moving.
2. The lift truck slows, stops, and starts moving in the opposite direction.

PARKING

1. Stop the lift truck.
2. Lower the forks to the lowest level.
3. Release the control handle.
4. Press the O position button on the keypad or turn the optional key switch to OFF (O).
5. Remove the key from the key switch, if equipped (optional).
6. Disconnect the battery.

ENTERING A PALLET

1. Approach the pallet from either side with the nearest fork about 3 in. (76 mm) out in the aisle.
2. When the fork is just forward of the pallet edge, stop.
3. Turn the control handle to swing the front of the lift truck out into aisle until the forks begin to enter the pallet at an angle.
4. Continue maneuvering the lift truck, gradually returning the control handle straight ahead until the lift truck faces the pallet squarely.
5. Drive the lift truck forks-first until the pallet is completely on the forks. Make sure that the load wheels are not resting on any of the boards on the bottom of the pallet.
6. Change direction and carefully swing the lift truck out into the aisle.

SAFETY FEATURES OF ELECTRIC PALLET JACKS

The reversing switch located on the T-bar protects the operator from being pinned between the truck and immovable objects. When the switch is pushed, it will direct the movement of the truck away from the operator. The automatic brake will stop the vehicle when the handle is moved to a complete vertical or horizontal position.

HAZARDS	RANK	CONTROLS
Crushing	2	Awareness of surroundings. Ensure all body parts are clear before lowering

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.45 SJP208: BEAM CLAMPS

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Gloves, CSA approved steel toe boots.

NOTE: Improper use and care of lifting clamps may result in loss of load and personal injury.

PROCEDURE
Inspect the beam clamp and verify that; it is in good operating condition, is correctly rated for the load to be placed on it, and sized correctly for the beam it is to be attached to.

1. Inspect the beam that the clamp will be applied to and ensure that it is fee from damage and that it is rated for the load that will be place on it.

2. Open the beam clamp so it will just fit over the lip of the beam.

3. Position one hook of the clamp on one lip of the beam and tighten the clamp until both hooks are firmly holding both lips of the beam.

4. Attach the load or lifting device to the clamp.

5. To remove the clamp reverse the steps above.

Beam clamps are generally intended for attachment to overhead beams to act as suspension points for lifting appliances. Some designs are suitable for attachment to the load to provide a lifting point. The supplier should be consulted for such applications which are excluded from these instructions.

HAZARDS	RANK	CONTROLS
Pinched Fingers	2	Wear proper gloves
Dropped Loads	3	Ensure the beam clamp is sufficiently tightened
Eye Injury	2	Wear safety glasses

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.46 SJP209: PLASMA CUTTER

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Welding Helmet, Safety Glasses, Welding Jacket or Sleeves and Gloves (Leather - Best Choice) Flame retardant coveralls, CSA approved steel toe boots, hearing protection, respirator

NOTES: Plasma arc cutting produces intense electric and magnetic emissions that may interfere with the proper function of cardiac pacemakers, hearing aids, or other electronic health equipment. Persons who work near plasma arc cutting applications should consult their medical health professional and the manufacturer of the health equipment to determine whether a hazard exists.

PROCEDURE

1. Check the torch for proper assembly and appropriate torch parts. The torch parts must correspond with the type of operation, and with the amperage output of this Power Supply (60 amps maximum). Refer to the Torch Manual

2. Check that the torch is properly connected. Only Thermal Dynamics model SL60 or SL100 Torches may be connected to this Power Supply

3. Check the power source for proper input voltage. Make sure the input power source meets the power requirements for the unit

4. Connect the input power cable (or close the main disconnect switch) to supply power to the system.

5. Ensure compressed air source meets requirements.

6. Check connections and turn gas supply on.

7. Clamp the work cable to the work piece or cutting table. The area must be free from oil, paint and rust. Connect only to the main part of the work piece; do not connect to the part to be cut off.

8. Place the Power Supply ON / OFF switch to the ON (up) position. AC indicator turns on. Gas indicator turns on if there is sufficient gas pressure for power supply operation.

9. Place the Power Supply RUN / Rapid Auto Restart / SET switch to the SET (down) position. Gas will flow.

10. Adjust gas pressure per the gas settings chart.

11. Place RUN / Rapid Auto Restart / SET to RUN (up) or Rapid Auto Restart (center) position. Gas flow stops.

CutMaster 81 Gas Pressure Settings		
Leads Length	SL60 (Hand Torch)	SL100 (Machine Torch)
Up to 25' (7.6 m)	70 psi 4.8 bar	65 psi 4.5 bar
Over 25' (7.6 m)	80 psi 5.5 bar	70 psi 4.8 bar

12. Set the current output level, up to 40 amps for drag cutting (with the torch tip in contact with the work piece), or up to 60 amps for standoff cutting. At output settings higher than 40 amps, the power supply automatically reduces output current to 40 amps if the torch tip contacts the work piece.

13. When the torch leaves the work piece during cutting operations with the RUN / Rapid Auto Restart / SET switch in the RUN (up) position, there is a brief delay in restarting the pilot arc. With the switch in the 'Rapid Auto Restart' (middle) position, when the torch leaves the work piece the pilot arc restarts instantly and the cutting arc restarts instantly when the pilot arc contacts the work piece. Use the 'Rapid Auto Restart' position when cutting expanded metal or gratings, or in gouging or trimming operations when an uninterrupted restart is desired.

14. Output current setting or cutting speeds may be reduced to allow slower cutting when following a line, or using a template or cutting guide while still producing cuts of excellent quality.

15. Release the trigger to stop the cutting arc. Gas continues to flow for approximately 6 seconds. During post - flow, if the user moves the trigger release to the rear and presses the trigger, the pilot arc starts. The main arc transfers to the work piece if the torch tip is within transfer distance to the work piece.

16. Turn the ON / OFF switch to OFF (down). All Power Supply indicators shut off. Unplug the input power cord or disconnect input power. Power is removed from the system.

Plasma cutters can be dangerous. Read all warnings and take every measure to ensure the safety of you and those around you. Do not cut near something that can catch fire. Do not look at the arc without proper dark lens designed for cutting or welding. Adequate ventilation should be provided to remove fumes which are produced by this cutting process. A fire extinguisher must be on standby.

HAZARDS	RANK	CONTROLS
Respiratory Ailments	2	Use a fitted respirator with a cartridge appropriate to the material being cut. Ensure adequate ventilation
Eye Damage	2	Wear tinted safety glasses and avoid looking directly at the cutting arc
Burns	2	Wear appropriate clothing including gloves and long sleeves
Cuts	2	Wear gloves
Fire	2	Remove all flammable material from the area. Have a fire extinguisher ready

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.47 SJP210: PLATE CLAMP

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Gloves, CSA approved steel toe boots

NOTE: Improper use and care of lifting clamps may result in loss of load and personal injury

PROCEDURE

1. Inspect the clamps and hoisting equipment before use. Ensure that the clamp is in good working order, free from any damage, and is rated for the load you intend to lift

2. Attach the clamp to plate and the center of gravity.

3. Lift the plate 4-6 inches off the ground and check that the clamp is holding firmly and the load is balanced.

4. Lift the plate to the required height.

5. Once your task is complete dis-engage the clamp from the plate.

HAZARDS	RANK	CONTROLS
Pinch Points	2	Identify all potential pinch points and ensure all body parts stay clear. Do not wear loose clothing

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.48 SJP211: SHOP EXHAUST SYSTEM

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Gloves, CSA approved steel toe boots

NOTE: The shop make up air and exhaust system

PROCEDURE

1. In the morning at the start of the shift make sure the exhaust system is turned on.
2. At the end of the day make sure the system is turned off.

HAZARDS	RANK	CONTROLS
Respiratory Ailments	1	Ensure the system is operating properly and all required maintenance is completed

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.49 SJP212: VICTAULIC ROLL GROOVING MACHINE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Gloves, CSA approved steel toe boots, Hearing protection

NOTE

Only employees trained in the proper use of this equipment shall operate it. Full knowledge of all operational procedures outlined in the model specific operator's manual is required. Failure to comply may result in serious injury or death.

PROCEDURE

1. Make sure the proper roll set is on the tool for the pipe size and material. Rolls are marked with the pipe size and material.

2. Raise the roll guard.

3. Set the groove diameter stop to the pipe size and schedule/ thickness to be grooved.

4. Retract the stabilizer if necessary to insert the pipe onto the lower roll.

5. Insert the piece of pipe of the correct size and schedule/thickness over the lower roll.

6. Set the main power switch to the "ON" position.

7. Set the toggle switch to the "JOG" position.

8. The operator must be positioned on the switch side of the machine. Use the safety foot switch to energize the tools motor and to bring the upper roll down into firm contact with the pipe. Withdraw your foot from the safety foot switch.

9. Remove the guard setting pad from its storage hook. Hold the guard setting pad firmly down against the pipe. Push it under the adjustable guards. Adjust each guard to lightly pinch the pad against the pipe and secure the guards in position. Remove the guard setting pad from between the pipe and the guards. Store the pad back on the hook provided.

10. Prepare to support the pipe, and set the toggle switch to the "NORMAL" position, the arm/upper roll assembly will return to its upper position, and the pipe will release.

11. Depress the safety foot control switch, keeping your body clear of the pipe, the upper roll assembly will come down and contact the pipe, the pipe will start to turn and the groove will start to form. When the groove is complete the pipe will stop rolling and the ram will return to the up

position.

12. Turn off the power switch

HAZARDS	RANK	CONTROLS
Crush/Cut/Amputation	3	Keep hands clear of the groove rollers during operation Do not put hands inside pipe during operation Do not use any device to depress the foot operated pedal
Eye Injury	2	Wear safety glasses
Entanglement	3	Do not wear loose clothing
Back Injury	2	Use mechanical means to lift large pipes
Noise	2	Wear hearing protection

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.50 SJP213: OVERHEAD CRANE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Gloves, CSA approved steel toe boots

NOTE: You MUST be trained in the proper use of the overhead crane before use

PROCEDURE

1. The crane inspection sheet must be filled in and signed before use every morning.
2. Determine the weight of the load.
3. Determine the proper size for slings and components.
4. Pad sharp edges to protect slings.
5. Initially lift the load only a few inches to test the rigging and balance.
6. The crane pendant has 2 speeds – always start in the slower speed then switch to the higher speed keeping the movement of the load fluid.
7. Always keep the load under control. If the load has a tendency to swing or rotate, have a qualified person walk along and guide it with a tag line.
8. When finishing the job, remove all slings and accessories from the hook and return all rigging to their designated storage racks.
9. Raise the hook at least 10 feet above the floor and place pendant in the storage position.

HAZARDS	RANK	CONTROLS
Crush Hazard	3	Do not stand under a suspended load
Pinch Points	2	Watch hand placement while rigging, and raising/lowering load
Eye Injury	2	Wear Safety Glasses

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.51 SJP214: PIPE POSITIONER

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

PPE REQUIRED: Safety Glasses, Gloves, CSA approved steel toe boots

NOTE: Welding positioners are machines designed to turn objects whose center of mass doesn't necessarily coincide with the axis the object is required to turn about for fabrication purposes. Welding positioners are most commonly used to turn pipe so that elbows and flanges can be welded to the pipe. A welding positioner is limited to turning offset loads (such as flanges or elbows) that are less than the rated torque of the equipment.

PROCEDURE

1. Determine which chuck suits the spool to be welded and install them on the Pipe Positioner

2. Determine if a counter weight is required. If required install a counter weight of sufficient weight to balance any offsets and/or take-offs on the pipe to be welded.

3. Attach the pipe to the positioner. Ensure that the center of gravity for any offsets and/or takeoffs is exactly opposite of the center of gravity for the counter weight.

WARNING: Never grip a work piece from the inside diameter. Metal expands when heated, severely decreasing the grip of the chuck on the work piece

4. Whenever possible mount the pipe on two stands to minimize the load place on the chuck. If this cannot be done refer to the Operations Manual to calculate the load being placed on the chuck. **Never exceed the maximum load.**

5. Test that the pipe will spin freely through the required work area.

6. Conduct all welding activities.

HAZARDS	RANK	CONTROLS
Pinch Points/Crushing	2	Be aware of your surroundings and weights and check with each rod or process change

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.52 SJP215: HYDROSTATIC PRESSURE TESTING

Workers must review this step-by-step procedure carefully to become acquainted with the safe operation procedures associated with this job task. Where in doubt ask your supervisor. If the content of this procedure is unacceptable to you, you have the right to refuse unsafe work.

1. Assemble all pressure test components, inspect and test [pump & gauge] to ensure they are in good working condition. Then connect the testing components to the pipe system. Use of a hand pump will provide better control of test pressures. For larger systems an electrical or pneumatic operated pump may be needed.

   NOTE: Before connecting any testing component into an existing line [specifically combustible gas] ensure that the line has been completely purged.

   Pressure gauges should have a range of 1.5 – 2 times the test pressure recommended for testing the pipeline. The gauge should have a minimum of 4" diameter dial face. Install one gauge at the lowest and highest points of the line to be tested. On horizontal lines only one gauge is needed.

2. Set up warning signs around the designated work area and pipe line route to state that Hydrostatic Testing is ongoing. Use danger and caution signs as required.

   NOTE: Only test personnel are to be in the area.

3. Perform a visual check of the pipe system for any open ends and valves to ensure the test line is secure.

4. With all test components connected first pressure test the line with compressed air to 5psig [pounds per square inch] for 10 minutes.

   NOTE: If this pressure is not achieved, there is a problem on the line. Check the line until the leakage point is identified and fixed.

5. Fill the pipe system with the recommended fluid [considering site conditions changes in temperature]. Vent the test line as its being filled with liquid.

6. Using a hydrostatic pump bring the pressure of the fluid to 1.5 times the operating pressure and visually check the system for any leaks.

   NOTE: If any defects are found, drain the system, conduct repairs and re-test.

7. Maintain pressure in the system for a minimum of 1 hour then conduct a second visual check of the line.

NOTE: Some projects may have specifications requiring longer test durations. Ensure that you are aware of all site testing requirements.

8. Once the test is complete and approved, drain the fluid from the system and remove all testing equipment.

   NOTE: Ensure that the proper test report is filled out and signed by all required parties prior to removing the test pressure

WARNING

If the system being tested cannot be tested by hydrostatic means and must be tested only by air in excess of the 5 PSIG noted in this procedure than authorization must be obtained from both the Project Manager and the Safety Department.

Testing with high pressure air presents significant hazards that must be controlled and special procedures must be put into place.

HAZARDS	RANK	CONTROLS
Eye Injury	2	Wear safety glasses
Noise	2	Wear hearing protection
Repetitive Motion (manual pump)	2	Rest breaks, stretching
Air Embolism	3	Keep all body parts away from a compressed air stream Do Not Exceed the 5psi air test limit
High Pressure Fluid	2	Ensure all valves are capped or plugged Direct flow away from body when draining system and drain in a controlled manner

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

PRESSURE TEST REPORT

Project:_____ Date:_____

System Tested:_____

AIR TEST

Start (Date & Time):_____

Finish (Date & Time):_____

Pressure:_____

HYDROSTATIC TEST

Start (Date & Time):_____

Finish (Date & Time):_____

Pressure:_____

SAFETY

Caution Signs Posted 24hrs in Advance: Yes_____ No_____

Danger Signs Posted Prior to Testing: Yes_____ No_____

All Safety Signs Removed Upon Completion: Yes_____ No_____

TESTED BY

Name:_____

Signature:_____

WITNESSED BY

Name &Company:_____

Signature:_____

4.53 SJP216: OPENING A VALVE TO A NEWLY INSTALLED PIPING SYSTEM

Workers must review this step-by-step procedure carefully to become acquainted with the safe operation procedures associated with this job task. Where in doubt ask your supervisor. If the content of this procedure is unacceptable to you, you have the right to refuse unsafe work.

1. After the system has been completely installed inspect the entire system and verify that there are no open ends.
2. Air test the system and check for leaks. This will verify that all system components (not including the shut off valve) are leak free.
3. Position one worker at the shut-off valve to monitor the filling of the system.
4. Position one or more workers (dependant on system size) to monitor the system components while the system is filling.
5. Open the shut-off valve to 50% to slowly fill the system.
6. Once the system is filled, at operating pressure and/or flow rate inspect the entire system one more time to verify it is leak free.
7. After the system has been inspected and verified to be free of leaks deem the system installation successful and inform your supervisor.

HAZARDS	RANK	CONTROLS
Eye Injury	2	Wear safety glasses
Noise	2	Wear hearing protection
Repetitive Motion/Awkward Body Positioning	2	Rest breaks, warm up, stretching
Air Embolism	3	Keep all body parts away from a compressed air stream
High Pressure Fluid	2	Ensure all valves are capped or plugged Direct flow away from body when draining system and drain in a controlled manner Never place your body in the line of fire when opening the system.

4.54 SJP301: VEHICLE HOISTS

WHAT TO DO BEFORE LIFTING

A vehicle lift is not a crane. It is not a jack or a mechanical ladder. Vehicle lifts are engineered to hoist and support vehicles… nothing else.

Vehicle lifts must be operated by trained workers only.
Before service employees drive a vehicle into the shop for maintenance or repair, be sure the lift area is free of:

- grease and oil
- tools
- cords and hoses
- trash and other debris

Customers and bystanders must not be in the lift area or inside the vehicle being lifted. People not familiar with the hazards in the shop could easily be injured.

The lift should be fully lowered before driving the vehicle into the work bay. Be sure the lift areas, adapters, and supports are positioned out of the way of the vehicle's tires before driving the vehicle into the bay.

LIFT CAPACITY
Never overload the lift. The manufacturer's rated capacity is displayed on the nameplate attached to the lift. If the nameplate is missing, or the information is not legible due to wear, check the rated capacity with the manufacturer's representative before using the lift.

CENTRE OF GRAVITY
The center of gravity is the point between the front and the rear of the vehicle where the weight is distributed equally. Workers must know where a vehicle's center of gravity is located before lifting the vehicle.

Each vehicle has a different center of gravity, due to:

- weight distribution
- wheel base
- location of drive train
- other factors

In most cases, the center of gravity on rear-wheel drive passenger cars is below the driver's seat. On front wheel drive passenger cars, the center of gravity is generally slightly in front of the driver's seat.

Position the center of gravity according to the vehicle manufacturer's recommended lifting points.

LIFTING POINTS

Before lifting the vehicle, check the vehicle manufacturer's recommended lifting points. In most cases, these lifting points can be found in the vehicle's shop manual. The contact pads should be positioned only according to these specifications.

Check the condition of the vehicle's lifting surfaces. Are the vehicle's lifting points:

- damaged
- rusted
- covered with oil, dirt, undercoating, or anything else that may cause slippage

Remember - before you lift the vehicle, check the vehicle manufacturer's recommended lifting points.

TYPES OF LIFTS

1) FRAME ENGAGING LIFTS

CONTACT PADS

Frame-engaging lifts use flip-up or threaded contact (foot) pads that are located on the end of each lift arm. These contact pads adjust to several positions. Be sure the flip-up pads are secured in position before spotting them under the vehicle. If a pad is not secured, it could flip back and cause the vehicle to become unstable.

Many lifts are equipped with rotating threaded contact pads that are adjustable to reach the vehicle. Before lifting the vehicle, be sure all four contact pads are adjusted appropriately. Be aware that uneven adjustment of these pads may make the load unstable. Check the lift manufacturer's recommendations for information on how to use this type of contact pad. If the lift uses contact pads with non-metallic coatings, the coatings should not be damaged or loose. If they are damaged, they should be replaced. Also be aware that oil and grease can make these surfaces slippery.

Inspect each lift arm and contact pad for cracks or other signs of damage before placing the lift arms under the vehicle. If any part of the lift is not operating appropriately, do not use the lift or attempt to fix it. Notify your supervisor immediately. Qualified lift service personnel must do the repairs.

EXTENDERS

Even though contact pads are adjustable to accommodate most vehicles, extenders may be necessary for lifting vehicles such as pickup trucks and vans. Extenders provided by the manufacturer of the lift must be used. Do not use wood, concrete blocks or other homemade extenders in their place.

2) RUNWAY (DRIVE-ON) LIFTS

Unlike frame and axle-engaging lifts, drive-on lifts raise the vehicle by its wheels. Some drive-on lifts are not wide enough to accommodate pick-up trucks with dual wheels. Check the lift manufacturer's load capacity and runway width specifications before placing a vehicle on the lift.

ROLL-OFF PROTECTION

All runway lifts should be equipped with accidental roll-off protection or chocks. Some approach ramps rise and act as chocks when the lift is raised. On lifts where automatic chocks are not provided, use appropriate manual chocks. All vehicle wheels on a runway lift must be chocked while the vehicle is on the lift.

CENTRE OF GRAVITY

Appropriate spotting points for vehicles on runway lifts vary depending on the type of lift:

- When hoisting with a single-piston in-ground lift, place the vehicle's center of gravity directly over the piston
- When using a two-piston in-ground lift, place the load's center of gravity on the center line between the two pistons
- When hoisting with a two-column surface-mounted lift, place the vehicle's center of gravity between the two columns
- On four-column lifts, the center of gravity should be placed at the midpoint of the runway. The use of wheel-alignment ramps presents an exception to these instructions. In this case, the front wheels must be located on the swivel plates, and the rear wheels on slip plates, if provided.

FREE-WHEELING JACKS

Some manufacturers offer optional air-operated or hydraulic jacks that ride along the inner rails of the two-runways. If the lift has this feature, be sure each jack is fully lowered before driving a vehicle on or off the runway. Ensure the contact surfaces are free from corrosion or obstructions and provide a solid lifting surface. Use the vehicle manufacturer's recommended lifting points.

LIFTING THE VEHICLE

A worker must not be under a suspended load unless:

- the load is supported by a vehicle lift designed for that purpose
- properly rated and maintained stands or blocks designed to support the load are placed on firm foundations

After the vehicle is appropriately spotted, raise the lift until the pads or other supports contact the vehicle. Never override or block the controls on the lift. The operator must use constant manual pressure to operate the controls and must remain at the controls while the vehicle lift is in motion, either raising or lowering a vehicle.

Remember that no one should be in or near the vehicle. Once the lift is in contact with the vehicle, visually check to ensure the supports are properly positioned on the recommended lifting points. Raise the vehicle approximately one foot off the ground and visually check the lifting points again. If the supports appear to be slipping or are not contacting a flat surface, a lift arm or other support has been incorrectly positioned. Carefully lower the lift and reposition each support. Keep in mind that unequal weight distribution may cause the vehicle to fall.

After ensuring the load is secure, lift the vehicle to the desired height and visually check the contact points again before going under the vehicle. Ensure the lift's locking device is engaged and operating properly. If it is not, carefully lower the vehicle, inform the supervisor, and have the lift serviced.

If working under a lift that does not have a locking device or is below the point when the locking device engages, place four jack stands of rated capacity under the vehicle's frame or suspension for support.

Certain features have been installed on the lift to help use the lift safely. Do not override or remove them, and maintain these features so they work as designed.

MAINTAINING LOAD STABILITY
Sudden shifts in the center of gravity may cause the vehicle to become unstable and fall. Possible causes of this change in the center of gravity are listed below.

REMOVING COMPONENTS
Removing major components from front or rear-wheel drive vehicles may cause a radical change in the vehicle's center of gravity. For example, automatic transmission work may require a new torque converter and a set of clutches. To service the transmission, it must be removed. This means that approximately 7079 kilograms of bulk is being removed from the vehicle, which will cause a sudden change in the center of gravity.

In addition to transmissions, other major components may cause a shift in the center of gravity if removed, including:

- engines
- suspension components
- rear axles and differentials
- body and frame components

Be sure to use four jack stands of rated capacity to support the vehicle and stabilize (equalize) the load when removing any of these components. When using jack stands, always adjust stand supports to ensure secure contact with the vehicle. Do not attempt to lower the vehicle onto the jack stands. Doing this disengages the lift's locking devices. If the lift is lowered too far or too quickly, the jack stands may move and cause the vehicle to fall.

Check the vehicle manufacturer's service manual for recommended procedures when removing the vehicle components mentioned above.

Never use engine or transmission supports or stands in the place of appropriately rated jack stands. These supports are not capable of supporting the vehicle.

USING CHEATERS

Tightening or loosening fasteners with a cheater or breaker bar may also cause a sudden shift in the vehicle's center of gravity. The sudden pushing or pulling force could cause a vehicle to slip from the lift's supports. The best way to avoid this risk is to tighten and loosen fasteners with an impact wrench.

STORED ENERGY

An unexpected release of stored energy, such as removal of a loaded spring or load-supporting bolt, may also cause components to shift position suddenly and alter the center of gravity.

UNEQUAL LOADS

The center of gravity may change dramatically depending on the load the vehicle is carrying (ex: equipment or luggage in the trunk). Use four jack stands to support the unequal load. Be sure the cargo does not exceed the capacity of the lift or will not shift while the vehicle is lifted. If the cargo is unstable, do not lift the vehicle.

LOWERING THE VEHICLE

Before lowering the lift, make sure the area is clear of people and check that all obstructions (ex: tool trays, jack, engine and transmission stands) have been removed from under the vehicle.

Never override the instant stop controls on the lift. The vehicle lift controls must be operated by constant manual pressure. The operator must remain at the controls while the vehicle lift is in motion and not block the controls while lowering the vehicle.

Before removing the vehicle from the work bay, ensure that the position of lift arms and supports provide a safe, unobstructed exit. Contact pads should be in their lowest position.

If more than one of the facility's lift controls is situated along the same wall, each control should be clearly numbered or marked to identify.

HAZARDS	RANK	CONTROLS
Pinch Points	2	Be aware of all moving parts and keep body parts clear
Crush Hazard	3	Ensure all safety locks are operational before going under vehicle Ensure the vehicle is secured from rolling off lift

4.55 SJP302: TIRE SERVICE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

1. Use the positive lock-down device to hold the wheel on the tire machine before you attempt to inflate the tire. If tire is mounted on a machine that does not have a positive lock-down device, perform inflation in a safety cage.

2. Use an extension air hose with an air pressure gauge to check the tire pressure. Do not inflate beyond 40 pounds of air pressure when trying to seat the beads. If both beads are not completely seated when pressure reaches 40 psi, completely deflate the assembly, reposition the tire and/or tube on the rim, re-lubricate and re-inflate.

3. Inspect both sides of the tire to be sure that the beads are evenly seated.

4. After the beads are fully seated, adjust the tire pressure to meet the operating pressure labeled on the tire sidewall.

5. Replace a tire on a rim with another tire of exactly the same rim diameter designation and suffix letters.

6. Do not mount or use tires, tubes, wheels or rims that are split, cracked, cut or contain signs of other structural defects.

7. Wear leather gloves when removing rocks, glass and other foreign materials from the inside of the tire.

HAZARDS	RANK	CONTROLS
Air Embolism	3	Keep all body parts clear from compressed air stream
Strain/Sprain	2	Use proper lifting techniques Stretch regularly to prevent repetitive strain injuries
Cuts	2	Wear gloves

4.55 SJP303: TIRE DEMOUNTING AND MOUNTING

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

TUBELESS TIRES - DEMOUNTING PROCEDURES

1. Place the tire in a horizontal position on the changer with the narrow ledge of the wheel facing up. Remove valve core and allow the tire to completely deflate.

2. Center the wheel and securely fasten it onto the changer with the hold-down cone.

3. Loosen both tire beads from rim flanges. If the beads do not readily separate from the rim flange, do not force or hammer. Use the rubber tire lubricant labeled "Non-Petroleum Based Lubricant" to lubricate the tire, rotate tire to another position and try again. Never use antifreeze, silicones or petroleum-based lubricants.

4. After beads are loosened from rim flanges, lubricate the inside of the wheel and both bead areas of the tire.

5. Use a tire iron to bring the bead of the tire onto the rotating finger of the tire changer. Hold the tire bead in the center wheel well during this operation. Do not use a pipe or a make-shift bar.

6. Start the tire changer to remove the top bead from the wheel.

7. Again use the rubber tire lubricant labeled "Non-Petroleum Based Lubricant" to lubricate the tire beads and bead seat areas of the wheel including the drop-center well of the wheel.

8. Use a tire iron to raise the bottom bead and bring it over the rotating finger of the changer. Use your hip and hand to hold the side of the tire opposite the rotating finger down in the center well of the wheel.

TUBELESS TIRES - MOUNTING PROCEDURES

1. Do not mount a tire on a wheel rim that has molten metal scars or other signs that it has been repaired by welding or brazing.

2. Remove any oxidized rubber, dried soap solution, rust or heavy paint from the rim flanges and bead ledges (especially hump and radius) using a wire brush. Replace valve stems that are cracked, split, cut or are otherwise visibly damaged.

3. Place wheel on changer with narrow bead-ledge up. Center wheel and securely fasten it onto the changer with the hold-down mechanism.

4. Use the rubber tire lubricant labeled "Non-Petroleum Based Lubricant" to lubricate sides and bases of tire beads, rim flanges and bead ledge areas. Do not use antifreeze, silicones or petroleum-based lubricants.

5. Remove any tools, foreign objects or liquids that may be present inside the tire casing.

6. In mounting the tire, push the bottom bead first in the well of the wheel.

7. Push the top bead down into the center well of the wheel. Hold the tire in this position while the rotating finger runs the bead onto the wheel. Center tire on rim.

8. Install the valve core.

9. Tighten the hold down cone before inflating the tire. Use an extension air hose with gauge and clip-on chuck to permit operator to stand clear of the tire assembly. Slowly inflate the tire until the beads "pop" on the bead ledge of the wheel. Prior to inflating the tire, loosen the hold down cone so that it and the tire assembly can be removed later. Inflate the tire to operating pressure labeled on the tire sidewall.

TUBE TYPE TIRES - DEMOUNTING PROCEDURES

1. Remove all balance weights from the rim. Place tire in a horizontal position on changer with the narrow ledge of the wheel facing up. Remove valve core and completely deflate the tire.

2. Center the wheel and securely fasten it onto the changer with the hold-down cone.

3. Loosen both tire beads from rim flanges. If the beads do not readily separate from the rim flange, do not force or hammer. Lubricate only with rubber lubricant approved by the manufacturer and rotate tire to another position and try again. Never use antifreeze, silicones or petroleum-based lubricants.

4. After beads are loosened from rim flanges, lubricate the inside of the wheel and both bead areas of the tire.

5. Use a tire iron to bring the bead of the tire onto the rotating finger of the tire changer. Hold the tire bead in the center wheel well during this operation. Do not use a pipe or a make-shift bar.

6. Start the tire changer to remove the top bead from the wheel.

7. Starting at the valve area, remove the tube from the tire by hand.

8. Again lubricate the tire beads and bead seat areas of the wheel including the drop-center well of the wheel.

9. Use a tire iron to raise the bottom bead and bring it over the rotating finger of the changer. Use your hip and hand to hold the side of the tire opposite the rotating finger down in the center well of the wheel.

TUBE TYPE TIRES - MOUNTING PROCEDURES

1. Use a wire brush to remove any oxidized rubber, dried soap solution, rust or heavy paint from the wheel well, rim flanges and bead ledges (especially hump and radius) so that interior surfaces are smooth and clean. If wheel has spokes, visually inspect drop center well rim strip for rips and cracks. If necessary to replace the strip, use one-inch wide plastic electrician's tape.

2. Place wheel with the narrow bead ledge up on the changer. Center and securely fasten wheel to changer with changer hold-down cone.

3. Insert the tube in the tire and partially inflate to round out tube. Use a brush or cloth to apply a solution of natural vegetable oil soap or rubber lubricant to the tube base and the base of the top and bottom beads. Do not let lubricant run between the tire and tube. Do not use antifreeze, silicones or petroleum-based lubricants.

4. Mount the bottom bead on the wheel, being careful not to pinch the tube against the rim.

5. After aligning the tube valve with the valve stem hole in the rim, insert and center valve stem through stem hole in the rim.

6. Mount top bead of the tire on the rim so that the bead in the valve area will be the last part of the bead to go over the rim flange. Be careful not to pinch or disturb the tube. Re-center the valve stem if necessary, by rotating both tire and tube. Reinstall the valve core.

7. Use an extension air hose with gauge and clip-on chuck to permit operator to stand clear of tire assembly. Inflate slowly to seat tire beads. Do not exceed 40 psi to seat beads.

8. To prevent tube wrinkling or buckling, remove valve core to completely deflate the tube. Reinsert valve core and firmly seat it.

9. Re-inflate assembly to the operating pressure labeled on the tire sidewall.

WHEEL MOUNTING/DEMOUNTING ON VEHICLE

1. Position the lift so that the axle hub of the vehicle is about waist height.

2. Position the tire and wheel on the floor so that the inside of the tire faces you and the outside of the tire faces the car.

3. Place hands on the side of the tire with the tire resting against your thigh just above the knee.

4. With a continuous motion, straighten up using your thigh as a pivot point. Rotate the tire until most of the weight is resting on your thigh. The inside of the tire is now facing the car.

5. Continuing the momentum, the tire and wheel goes toward the hub with a little guidance from the hands.

6. Position the wheel and hub hole on the hub and align the lugs with the holes.

7. Reverse this procedure when demounting.

HAZARDS	RANK	CONTROLS
Pinch Points	2	Identify all pinch points keep body parts clear
Strain/Sprain	2	Use proper lifting techniques Stretch regularly to prevent repetitive strain injuries
Cuts	2	Wear gloves

4.56 SJP304: BRAKE SETUP

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt ask your supervisor.

PROCEDURE

1. Block vehicle.

2. Release Maxi brakes, grasp the end of the slack adjuster where it is attached to the pushrod and pull toward you while noting amount of travel.

3. The pushrod will only move so far and then the brake shoes will contact the drum internally.

4. Allowable travel is normally 1 to 1 ½ inches.

5. Place 9/16 wrench on adjusting screw, push towards slack adjuster to free locking collar. Adjust screw until shoes are tight to drum, then back off ½ turn. Make sure locking collar comes up when finished.

6. To insure shoes are not dragging or in contact with drum, tap drum with wrench. If you hear a dull thud, shoe still contacting drum. If you hear a ring, shoes are clear.

7. When finished, have assistant apply brakes, make sure that slack adjuster is at no more than 90 degrees to the brake chamber.

8. If more than 90 degrees, have licensed mechanic check for brake system misalignment or wear.

9. Remove blocks and clean tool when finished.

HAZARDS	RANK	CONTROLS
Pinch Points	2	Identify all pinch points keep body parts clear
Strain/Sprain	2	Use proper lifting techniques Stretch regularly to prevent repetitive strain injuries

4.57 SJP305: CLUTCH SETUP

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

PROCEDURE

1. Block vehicle's wheel.
2. Shut vehicle off, remove keys from ignition.
3. Supply proper lighting to transmission area of vehicle.
4. Remove inspection plate at front of transmission bell housing on the bottom.
5. Manually bar engine over until internal adjusting ring lock tab and bolt is visible.
6. Remove lock tab and bolt.
7. The clutch pedal must either be tied down or an assistant must hold it down.
8. Located in the inner adjusting ring are notches for use of screw driver or pry bar to turn ring.
9. For more free pedal play, rotation of adjusting ring is clockwise.
10. For less free pedal play, rotation of adjusting ring is counter clockwise.
11. Three notches vary adjustment 1/16 inch.
12. Once adjustment has been made, the clutch pedal must be released.
13. Measure clutch free play (adjust to a manufactures specs.)
14. When adjusted to manufactures specs. (approx. 1 ½") reinstall lock tab and bolt.

HAZARDS	RANK	CONTROLS
Pinch Points	2	Identify all pinch points keep body parts clear
Strain/Sprain	2	Use proper lifting techniques Stretch regularly to prevent repetitive strain injuries

4.58 SJP306: GREASING VEHICLES

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

PROCEDURE

1. Bring vehicle into shop. Shut off and set park brake, remove keys from ignition, place blocks under wheels.

2. Lying on creeper with grease gun in hand and towel go to each grease fitting. Use light to see when needed.

3. Clean each fitting and apply grease until grease is seen coming from area being greased.

4. Follow same procedure, replace fittings as needed. Check for worn joints and areas when greasing.

5. When finished greasing, clean up grease gun, creeper, and trouble light as needed.

6. Remove wheel blocks when completed.

HAZARDS	RANK	CONTROLS
Pinch Points	2	Identify all pinch points keep body parts clear
Strain/Sprain	2	Use proper lifting techniques Stretch regularly to prevent repetitive strain injuries

4.59 SJP401: DRIVING MOBILE EQUIPMENT AND VEHICLES

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt ask your supervisor.

A large percentage of construction site and shop/yard accidents and injuries involve mobile equipment and trucks. Most of these accidents occur while machines are being driven. Operators must be continually aware of people and traffic movements as well as the obstacles around them.

1. Circle check your machine before entering it. Check for; obstacles, barriers, obstructions, and personnel.
2. Notify any personnel in the area at the time of the circle check that you will be operating the mobile equipment. If you are in a high traffic or pedestrian zone arrange to have some act as a spotter for you.
3. Verify that the drive gear is disengaged and parking brake is set.
4. Start the engine/motor of the mobile equipment
5. Check both of the side mirrors, the rear view mirror, and any blind spots
6. Sound the horn.
    a. Two (2) beeps to drive forward
    b. Three (3) beeps to drive in reverse
7. Re-check both of the side mirrors, the rear view mirror, and any blind spots. Verify that all obstructions and personnel are clear. If using a spotter follow their directions to move safely.

Note: Use a spotter should be used in all situations when:

a. Backing up in an area where vision is limited.
b. Judging distance between the machine and obstacles is required.
c. Backing up in busy traffic areas.
d. Driving through areas with uncontrolled levels of pedestrian traffic
e. Driving in areas of constricted space.

HAZARDS	RANK	CONTROLS
Crush Hazard	3	As necessary use flag person. Situational awareness
Property Damage	2	Do walk around vehicle before backing up

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

Please refer to the Safety Manual and the following sections for more information on performing the above procedure safely;

Section 6- General Safety Rules

Section 6- Vehicle Policy

4.60 SJP402: INSTALLING DROP IN ANCHORS

NOTE: This task will involve hammer drilling into a concrete floor, wall or ceiling. For this procedure we will discuss the installation into overhead concrete as it is the more involved of the three. Please see notes at the end.

1. Assess work area for any hazards such as openings in floor or drop offs, icy/slippery conditions, electrical hazards, other trades, overhead work etc. Clean work area as necessary to prevent slip/trips/falls.

2. Determine location of anchors.

3. Using whatever means necessary (ladder, scaffolding or aerial work platform) get to within easy reach of the overhead slab.

4. Using a hammer drill, drill a hole the required diameter and depth for the anchors being installed. If installing drop in anchors, drill hole slightly deeper than the length of the anchor. (Must be wearing a fit tested respirator with particulate filters and safety glasses or goggles and or face shield).

5. Using proper sized setting tool (comes with drop in anchors) and a pair of standard 6”-8” vice grips, clamp vice grips around middle of set tool. This will allow worker to use the vice grips as a handle, keeping hand out of line of fire when hammering set tool.

6. Place drop in anchor into hole just drilled and place set tool so set tool pin is inside anchor center and contacting wedge. Using a hammer, hit end of set tool until set tool drives the anchor wedge as far as it can go.

7. Repeat in this fashion until all necessary drop in anchors are in installed.

NOTE: There are commercially available anchor setting tools in various sizes that fit into a hammer drill and allow the installer to hammer the wedge pin in a drop in anchor using the hammering action of the drill.

HAZARDS	RANK	CONTROLS
Crush Injury	2	Use method described above. Use special bit for setting anchor
Debris in Eye	2	Wear safety goggles
Silica Dust	2	Wear a fit tested respirator with P100 particulate filters

REFERENCE: Manufacture’s Operators Manual; ARPI’S INDUSTRIES LTD Safety Manual

Please reference the **Respiratory Code of Practice** for this procedure as the concrete dust created when drilling the holes for the anchors contains **friable silica dust.**

Section 7 - Personal Protective Equipment (PPE)

4.61 SJP403: FIRE EXTINGUISHER USE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

PPE REQUIRED: Hard Hat and Eye Protection

PROCEDURE

1. Remove extinguisher from hanger.
2. Carry extinguisher in upright position to fire.
3. Pull pin, hold hose or horn in one hand, extinguisher in other.
4. Squeeze lever in handle to discharge chemical.
5. Maintain control of extinguisher, avoid exposing individuals to contents.
6. Aim spray at base of fire using a sweeping motion.
7. Move away when extinguisher empties. Never turn back to fire.
8. Promptly report use of extinguisher.

HAZARDS	RANK	CONTROLS
Slips/Trips	2	Ensure good footing and observe surroundings. Know your escape route
Chemical Exposure	2	Know what type of extinguisher you are using. Review MSDS
Burn	3	Stay a safe distance from the fire Only attempt to extinguish a fire that is controllable. If you lose control of the fire evacuate immediately. If clothing catches fire remove it immediately. Stop,Drop, and Roll

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.62 SJP404: HOT WORK PROCEDURES

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

PURPOSE

Welding and Hot Work, Such as brazing or grinding present a significant opportunity for fire and injury. All precautions of this program must be applied prior to commencing any welding or hot work by the company employees or contractors.

DEFINITIONS

Welding/Hot Works Procedure: any activity that results in sparks, fire, molten slag, or hot material that has the potential to cause fires or explosions.

Examples of Hot Work: Cutting, Brazing, Soldering, Thawing Pipes, Grinding and Welding.

HAZARDS

- Fires & Explosions
- Skin Burns
- Welding "Blindness"
- Respiratory hazards from fumes and smoke.

RESPONSIBILITIES

Management:

1. Provide training for all employees whose tasks include heat, spark or flame producing operations such as welding, brazing, or grinding.
2. Develop and monitor effective hot work procedures.
3. Provide safe equipment for hot work.
4. Provide proper and effective PPE for all hot work.

Supervisors:

1. Monitor all hot work operations and ensure that proper procedures are being followed.
2. Ensure all hot work equipment and PPE are in safe working order.
3. Allow only trained and authorized employees to conduct hot work.
4. Ensure permits are used for all hot work outside authorized areas or as required by the client.

Employees:

1. Follow hot work procedures.
2. Properly use appropriate hot work PPE.
3. Inspect all hot work equipment before use.

4. **Do Not** use damaged hot work equipment.

TRAINING SHALL INCLUDE

1. Review of requirements listed in the O.H. & S. codes.

2. Use of Hot Work Permit System.

3. Supervisor responsibilities.

4. Fire watch responsibilities—specifically, the fire watch must know:
   a) That their ONLY duty is to fire watch.
   b) When they can terminate the watch.
   c) How to use the provided fire extinguisher
   d) How to activate fire alarm if fire is beyond the initial stage.

5. Operator responsibilities.

6. Contractor's responsibilities.

7. Documentation requirements.

8. Fire Extinguisher training.

HOT WORK PROCEDURES

Fire Prevention Actions for Welding/Hot Works: Where practicable, all combustibles shall be relocated at least 35 feet from the work site. Where relocation is impractical, combustibles shall be protected with flame proof covers, shielded with metal, guards, curtains or wet down material to help prevent ignition of material.

Ducts, conveyor systems, and augers that might carry sparks to distant combustibles **shall be protected or shut down.**

Where cutting or welding is done near walls, partitions, ceilings, or a roof of combustible construction, fire resistant shields or guards shall be provided to prevent ignition

If welding is to be done on a metal wall, partition, ceiling, or roof, precautions shall be taken to prevent ignition of combustibles on the other side, due to conduction of radiant heat. **Where combustibles cannot be relocated on the opposite side of the work, a fire watch person shall be provided on the opposite side of the work.**

Welding shall not be attempted on a metal partition, wall, ceiling or roof having a covering or on walls having combustible sandwich panel construction.

Cutting or welding on pipes or other metal in contact with combustible walls, partitions, ceilings, or roofs shall not be undertaken if the work is close enough to cause ignition by combustion.

Cutting or welding shall not be permitted in the following situations:

1. In areas not authorized by management.
2. In sprinkled buildings while such protection is impaired.
3. In the presence of potentially explosive atmospheres.
4. In areas where there is dust accumulation of greater the 1/16 inch within 35 feet of the area where welding/hot works will be conducted. All dust accumulation should be cleaned up following the housekeeping program of their facility before welding/hot work is permitted.

Suitable extinguishers shall be provided and maintained ready for instant use.

A fire watch person shall be provided during and for30 minutes past the completion of the hot work.

A hot work permit will be issued on all welding or cutting outside of the designated welding area.

Welding & Hot Work Fire Prevention Measures

A designated welding area should be established to meet the following requirements:

1. Floors swept and clean of combustibles within 35 feet of work area.
2. Flammable and combustible liquids and material will be kept 35 feet from work area.
3. Adequate ventilation providing 20 air changes per hour, such as a suction hood system should be provided to the work area.
4. At least a 5 lb. dry chemical fire extinguisher should be within access of the 35 feet of work area.
5. Protective dividers such as welding curtains or non-combustible walls will be provided to contain sparks and slag to the combustible free area.

Requirements for welding conducted outside the designated welding area:

1. Portable welding curtains or shields must be used to protect other workers in the welding area.
2. A Hot Work Permit must be completed and complied with prior to welding operation. (As required by the client and as stipulated in the OHS Code).
3. Respiratory protection is mandatory unless an adequate monitored air flow away from the welder and others present can be established.
4. Plastic materials are covered with welding tarps during welding procedures.
5. Fire watch must be provided for all hot work operations.

Restricted Space Definition - (Occupational Health and Safety Code 2009 Explanation Guide)
A “restricted space” is an enclosed or partially enclosed space, not intended for continuous human occupancy that has a restricted, limited or impeded means of entry or exit because of its construction. It can be thought of as a work area in which the only hazard is the difficulty of getting into or out of the space. All other hazards are either non-existent or have been eliminated or controlled as required by Part 2. Restricted spaces are therefore not subject to the permitting,

atmosphere testing and tending worker requirements of a confined space. Employers and workers must be mindful that a restricted space can become a confined space if conditions or work practices change. Employers who voluntarily apply relevant sections of ANSI Z117.1-2003, *Safety Requirements for Confined Spaces*, might refer to restricted spaces as "non-permitted confined spaces".

See "Confined Space Code of Practice" for further information.

HAZARDS	RANK	CONTROLS
Fire/Explosion	3	Ensure all flammables and combustibles are removed from the area
Burns	2	Wear appropriate gloves and long sleeves (when required)
Respiratory Damage	2	Wear respiratory protection (dependent on type of hot work)
Eye Damage	2	Wear appropriate eye protection (dependent on type of hot work)

HOT WORK PERMIT

All operations involving open flame or that have the potential to create an open flame or sparks require a hot work permit. This includes but is not limited to; brazing, grinding, soldering, thawing, heating, and welding.

Date: _____ **Job Number:** _____

Location: _____

Time Started: _____ **Time Completed:** _____

Description of the work to be performed: _____

_____

_____

_____

	Hot Work Checklist
	Building fire suppression systems are operable (if applicable)
	All equipment is in good condition
	Fire extinguisher is available
	Explosive atmosphere has been eliminated
	Requirements Within 35 Feet
	Combustible material has been moved or protected
	All wall and floor openings are covered
	Fire Watch
	Fire watch will be provided for 30 minutes after completion and throughout breaks
	Fire watch will have a fire extinguisher
	Fire watch is instructed in their responsibilities
	Fire watch is required on the opposite side of walls or lower floors
	Other Precautions Taken

Worker Name	Worker Signature

SUPERVISOR

Name: _____ **Signature:** _____

FIRE WATCH COMPLETED BY

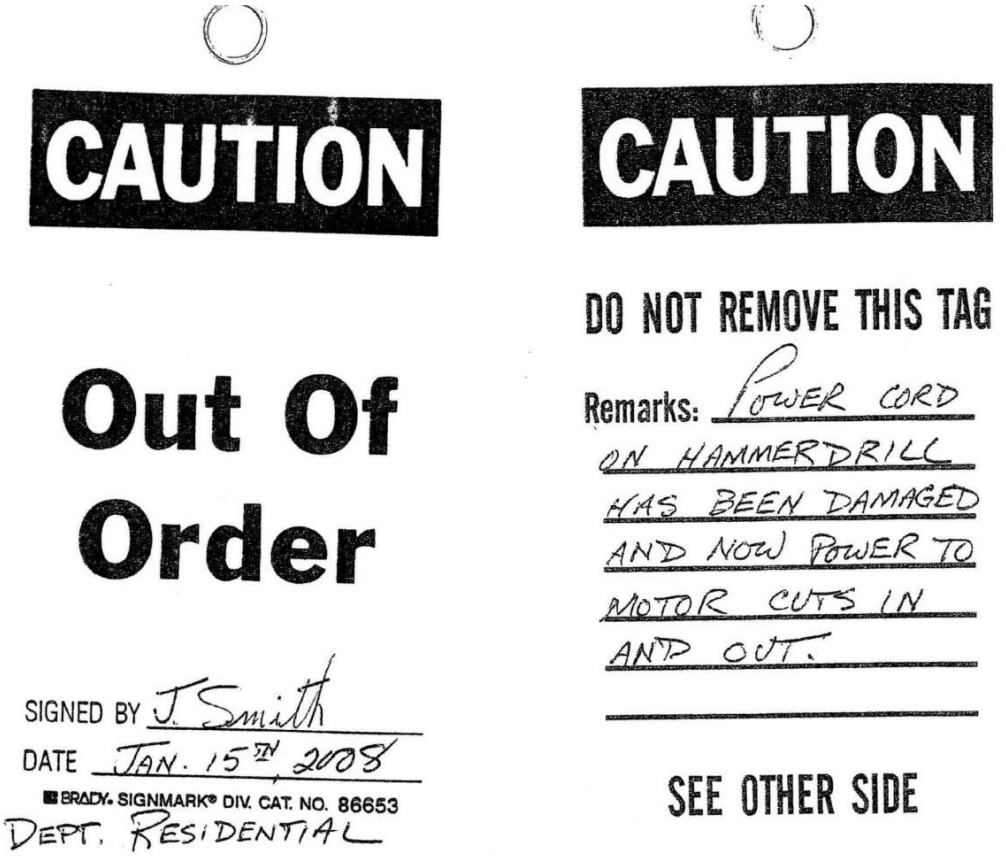
Name: _____ **Signature:** _____

4.63 SJP405: TAG-OUT PROCEDURE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

When a tool breaks and is in need of repair or adjustment, please fill out and attach one of the provided yellow caution tags. This will not only apply to power tools but ladders, scaffold, genie lifts etc., as well. These tags are being provided to ensure that broken or malfunctioning tools do not get used by anyone else possibly causing injury. They are also being provided to make sure that the tools are repaired in a timely manner and returned to the proper user or job-site. In order to speed up the repair process put the following information on the caution tag:

1. Name of person sending tool in for repair.
2. The date you are sending it in.
3. What department you work for.
4. What Job-Site you working at.
5. What is exactly wrong the tool?



4.64 SJP406: ENERGY ISOLATION LOCKOUT

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

Electricity, used properly, is one of the best friends man can have. However, improper use and lack of respect can **KILL**. Some areas of concern to construction workers are:

1. Overhead power lines.
2. Underground power lines.
3. Portable electric tools.
4. Temporary electrical supplies to field shacks/offices.
5. Live Equipment

ALWAYS request a power line location before you dig. Even if you are sure there is no power line in the area - **HAVE THE APPROPRIATE UTILITY COMPANY CONFIRMS IT**.

If you are working in the area of overhead power lines, contact the utility company and ask:

1. What voltage the line is carrying?
2. Is it necessary to protect the line either by sheathing or isolating?

Portable electric tools should be checked before use for frayed cords, cracked plugs, - 3 pin plugs (unless the tool is double insulated - this will be indicated on the tool).

LOCK OUT EXEMPTION

The only work allowed to be conducted on a piece of equipment that is live is diagnostics. When performing diagnostics the workers must identify all hazardous energy sources affecting their work and implement controls to ensure contact will not be made

LOCK OUT PROCEDURES

Following procedure prior to the removal of a lock shall be adhered to:

Before work commences on electrically driven machinery or electrical power line and associated equipment, the equipment shall be made safe for work by means of the following procedures.

1. An individual worker will be assigned to be in charge of the work on a specific piece of equipment.

2. The work will open the switch on the main electrical power supply control for that piece of equipment, as well as any other control or switches through which the equipment can be energized.

3. The worker will lock any energizing switches in the open position and tag them, noting date and signature. The worker will then attempt to operate the equipment and ensure all parts, extensions and attachments have been secured against accidental movements and that hazardous conditions of pressure and tension have been neutralized. Whenever employees are working independently of

each other on the same machinery, they will also be required to lockout and tag the control.

4. Only the worker who installed a safety lock can remove it. The Site Manager is the only other person who can authorize a safety lock to be removed.

The following procedure prior to the removal of a lock shall be adhered to:

1. Attempt to locate and have the employee who installed the lock remove it.
2. Ensure the machinery can be safely operated.
3. Account for all workers involved with the work on the specified equipment and the whereabouts of the person who affixed the safety lock.

Failure to follow these steps prior to the removal of locks and tags may result in serious injury to fellow workers or damage to equipment.

The company will provide safety locks with one key. No one is to possess duplicate keys to an individual workers safety lock or have duplicate keys made. On completion of using locks and keys, they will be returned to the assigned place. A general safety lock can be shared when multiple parties are involved with the work on the equipment, however, when work is actively being done or if the equipment must be left in an unsafe to operate condition an individual worker lock must be applied that can only be removed by that individual worker and only removed once work is complete and the equipment is returned to safe operating condition.

The company will also provide tags and multiple lock out devices.

This lock-out/tagging policy has been adapted for the protection of the Contractor's employees and workers in the performance of their work on electrical equipment and systems which may be energized during any stage of the following activities:

1. Construction.
2. Alterations to existing facilities.
3. Commissioning of electrical or process systems.
4. Maintenance of electrical equipment and process systems.

Lock-out/tagging procedures become an important requirement during any of the foregoing activities when any piece of equipment or system represents a potential hazard to life and property. These procedures are intended to supplement but not replace any requirements dictated by Occupational Health and Safety or any other contractual obligations.

In some instances an owner may insist their existing lock-out procedures be used, in which event the Contractor's supervisor shall examine the Owner's procedures and ensure they are completely equal to the Contractor's standards before complying with his request. There may be variances in certain procedures for specific equipment on various sites to formulate safe lock-out procedures needed for

special activities.

Contractor's policy places full responsibility on management and project supervisors to fully enforce lock-out procedure requirements and does not expect employees to work under procedures sub-standard to those in this manual.

LOCK-OUT

Lock-out requirements come into effect when a system or pieces of equipment are energized and their accidental operation could be a potential hazard to life and property.
Lock-out tagging requirements are applicable to all energy sources, i. e. electricity, any compressed gasses, compressed air, hydraulics, steam, piping and vessels associated with specific electrical installations.

LOCK-OUT APPARATUS

- Scissor type "gang lock" (to be used wherever possible)
- Lock-out tags
- Keyed locks (identified by number for issue to individual workers)
- Master key (issued only to project supervisor or appointed designates). Master key to remain in strict custody of the recipient during the course of a project

LOCK-OUT/TAGGIN PROCEDURES

1. Contractor's personnel are not to work on any equipment or system that represents a safety hazard unless it is locked-out or tagged.

2. Contractor, owner, and supervisors are to determine what equipment items have to be locked-out.

3. The owner/contractor shall appoint a responsible employee to assist in location the necessary switches, breakers, relays including fuses that have to be locked-out, blocked or removed.

4. Contractor's project supervisor or his/her appointed designate shall install either a scissor type gang lock or tag isolating the device.

5. Contractor's project supervisor is to arrange a pre-job meeting with all workers involved including the owner or principal contractors to review a job plan for the purpose of establishing awareness of individual responsibilities. Where required, written instructions are to be distributed.

6. The contractor's designate shall satisfy themselves that the equipment or system is correctly and fully locked-out and recorded inoperative.

7. Workers who will be working on the equipment shall in addition to the supervisor place their own individual locks in the isolating device(s).

8. Tagging of equipment or control devices is to be done on a non-conductive material.

9. Workers are to remove their own individual locks when they are no longer working on that equipment.

10. When the work is completed and after all personal locks have been removed, the company supervisor is to make a final check of the equipment before removing their lock to ensure that is safe to operate before proceeding with clearing the lock-out.

11. If a worker has left the job site (quit, discharged or injured) the personal locks must be removed from service until the keys are recovered.

12. No person shall remove any personal lock other than their own. Unauthorized removal of a lock is cause for dismissal.

13. Double shift workers leaving the job site will remove their personal locks which are to be immediately replaced by personal locks issued to workers coming on shift.

14. A master key for personal locks shall be kept by the company supervisor in a secure location and shall only be used by that supervisor or his designate exercising the following procedure.

LOCK REMOVAL BY OTHERS

Before a personal lock is removed by others the following shall apply:

1. The workers or persons owning the personal lock must be positively identified.

2. All reasonable efforts have been made to contact the worker who installed the lock to have them come to the site and remove the lock.

3. If the worker cannot be contacted or is incapable of removing their lock, the locks are removed in the absence of the lock owner. Should an investigation determine the particular lock is still essential to eliminating a potential hazard then the lock removed shall be immediately replaced by a lock owned by the worker on site who would be appointed to take over for the absentee?

4. Lock removal should be done with the master key, with cutting the lock off being a last resort.

5. That all information regarding personal lock removal is documented in the lock removal form.

HAZARDS	RANK	CONTROLS
Contact with Energy Source	3	Follow the procedure above to ensure that all sources of energy are safely deactivated prior to starting work

LOCK OUT LOG

Contract Name:	Job #:
Area:	
Supervisor:	Phone #:

Equipment Tag Number: Lock Number	Date Locked: Worker	Date Locked: Worker:
Equipment Tag Number: Lock Number	Date Locked: Worker	Date Locked: Worker:
Equipment Tag Number: Lock Number	Date Locked: Worker	Date Locked: Worker:
Equipment Tag Number: Lock Number	Date Locked: Worker	Date Locked: Worker:
Equipment Tag Number: Lock Number	Date Locked: Worker	Date Locked: Worker:
Equipment Tag Number: Lock Number	Date Locked: Worker	Date Locked: Worker:

4.65 SJP407: MAN BASKET USE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

NOTE: The forklift operator must be properly trained and certified to operate the forklift. The worker in the man basket must have the proper training and certification in the use of fall protection equipment. Unless this training has been completed, do not perform the following procedure.

NOTE2: The forklift operator and man basket worker should go over the task and potential hazards for that task. Both workers should understand the procedures and risks involved prior to doing the task. Forklift operator is not to leave the forklift unattended with man in basket in raised position.

1. Forklift operator to move forks on forklift to line up with fork pockets on the man basket.

2. Lower forks on forklift and tilt mast so forks tips line up exactly with the man basket pockets. Pull slowly forward sliding the forks into the man basket pockets.

3. Chain the basket to the mast of the forklift using provided chain attached to man basket. Wrap the chain around the backside of the mast and hook onto hook bracket provided on man basket.

4. Attach a retractable lanyard to the proper tie off point in the man basket.

5. Worker riding in man basket is to put on a fall protection harness and adjust properly. Then climb into man basket.

6. Forklift operator to attach a retractable lanyard to the D- ring on the worker's harness.

7. Hook two safety chains on front of man basket to close entrance.

8. Forklift operator to get back into forklift and do up seatbelt.

9. Worker in man basket will verbally guide the forklift operator into position to pull stock.

10. Worker in man basket to reach forward and pull the stock onto the fork extensions of the man basket. Worker is not to step out of the man basket and onto the forks during this procedure.

11. Once stock is securely on the forks of the man basket the worker can give the go-ahead for the forklift operator to lower the man basket with the stock to the ground.

NOTE: If verbal communication between worker in man basket and forklift operator is compromised by loud noise in the area, either wait for the noise to subside or ask for it to be stopped while you perform the stock picking procedure.

HAZARDS	RANK	CONTROLS
Fall From Height	3	Use proper harness and lanyard for task. Ensure forklift operator is aware of possible hazards and how to prevent them
Pinch/Crush Injuries	2	Keep hands inside cage when moving. Careful hand placement

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.66 SJP408: FIRE RETARDANT SPRAY

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor. If the content of this procedure is unacceptable to you, you have the right to refuse unsafe work.

1. No person is permitted or authorized to work in any area on site when the fire spray material is being mixed or applied [spraying] until the job is completed and the area cleaned. Authorization will only be granted if the work area is properly cordoned off to prevent excessive dust generation and exposure with suitable safety measures by the contractor. Ensure where possible that materials are properly covered to prevent fire spray spill [arrange with contractor and sub-trade responsible for the job].

2. Confirm the layout for pipes, pumps, boilers units and control panels. Identify locations or materials [inserts, thread rods, unit struts] covered with fire spray material that will have to be drilled or cut into to hook up pipes.

3. Persons will be assigned where possible to use wet clothing to clean off material components covered with fire spray. They will be fit tested and provided with respirators, coveralls, safety goggles and rubber hand gloves. When cleaning is completed other persons responsible for assembly of pipes and other components will commence work in the area

4. All employees working in the area must wear the required PPE provided [dust mask N95, coveralls, safety glasses and hand gloves] at all times while working with fire spray. PPE must be worn when drilling, cutting into inserts, beams and metal sheets to attach thread rods, uni-struts and pipe clevis hangers [refer to job hazard assessment for working with fire spray and SJP & JHA documented for installation of pipe]

5. When work is completed daily the work area must be cleaned [housekeeping] to clear up dust and garbage generated during work and disposed of in garbage provided on site. Person responsible for cleaning must wear the PPE listed above.

HAZARDS	RANK	CONTROLS
Silica Dust	2	Wear fitted respirator with P100 filters

REFERENCE: Manufacture's Operators Manual; ARPI'S INDUSTRIES LTD Safety Manual

4.67 SJP409: WORKING ALONE

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

There are four steps required by the O.H. & S. Code, Part 28. The fourth requirement is the focus of this procedure. It is to establish an effective means of communication.

1. Conduct a hazard assessment.
2. Eliminate or reduce the risks.
3. Ensure employees are trained and educated.
4. Establish an effective means of communication.

NOTE: This procedure shall apply to all employees who work on site alone.

WORKING ALONE DEFINED
OH&S Code Part 28

APPLICATION
393(1) This part applies if:
a) A worker is working alone at a work site, and
b) Assistance is not readily available if there is an emergency or the worker is injured or ill.

393(2) Working alone is considered a hazard for the purposes of part 2.

PRECAUTIONS REQUIRED
An employer must, for any worker working alone, provide an effective communication system consisting of:
a) radio communication,
b) landline or cellular telephone communication, or
c) some other effective means of electronic communication that includes regular contact by the employer or designate at intervals appropriate to the nature of the hazard associated with the worker's work.

394(1.1) Despite subsection (1), if effective electronic communication is not practicable at the work site, the employer must ensure that:
a) the employer or designate visits the worker, or
b) the worker contacts the employer or designate at intervals appropriate to the nature of the hazard associated with the worker's work.

PROCEDURE
During job planning and/or the hazard assessment process identify if a worker will be in a working alone situation;

1. The worker and a supervisor must be outfitted with either a radio or cellular telephone for the duration of the working alone situation;

NOTE: The chosen device must be tested prior to the start of the working alone situation to ensure that effective communication can be established. If effective communication cannot be established working alone will not be authorized.

2. A standard check-in interval must be set. The frequency of this interval is to be directly related to the level of hazard that exists during the working alone situation and cannot exceed 2 hours;

3. At each interval time the work must call the supervisor and advise if they are still safe;

4. If the interval is reached and the supervisor does not receive a call then they must attempt to call the worker. If the supervisor does not receive a response for the worker they must immediately make attend the last known whereabouts of the worker;

5. The supervisor is ultimately responsible to ensure that the worker remains safe and must at all times during the work alone situation be available to receive calls and attend to the work when required;

NOTE: If either the supervisor or the worker fails to adhere to this procedure they will be subject to disciplinary action including possible termination for a first offence.

HAZARDS	RANK	CONTROLS
Inability to obtain emergency help when required	3	As outlined in the above procedure a positive feedback communication system must be maintained for the duration of all work alone situations

4.68 SJP410: FLOOR OPENINGS

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. Where in doubt ask your supervisor.

Floor Opening: For the purpose of this procedure a floor opening is considered to be any opening in the floor that is large enough to cause bodily harm to a person whether by becoming a trip hazard or a fall hazard.

1. Identify any floor openings in your work area on your hazard assessment.
2. Any floor openings that can be covered should be identified and have the responsible party securely cover them, as per OHS Code, prior to work commencing. If work must continue before the responsible party can install a cover then a control zone must be established 2 meters from the leading edge of the opening. The control zone must be clearly marked indicating the hazard and the contact information of the supervisor responsible for the area. Any areas that have floor openings that have not been fully secured must be brought to the attention of the Prime Contractor on site for follow-up.
3. Any floor openings too large for a cover must be protected by a guardrail system or control zone. The control zone must be setup a minimum of 2 metres from the leading edge and clearly marked indicating the hazard and the contact information of the supervisor responsible for the area. If work must be done within the control zone and without a guardrail in place then a fall protection system must be used.
4. Any floor opening created through the course of work must be protected by a cover, guardrail, or control zone before being left unattended.

HAZARDS	RANK	CONTROLS
Fall from height	3	Guardrails, control zones, or fall protection must be utilized
Slip/Trip	2	All openings must be identified and/or covered

4.69 SJP411: PRE-CAST INSERT INSTALLATION

Developed by: Cody Muirhead

TOOLS REQUIRED: Chalk line / String line, 36 inch drill extension(deck drillller), Tape measure, Permanent marker, 24 inch bolt cutters, 7/8 inch unibit or equivalent, Cordless drill, 24 inch Framing square

PPE REQUIRED: Safety goggles, CSA approved work boots, Knee pads, Gloves, and Ear plugs.

1. Assess work area for hazards or anything that could interfere with layout and drilling. (Examples might include other trades, open holes, missing railing or slippery/ice conditions.
2. Acquire blueprints that correspond to the floor you are installing inserts on. Also determine any special PPE required based on any hazards in the area(Example: Harness if working near leading edges.
3. Scale off the blueprints to determine the approximate number of inserts you will need. After calculating add a few extras because they are damaged very easily. (**Note**: Precast inserts come in many different sizes choose the size that fits your application)
4. Using a chalk line or string line mark the grid lines necessary to find starting locations.
5. Mark the starting locations and chalk a center line. Then using your tape measure and framing square mark the Insert locations. (**Note**: If laying out on corrugated metal it is important to upsize the channels so the inserts sit in the low flute) (**Note**: Precast inserts need to sit perfectly straight up and down to do their job, do not install them in tight spaces or crooked)
6. Drill required holes and install inserts by placing them in the hole and applying pressure to the top, if done correctly the plastic sleeve should slide through the hole then clamp the Insert in place from beneath.(**Note**: This step is only required if you are installing precast inserts on corrugated metal. For wooden concrete shoring simply nail the inserts into the wood instead.). (**Note**: If you absolutely need to use the high flute for inserts, only install them the day before the pour, otherwise they are very likely to be damaged)
7. The day before the concrete pour come back to check each insert, there is a small chance somebody damaged it or it was not installed correctly. These inserts should be replaced.(**Note**: you may need bolt cutters to cut mesh away to expose damaged inserts)

HAZARDS	RANK	CONTROLS
Strains/Sprains	2	Wear knee pads Use auxiliary handle on the drill
Slips/Trips	2	Maintain housekeeping
Debris in Eyes	2	Wear safety goggles
Fall from height	3	Wear a fall protection system where a fall of 3+ meters exists
Silica Dust	2	Wear a fit tested respirator with P100 particulate filters

4.70 SJP-412: GROUND DISTURBANCE

1.0 PURPOSE

The purpose of this procedure is to specify requirements that will safeguard workers in and around trenches and excavations.

2.0 SCOPE

This procedure applies to all ARPI'S INDUSTRIES LTD. worksites. All legislative jurisdictional requirements will be reviewed, and the more stringent requirements will be applied.

3.0 DEFINITIONS

3.1 Benching

A method of protecting workers from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels. Not approved for Class C soil. Refer to legislative jurisdictional requirements as necessary.

3.2 Cave-in

The separation of a mass of soil or rock material from the side of an excavation, or the loss of soil from under a trench shield or support system, and its sudden movement into the excavation, either by falling or sliding, in sufficient quantity so that it could entrap, cover, or otherwise injure and/or immobilize a person.

3.3 Cross Braces

The horizontal members of a shoring system installed perpendicular to the sides of the excavation, the ends of which bear against either uprights or wales.

3.4 Excavation

Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

3.5 Faces or Sides

The vertical or inclined earth surfaces formed as a result of excavation work.

3.6 Failure

The breakage, displacement, or permanent deformation of a structural member or connection so as to reduce its structural integrity and its supportive capabilities.

3.7 Hazardous Atmosphere

An atmosphere that by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful may cause death, illness, or injury.

3.8 Kickout

The accidental release or failure of a cross brace.

3.9 Protective Barricade

Provides a physical barrier to protect people from such hazards as floor openings or excavations.

3.10 Protective System

A method of protecting workers from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide necessary protection.

3.11 Ramp

An inclined walking or working surface that is used to gain access to one point from another, and is constructed from earth or from structural materials such as steel or wood.

3.12 Registered Professional Engineer

A person who is registered as a professional engineer in the state/province where the work is to be performed; however, a professional engineer registered in any state/province is deemed to be a registered professional engineer within the meaning of this standard when approving designs for manufactured protective systems or tabulated data to be used in interstate/interprovincial commerce.

3.13 Sheeting

The members of a shoring system that retain the earth in position and in turn are supported by other members of the shoring system.

3.14 Shield (Shield System)

A structure that is able to withstand the forces imposed on it by a cave-in and thereby protects workers within the structure. Shields can be permanent structures or can be designed to be portable and moved along as work progresses. Additionally, shields can be

either pre-manufactured or job-built in accordance with applicable standards. Shields used in trenches are usually referred to as trench boxes or trench shields.

3.15 Shoring (Shoring System)

A structure such as a metal hydraulic, mechanical, or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

3.16 Sloping

A method of protecting workers from cave-ins by excavating to form sides of an excavation that is inclined away from the excavation, so as to prevent cave-ins. The angle of incline required to prevent a cave-in varies with differences in such factors as the soil type, environmental conditions of exposure, and application of surcharge loads. Refer to legislative jurisdictional requirements as needed.

3.17 Soil

Type A soil means cohesive soils such as clay or soil with an excessive clay content.

Type B soil is cohesive soil but the clay content is lower. It includes silt, sandy loam, and dry rock that is not stable.

Type C soil is granular soils such as gravel, sand, and loamy sand.

3.18 Stable Rock

Natural solid mineral material that can be excavated with vertical sides and will remain intact while exposed. Unstable rock is considered to be stable when the rock material on the side or sides of the excavation is secured against caving-in or movement by rock bolts or by another protective system that has been designed by a registered professional engineer.

3.19 Structural Ramp

A ramp built of steel or wood, usually used for vehicle access. Ramps made of soil or rock are not considered structural ramps.

3.20 Support System

A structure such as underpinning, bracing, or shoring that provides support to an adjacent structure, underground installation, or the sides of an excavation.

3.21 Tabulated Data

Tables and charts approved by a registered professional engineer and used to design and construct a protective system.

3.22 Trench (Trench Excavation)

A narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measure at the bottom) is not greater than 15 feet (4.6 m). If forms or other structures are installed or constructed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to 15 feet (4.6 m) or less (measured at the bottom of the excavation), the excavation is also considered to be a trench.

3.23 Uprights

The vertical members of a trench shoring system placed in contact with the earth and usually positioned so that individual members do not contact each other. Uprights placed so that individual members are closely spaced, in contact with, or interconnected to each other, are often called sheeting.

3.24 Wales

Horizontal members of a shoring system placed parallel to the excavation face whose sides bear against the vertical members of the shoring system or earth.

3.25 Warning Barricade

Erected to call attention to specific hazards, but provides no physical protection from the hazard.

4.0 PROCEDURE

4.1 Hazards

- cave-in
- drowning
- atmospheric contaminants
- falls
- struck by excavation equipment
- falling objects

4.2 Hazard Controls

- Worker safety orientations and training.
- Pre-Job and Daily Hazard Assessments
- Periodic formal and informal inspections of project.

- PPE
- Flagging and Barricades

4.3 Ground Disturbance Permit

Prior to excavating or otherwise disturbing the ground more than 6 inches (15.24 cm) below the surface, a Excavation/Ground Disturbance Permit, will be completed by the excavation competent person, and all conditions checked to make sure that the safety of workers and property is assured. All permits will be retained on file for the duration of the project.

4.4 Surface Requirements

4.4.1 Traffic

Traffic must be rerouted so as to provide protection for workers assigned to work in a trench or excavation. The weight of traffic and traffic vibrations must be allowed for in shoring and trench box design. Construction traffic such as payloaders, concrete trucks, cranes, and hoes must be a factor, as well as weights of materials. Jersey barriers or K-rails with a chain link fence mounted on the top provide for protection from traffic, pedestrian and visitor access control, and security at night to prevent jobsite/trench access.

4.4.2 Barricading Excavations and Trenches

- All excavations of any type will be barricaded to protect pedestrians and equipment/vehicles.
- Excavations requiring wooden barricades are
  - any excavation scheduled to be open more than 36 hours; and
  - any excavation that cuts an accepted established sidewalk or aisle way.
  - Note: Refer to legislative jurisdictional requirements for specific rules on barricading.
- Wooden barricades will be constructed with a 2-inch by 4-inch (5 cm x 10 cm) top rail at 42 inches (1.06 m) in height and a 1-inch by 4-inch (2.5 cm x
- 10.2 cm) mid-rail at 21 inches (0.53 m) in height. Uprights constructed of 2- inch by 4-inch (5.1 cm x 10.2 cm) will be no farther than 8 feet (2.44 m).
- If provided sturdy support, 48-inch (1.22 m) plastic barrier netting, sometimes called snow fencing or mesh fencing, may be used in lieu of wooden barriers.
- Excavations requiring sawhorse-type barricades with flashing lights are
  - any excavation cutting an accepted, established roadway or temporary roadway where vehicles may travel.
- All other excavations may be barricaded with yellow and black fiber barrier tape. Signs will be hung stating the hazard.

4.4.3 Overhead Hazards

These hazards normally include electric service lines, high-voltage lines, cable television, and telephone. Protection of workers while working and digging can be provided by:

- relocation (temporary);
- removal (temporary with alternate source of supply);
- temporary shutdown;
- protective sheathing to prevent contact;
- boom stops on cranes to prevent contact; or
- spotter system.

4.4.4 Surface Hazards

Water runoff, as a result of weather, must not be allowed to enter the trench or excavation. In low-lying areas, berms offering temporary protection until evacuation is completed should be built. Berms also offer protection against construction traffic getting too close to the edge of a trench or excavation. They also serve as a barrier to pedestrian traffic if properly flagged.

Spoil piles must be:

- at least 3 feet (0.91 m) from the edge (preferably more if space permits),
- be sloped at 45□ or less, and
- have all loose material removed from their surface.

Workers directing traffic or exposed to traffic must be equipped with appropriate traffic vests. Proper signage, distances, barriers, and other requirements pursuant to applicable provincial/state DOT and/or local codes must be followed.

4.5 Trench/Excavation Requirements

4.5.1 Underground Installations

- Prior to any underground work, a Excavation/Ground Disturbance Permit, must be completed.
- Determine the estimated location of utility installation, such as sewer, gas, telephone, fuel, electric, and water lines, or any other underground installations that will be encountered during excavation work, before opening an excavation.
- Contact utility companies or owners, advise them of the proposed work, and ask them to establish the location of the utility underground installations before the

start of actual excavation. This does not guarantee the location of all underground installations.

- After each utility identifies the location of their underground installations, and if there is no indication that such installations would pose a hazard to digging in our planned path, contact the land owner and any other feasible source of information and request that they review the planned excavation and proximity to utilities of which they may be aware.
- The use of mechanical excavation equipment must not be allowed within three feet or one meter (unless legislative jurisdictional requirements are more stringent) of the path of an underground installation unless the use of the equipment is under the direct supervision of the owner of the underground installation.
- When utility companies are contacted or notified, use the forms supplied by these companies so that proper notification to their respective personnel can be done appropriately.
- At all times, while the excavation is open, underground utilities must be protected, supported, or removed to safeguard workers from the potential hazards of such underground utilities.
- Digging with mechanical excavation equipment is not permitted until the facility has been exposed to sight:
  - by hand digging; and
  - by a non-destructive technique acceptable to project management.
- The use of mechanical excavation equipment must not be allowed within three feet or one meter (unless legislative jurisdictional requirements or if soil conditions dictate are more stringent) of a buried facility unless the use of the equipment is under the direct supervision of a representative of the owner of the buried facility.

4.5.2 Worker Access

- Where workers are required to enter excavations over 4 feet (1.22 m) in depth, provide ladders or ramps so as to require no more than 25 feet (7.62
- m) of lateral travel.
- Ramps may be used as a means of access only if workers are able to walk the ramp in an upright manner when entering or exiting the excavation.
- Knotted rope lines may not be used to assist workers using sloped areas as access to trenches.
- Riding the bucket of an excavation machine, or use of other lifting equipment as a means of access, is prohibited.

4.5.3 Protection from Loose Rock or Soil

- Scaling to remove loose dirt and material from the sides of the trench or excavation is to be done as often as necessary.
- Other methods may also be used, such as protective barriers in the bottom of the trench, to prevent loose material from striking workers. Chicken wire or chain-link

fencing, plastic mesh material, or other, similar protective devices may line the wall of the slope to stop dislodged or loose material from falling.
- Spoil piles are to be kept back from the trench edge at least three feet or one meter to minimize falling material from entering.

4.5.4 Competent Person Daily Trench & Excavation Inspection
- A competent person must perform a daily documented inspection of all open trenches and excavations.
- Make additional inspections when warranted by storms and other changing conditions.

4.6 Protective Systems

Trenches or excavations more than 5 feet (1.52 m) in depth shall be shored or laid back to a stable slope, or some other equivalent means of protection shall be provided where workers may be exposed to cave-ins. Trenches less than 5 feet (1.52 m) in depth shall also be effectively protected when examination of the ground indicates that hazardous ground movement may be expected.

4.6.1 Sloping/Benching System

The slopes and configurations of sloping and benching systems for excavations 5 feet (1.52 m) to 20 feet (6.1 m) in depth will be selected and constructed by a designated competent person, and will be in accordance with the following requirements:
- A competent person will perform soil analysis. This will consist of at least one visual and at least one manual analysis. Such analysis will be done in accordance with acceptable visual and manual tests or other recognized methods of soil classification. Soils that are clearly identifiable as Type C do not require a manual test.
- Maximum allowable slopes and allowable configurations for sloping and benching systems will be determined in accordance with legislative jurisdictional requirements.

Maximum Allowable Slope

Soil or Rock Type	**(Horizontal: Vertical)**
Stable Rock	Vertical, 90 degrees
Type A	¾ ft : 1 ft, 53 degrees

(0.23 m : 0.30 m)

Type B	1 ft : 1 ft, 45 degrees (0.30 m : 0.30 m)
Type C	1½ ft : 1 ft, 34 degrees (0.46 m : 0.30 m)

Option I

No soil classification is required if 1½ ft : 1 ft (0.46 m : 0.30 m) (horizontal : vertical) or 34-degree slope is used. If a 1½ ft : 1 ft (0.46 m : 0.30 m) (horizontal : vertical) 34-degree slope is not used, a soil classification must be made. The excavation must comply with one of the three following options:

Option II

Designs of sloping or benching systems will be selected by using tabulated data based on soil conditions. A registered professional engineer is to calculate and prepare these tables. This information must be documented, and filed on the site, with the registered professional engineer's stamp on the tables.

Option III

A registered professional engineer must design the sloping and benching system. This information must be documented and filed on the site, with the registered professional engineer's stamp on the plan.

Systems for sloping and benching of excavations in excess of 20 feet (6.1 m) deep must be designed and stamped by a registered professional engineer in the state or province where the work is being performed.

When sloping is chosen as a means of protection, the following guidelines shall apply:

- Option No. 1: The sloping shall not be less than 1.5 - Horizontal to 1 - Vertical unless another option is used.

- Option No. 2: Test and document the soil conditions and design the slope according to applicable legislative jurisdictional requirements. When exercising this option, soil testing must be conducted with adequate frequency to verify that changing soil conditions are fully accounted for and adequate protection is provided.
  - Changing conditions (rain, etc.) may warrant further testing and slope design

adjustments. This will be initiated and evaluated by a competent person.
  - Soil testing and classification is mandatory when Option No. 2 is used and must be conducted by a competent person with the authority to take prompt measures to prevent these hazards.

- Option No. 3: Designs of sloping and benching systems shall be selected from and in accordance with tabulated data. The tabulated data (tables and charts) shall be in written form and include all of the following:
  - Identification of the parameters that affect the selection of a sloping or benching system drawn from such data;
  - Identification of the limits of use of the data, to include the magnitude and configuration of slopes determined to be safe; and
  - Explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data.

- Option No. 4: Designs shall be in written form and shall include at least the following:
  - The magnitude of the slopes that were determined to be safe for the particular project;
  - The configurations that were determined to be safe for the particular project; and
  - The identity of the registered professional engineer approving the design.

Note: the above options have been summarized and do not contain all legislation requirements. Therefore, check local legislation for additional applicable requirements.

4.6.2 Trench Boxes

Portable trench boxes or sliding trench shields may be used for the protection of workers in place of shoring or sloping when properly designed, constructed, and maintained in a manner which will provide protection equal to or greater than sheeting or shoring required for the trench. Manufacturer's specifications for trench boxes and/or sliding shields must be kept at project location(s).

4.6.3 Sheeting or Shoring

Supporting systems shall be designed by a registered professional engineer.

4.6.4 Soil Classification

The classification of soil and rock deposits shall be made based on the results of at least one visual and one manual test to determine soil classification.

- Such analysis shall be conducted by a competent person.

- The competent person may not base a classification of a soil by feeling the strength or composition of the soil with heavy equipment. This is not an acceptable method.
- Each soil and rock deposit shall have been classified by a competent person as either Stable Rock, Type A, Type B, or Type C.
- In a layered system, the system shall have been classified in accordance with its weakest layer. However, each layer may be classified individually where a more stable layer lies under a less stable layer.
- Should any conditions occur that may change the classification in any manner (i.e. rain, traffic vibration), the soil and rock deposits shall have been reclassified as necessary to reflect any changed circumstances.

4.7 Safety Precautions for Excavations and Trenches

- Testing will be performed for oxygen and hazardous atmospheres in excavations and trenches 4 feet (1.22 m) or deeper where the conditions may exist. A competent person will assure that testing is accomplished, engineering controls established, and proper personal protective equipment utilized to protect workers as necessary. Emergency rescue procedure will be established.
- Use ladders in all trenches over four feet (1.22 m) deep for personnel to access and egress from trench safely - one ladder for each 25 feet (7.62 m) of lateral travel. Extend the ladders above the top of the trench 3 feet (0.91m).
- Where crossing bridges are required, crossing bridges shall be wide enough for two people to pass complete with handrails and/or guardrails.
- Do not work so close together in a trench that workers may be struck by tools or materials handled by other workers.
- Where necessary, assign a flagman (c/w warning vest) to warn the workers and the public of the approach of trucks and other construction equipment.
- Watch for signs of cracking, unraveling, undercutting, and bulging of trench walls.
- Be aware of changing site and weather conditions that affect trench stability such as drying of soil or excessive water in the soil.
- At the top of the trench, watch for cracks developing along its length running perpendicular to and with the trench. Place sand on the crack and keep checking it. If it disappears, the crack is growing larger.
- Exercise care in locating excavating equipment. Use mats or heavy planking on soft ground to distribute the load.
- Do not undercut trench sides.
- Where utilities traverse the trench, particularly natural gas and sewer lines, air sampling may be required.
- When excavating in landfills or where other potentially hazardous atmospheres may be encountered, testing must be done to determine contaminants and oxygen deficiency.
- If excavating in hazardous atmospheres, ventilation and other controls such as personal protective equipment (PPE) must be used to reduce contaminants to

acceptable levels.

- Fall protection must be provided around trenches, excavations, caissons, etc. pursuant to applicable regulations.
- Materials and equipment used for fabricating, installation and removal of protective systems must be free from defects and/ or damage.
- Workers must enter, work in and exit only in protected areas.

Regulations Note: It is extremely important to know the federal, provincial and area regulations governing trench and excavation safety. Such laws and regulations cover the erection of physical safeguards to protect workers and the public from injury. Double check the local codes for the area in which the project is located. Have applicable codes and charts available at project site location.

4.72 SJP413: HANDHELD GRINDER USE

Introduction:
This Safe Job Procedure outlines the proper steps for using a handheld angle grinder in compliance with Alberta Occupational Health and Safety Legislation. It is essential to follow these guidelines to ensure the safety of all personnel involved.

Personal Protective Equipment (PPE):
Before operating the handheld angle grinder, ensure that all required personal protective equipment is worn by the operator and any nearby personnel. PPE includes:
- Safety goggles or face shield to protect eyes from debris and sparks.
- Hearing protection to guard against noise exposure.
- Dust mask or respirator, if working in a dusty environment.
- Heavy-duty gloves to protect hands from potential hazards.
- Non-slip, closed-toe footwear for foot protection.

Equipment Inspection:
Before starting any work, inspect the handheld angle grinder to ensure it is in proper working condition. Check for:
- Damage to the tool's housing, handle, and guard.
- Secure mounting of abrasive wheels or discs.
- Properly functioning trigger and safety lock mechanisms.
- Intact power cord and plug (if applicable).

Work Area Preparation:
Clear the work area of any potential hazards and ensure proper ventilation if working indoors. Remove flammable materials, and secure the workpiece to prevent movement during operation.

Electrical Safety:
If using an electric angle grinder, plug it into a grounded outlet with a Ground Fault Circuit Interrupter (GFCI). Avoid using extension cords unless absolutely necessary, and ensure they are rated for the grinder's power requirements.

Guard Adjustment:
Check the grinder's safety guard to ensure it is properly adjusted and securely in place. The guard should provide adequate protection between the operator and the rotating abrasive wheel.

Grinding Wheel Selection:
Select the appropriate type and size of grinding wheel for the specific task. Ensure the wheel is compatible with the grinder and designed for the material being worked on.

Sparks and Debris:
Angle grinding produces sparks and debris. Ensure the work area is clear of flammable materials and that bystanders are at a safe distance.

Dust Control:
If the task generates dust, use appropriate measures to control it. This may include using a dust extraction system or wearing a respirator if necessary.
Cool Down:
After completing the task, allow the grinder to run without load for a short period to cool down the abrasive wheel. Once the wheel is cool, disconnect the grinder from the power source.

Wheel Replacement:
When changing abrasive wheels, follow the manufacturer's instructions for proper removal and installation. Ensure the new wheel is compatible with the grinder.
Cleaning and Storage:
Clean the grinder and work area, removing any debris. Store the grinder in a dry, secure location away from potential damage.
Report any equipment malfunctions, hazards, or near misses to a supervisor or appropriate authority.
Only trained and authorized personnel should operate handheld angle grinders. Proper training should cover equipment usage, hazards, and safe practices.
Emergency Preparedness:
Be aware of the location of emergency shut-off switches, fire extinguishers, and first aid kits in the work area.

Reporting Hazards:
Report any equipment malfunctions, hazards, or near misses to a supervisor or appropriate authority.

Work Procedure:
Follow these steps for safe operation:
- Secure Material from movement in a position and height that appropriate for the work being conducted
- Firmly grasp the grinder with both hands, keeping a stable stance.
- Start the grinder away from the workpiece, allowing it to reach full speed before making contact.
- Hold the grinder at an angle that allows for effective cutting or grinding without excessive pressure.
- Avoid overexerting force on the grinder; let the tool and abrasive wheel do the work.
- Keep a firm grip and maintain control of the grinder throughout the operation.
- Once grinding or cutting is completed disengage the grinder, allow the wheel to fully stop, and disconnect the power.

By following this Safe Job Procedure, you can mitigate risks and ensure compliance with Alberta Occupational Health and Safety Legislation during the use of a handheld angle grinder.

HAZARD	PRE-CONTROL RISK LEVEL	CONTROLS	POST CONTROL RISK LEVEL
Electrical Shock	**3**	Possible Causes: Improper grounding, damaged power cords, exposure to water. Controls: - Ensure the grinder is plugged into a grounded outlet with GFCI protection. - Regularly inspect power cords and plugs for damage. - Keep the grinder and work area dry. Avoid using the grinder in wet or damp conditions.	**1**
Flying Debris and Sparks	**3**	Possible Causes: Grinder wheel disintegration, improper operation, incorrect wheel selection. Controls: - Select the appropriate grinding wheel for the task. - Ensure the wheel is securely mounted and properly adjusted. - Wear safety goggles or a face shield to protect eyes. - Clear the work area of flammable materials and bystanders.	**1**
Noise Exposure	**2**	Possible Causes: High noise levels generated by the grinder. Controls: - Wear hearing protection, such as earplugs or earmuffs, to reduce noise exposure.	**1**
Inhalation of Dust and Particles	**2**	Possible Causes: Dust generated during grinding operations. Controls: - Wear a dust mask or respirator when working in a dusty environment. - Use a dust extraction system if available.	**1**
Vibration Exposure	**2**	Possible Causes: Prolonged use of the vibrating tool. Controls: - Take frequent breaks to reduce prolonged exposure. - Use anti-vibration gloves to minimize vibration impact.	**1**
Burns and Thermal Injuries	**2**	Possible Causes: Contact with heated grinder components, sparks, or abrasive wheel. Controls: - Wear heat-resistant gloves and clothing. - Maintain a safe distance from the heated grinder parts.	**1**

Hand and Arm Fatigue	**2**	Possible Causes: Prolonged use of the grinder without breaks. Controls: - Take regular breaks and stretch to reduce the risk of fatigue and strain. - Must use two hands to operate the grinder for better control and reduced strain on one arm.	**1**
Abrasive Wheel Breakage	**3**	Possible Causes: Use of a damaged or incorrect wheel, excessive pressure on the wheel. Controls: - Inspect the grinding wheel for damage before use. - Use the appropriate type and size of wheel for the task. - Avoid excessive pressure; let the wheel do the work.	**1**
Operator Error	**3**	Possible Causes: Inadequate training, lack of understanding of safe operating procedures. Controls: - Provide thorough training on grinder usage, safety procedures, and potential hazards. - Ensure only authorized and trained personnel operate the grinder.	**1**
Trips and Falls	**2**	Possible Causes: Cluttered work area, improper footing, cords in walkways. Controls: - Maintain a clean and organized work area. - Secure cords and hoses to prevent tripping hazards.	**1**
Fire Hazard	**3**	Possible Causes: Ignition of flammable materials by sparks. Controls: - Complete and Hot Work Permit - Clear the work area of flammable materials. - Have a fire extinguisher readily available.	**1**
Eye Injuries	**3**	Possible Causes: Flying debris, sparks, or particles. Controls: - Wear a face shield and safety glasses/googles at all times. - Ensure bystanders also wear appropriate eye protection.	**1**
Contact with Rotating Parts	**3**	Possible Causes: Hand or clothing getting caught in the grinder. Controls: - Keep hands and clothing clear of the rotating parts. - Maintain a firm grip on the grinder, using both hands.	**1**

Tool Kickback	**3**	Possible Causes: Abrasive wheel binding or jamming during operation. Controls: - Use the proper technique to prevent binding and kickback. - Maintain control of the grinder at all times.	**1**
Lacerations and Cuts	**3**	Possible Causes: Contact with the abrasive wheel. Controls: - Keep hands and body parts clear of the abrasive wheel during operation. - Wear appropriate gloves to protect hands.	**1**
Unintended Operation	**3**	Possible Causes: Accidental start-up or release of the trigger. Controls: - Use the safety lock mechanism when the grinder is not in use. - Disconnect the power source when changing wheels or performing maintenance.	**1**
Lack of Emergency Preparedness	**3**	Possible Causes: Unavailability of emergency shut-off switches, fire extinguishers, first aid kits. Controls: - Ensure that emergency shut-off switches, fire extinguishers, and first aid kits are easily accessible and known to all personnel.	**1**

4.73 SJP414: MOVING LARGE FURNITURE

Objective:

To ensure the safe and efficient movement of large and heavy office furniture, with a focus on injury prevention and teamwork.

Preparation:

1. Identify the furniture to be moved and assess its weight and dimensions.
2. Ensure that the pathway is clear of obstacles and that there is enough space for the furniture to be maneuvered.

Equipment:

1. Lifting straps with shoulder harness
2. Personal Protective Equipment (PPE): Steel-toed boots, and gloves

Team Composition:

A team of four workers is required for the move.
- Workers 1 & 2: Positioned on opposite ends of the furniture's length (designated as front and back for the move).
- Workers 3 & 4: Positioned on opposite ends of the furniture's width (designated as left and right sides for the move).

Procedure:

1. Briefing:

- Conduct a pre-move briefing with the team to discuss the plan, roles, and potential hazards.
- Ensure that all team members are aware of the weight, dimensions, and any specific characteristics of the furniture.

2. PPE Check:

- Confirm that all team members are wearing appropriate PPE, including steel-toed boots, and gloves.

3. Lifting Straps Setup:

- Lay the lifting straps flat on the ground, ensuring there are no twists or knots.
- Position the lifting straps under the length and width of the furniture, making sure they are centered and securely in place.

4. Team Positioning:

- Workers 1 and 2 should position themselves at the front and back of the furniture, ready to lift with shoulder straps on.
- Workers 3 and 4 should position themselves at the left and right sides of the furniture, also ready to lift with shoulder straps on.

5. Lift Preparation:

- In unison, all team members should bend their knees, keeping their backs straight.
- On a designated signal, lift the furniture using the lifting straps, ensuring a synchronized and controlled lift.

6. Lifting and Moving:

- Maintain communication throughout the move, alerting the team to any obstacles or changes in direction.
- Move slowly and steadily, avoiding sudden movements or jerks.
- If necessary, take short breaks to rest and reassess the team's grip and that the lifting straps remain adjusted properly.

7. Arrival at Destination:

- Upon reaching the destination, lower the furniture gently and place it in the desired location.
- Ensure all team members are clear before releasing the furniture.

8. Post-Move Inspection:

- Inspect the lifting straps for any signs of wear or damage.
- Conduct a post-move debriefing to discuss the process, noting any improvements or issues for future reference.

Emergency Procedures:

- In the event of an emergency or if any team member is struggling, stop immediately and assess the situation.
- Call for assistance if needed, and follow established emergency procedures.

Note:

Always prioritize safety and communication during the move. If at any point the team feels that the move is unsafe, stop and reassess before continuing.

4.74 SJP501: BOILER PRECISION TUNE-UP

Please review this step-by-step procedure carefully to acquaint yourself with safe operation procedures associated with this job task. When in doubt, ask your supervisor.

1. Complete hazard assessment.
2. Make call for heat at thermostats and check system for proper operation/ verify boiler pressure. Check pumps with Spinner (magnetic field tester) or with multi-meter (Amp clamp). Check zone valves/ Indicator tab on normally closed.
3. Check safety on boiler/ high limit turn down test- boiler fires past 140F and turn down to make sure burners turn off below set point. Inspect air switch lines for blockage and pinch off to make sure circuit is interrupted. Press low water cut off test button if present and burners should cut out. Push paddle on flow switch if present and burners should cut out. Check settings in operating control. Visually inspect wiring
4. Turn boiler off at switch or panel. If pilot present, perform drop out test: Blowout pilot and count to 180 sec. Check water feed/ manual feed tripped. Check expansion tank, pressure check 12psi. Check relief valve, manually trip
5. Check combustion air / intake hood is clear and free of debris. Also check if exhaust in the mechanical room is clear. Visually inspect the boiler system and make note of any leaks. Isolate gas and pull burners and pilot assembly
6. Inspect heat exchanger line passages with camera and check for blockages. Clean burners with compressed air and or vacuum. Clean pilot assembly with compressed air and or vacuum. Clean flame rod if present. Clean combustion chamber with compressed air and or vacuum
7. Reinstall burners and pilot assembly. Turn gas on and check for leaks with an approved leak detector. Relight pilot at this time. Check manifold pressure with monometer at gas valve and adjust if needed. Turn boiler back on and allow it to operate normally for 10 minutes. Connect combustion analyzer to venting system and perform analysis
8. Take water sample from tapping on boiler system. Check for glycol levels with a refractometer. Check ph. level with a lithium strip. Check TDS with a TDS tester. Check moly and post chemicals. Fill out a boiler-hydronic heating report.

HAZARDS	RANK	CONTROLS
Burns	2	Wear gloves, long sleeves, and FR clothing
Electrical Shock	2	De-energize and lock-out equipment while work is be conducted. Keep body parts away from live circuits when conducting diagnostics and testing.
Cuts	2	Wear Gloves
Debris in Eyes	2	Wear Safety Glasses

References;

Boiler Manufacturer's Operator's Manual

4.75 SJP502: FURNACE PRECISION TUNE-UP

GENERAL

- Servicing of a furnace is one of the most common jobs performed by service companies, many potential hazards can exist.

BEFORE STARTING THE SERVICE

- Be aware that gas, both low and high voltages are all present;
- Be careful from hot surfaces, sharp edges, dark, tight and/or restrictive spaces, low head room and poor housekeeping;
- Locate both gas and electrical shut offs; and
- Before servicing test for power at the unit, after shutting off the electricity.

DURING THE SERVICE

- Test as many components as possible with the power shut off, and panels in place;
- While testing components with the electricity on, take due care that you will not touch any live wires, moving parts or hot surfaces;
- Be aware that older appliances may not be equipped with up to date safety shut-offs on either the electric side or gas; and
- Complete a combustion analysis on the system to ensure proper combustion and heat exchanger integrity.

AFTER SERVICING

- Ensure that the site is left safe with power and gas turned on, use approved gas leak detector or soap to test the gas.

HAZARDS	RANK	CONTROLS
Burns	2	Wear gloves, long sleeves, and FR clothing
Electrical Shock	2	De-energize and lock-out equipment while work is be conducted. Keep body parts away from live circuits when conducting diagnostics and testing.
Cuts	2	Wear Gloves
Debris in Eyes	2	Wear Safety Glasses

4.76 SJP503: AIR CONDITIONER PRECISION TUNE-UP

GENERAL

- Potential hazards can exist while servicing an air conditioning unit. Potential hazards range from electricity to refrigerant that is under pressure, moving parts, hot or sharp edges.

BEFORE STARTING THE JOB

- Locate the electrical disconnect or circuit breaker;
- Identify refrigerant present in the system and know the operating pressures; and
- Identify possible hazards: weather, bushes/branches, sloped ground, slippery surfaces or obstructions around the unit.

DURING THE JOB

- Quickly hook up the refrigerant hoses with the unit shut off and gloves on;
- Inspect as much of the unit as possible with the power off;
- While testing with power on be careful not to touch live wires, be careful of high refrigerant pressures.

AFTER THE JOB

- Ensure that the electrical is turned back on, and the site is safe from hazards. Seal and tighten refrigerant cap to prevent leakage.

HAZARDS	RANK	CONTROLS
Frostbite	2	Wear gloves and long sleeves
Electrical Shock	2	De-energize and lock-out equipment while work is be conducted. Keep body parts away from live circuits when conducting diagnostics and testing.
Cuts	2	Wear Gloves
Debris in Eyes	2	Wear Safety Glasses

4.77 SJP504: FURNACE NO HEAT

EVALUATING THE CUSTOMER COMPLAINT

- Talk to the customer before starting the job to try to figure out a possible problem with the appliance before starting the job.

BEFORE STARTING THE JOB

- Locate the power and gas shut offs; and
- Locate any possible hazards that may harm the service technician like, sharp edges, hot surfaces, dark or confined spaces, poor housekeeping.

DURING THE JOB

- If possible test any components with the power shut off and the appliance panels in place.
- When testing a motor be careful of hot or sharp surfaces, or possible shorts in the motor.
- When testing control boards or electrical pieces, be careful of loose wires. Be aware of what voltage you are working on either low or high and check for shorted connections.
- When testing gas controls, check for any gas leaks.
- When replacing a part after it is determined to be faulty, shut off the power and gas to the unit, and test that the power is truly off.

AFTER SERVICING

- Ensure site is left safe with the power and gas turned back on, no gas leaks (use approved gas leak detector or soap) and no loose wires.

HAZARDS	RANK	CONTROLS
Burns	2	Wear gloves, long sleeves, and FR clothing
Electrical Shock	2	De-energize and lock-out equipment while work is be conducted. Keep body parts away from live circuits when conducting diagnostics and testing.
Cuts	2	Wear Gloves
Debris in Eyes	2	Wear Safety Glasses

4.78 SJP505: AIR CONDITIONER NO COOLING

EVALUATING THE CUSTOMER COMPLAINT

- Talk to the customer prior to commencing work to try to determine a possible problem.

BEFORE STARTING THE JOB

- Locate the electrical disconnect, if none is present locate the circuit breaker;
- Before testing, check which refrigerant is equipped with the unit and know its operating pressures;
- Check for any loose or shorted wires;
- Check for any debris stuck in the condenser fan;
- Check for any obstructions around the unit; and
- Observe outside weather conditions.

DURING THE JOB

- Carefully turn on the A/C unit after hooking up gauges and having the Amperage meter hooked up, making sure the power can be turned off quickly if need be.
- Try to test as many components as possible with the power off.
- Quickly and carefully hook up the refrigerant hoses.
- When testing control boards, or other electrical pieces, be careful of loose wires. Know what the voltage is you are working on, watch for shorted connections.
- After finding a problem, shut off the power to the unit before continuing.

AFTER SERVICING

- Ensure that the site is left safe with the power back on and no loose electrical connections.

HAZARDS	RANK	CONTROLS
Frostbite	2	Wear gloves and long sleeves
Electrical Shock	2	De-energize and lock-out equipment while work is be conducted. Keep body parts away from live circuits when conducting diagnostics and testing.
Cuts	2	Wear Gloves
Debris in Eyes	2	Wear Safety Glasses

4.79 SJP506: HEAT EXCHANGER REPLACEMENT

EVALUATING THE JOB

- Two people are required for lifting, removal and replacement.

BEFORE STARTING THE JOB

- Locate and shut off electrical and gas to the appliance; and
- Make sure there is no tripping hazards, no head or hand hazards between the appliance and the heat exchanger outside of the house.

DURING THE JOB

- Be careful removing and replacing the heat exchanger not to pinch or cut fingers; and
- Make sure all parts are reinstalled properly with tight connections and tight and tested gas connections before turning the unit back on.

AFTER THE JOB

- Ensure site is left clean and safe with the power back on.

HAZARDS	RANK	CONTROLS
Electrical Shock	2	De-energize and lock-out equipment while work is be conducted. Keep body parts away from live circuits when conducting diagnostics and testing.
Cuts	2	Wear Gloves
Debris in Eyes	2	Wear Safety Glasses

4.80 SJP507: BOILER REPLACEMENT

STEP 1: Start workday following company stretching guide. Collect all paperwork for the quoted job from the office, verify the quote is signed and discuss the job with your supervisor. Collect the materials needed that is listed on the detailed material list.

STEP 2: Arrive on the job site and inspect the work area identifying any hazards. If there are any serious hazards these need to be addressed and discussed with your supervisor or safety dept. Complete the hazard assessment on the bottom of your job card.

STEP 3: Advise customer of your proposed work schedule and plan and discuss any issues they may have. Lay out drop sheets and clear area to work. Check all PPE to make sure it is in safe working order.

STEP 4: Isolate power from existing system and lock out the breaker if required, isolate gas and cap. Isolate water feed to system and drain. Remove old equipment, pipe work and clean up job site so it is ready for the new equipment to be installed.

STEP 5: Unpack and inspect new boiler, check for damage. Install new boiler as per manufacturer's instructions, including gas supply and venting to meet all local codes.

STEP 6: Install system pipe work as per the quote including zone valves, pumps and plate heat exchangers. Wire system, zone valves and pumps. Fill system with water checking for any leaks and remove all air from system.

STEP 7: Follow appliance start up procedure as per manufacturer's instructions; record all results in paperwork provided by manufacturer. Walk through the job with the customer and advise of system operation answering any questions they may have.

STEP 8: Clean the job site and remove all garbage. Leave all appliance documents on site with customer and make sure they are fully satisfied with the job. Report back to office to advise you have completed the task.

HAZARDS	RANK	CONTROLS
Electrical Shock	2	De-energize and lock-out equipment while work is be conducted. Keep body parts away from live circuits when conducting diagnostics and testing.

Cuts	2	Wear Gloves
Sprains/Strains	2	Use mechanical devises or a helper to move/lift heavy items

4.81 SJP508: HOT WATER TANK REPLACEMENT

1. Before you start – Why are you changing the hot water heater?
   a. It has been overheating. Over heated water could flash to steam.
   b. It has been back-drafting. Possible carbon monoxide.
   c. It has been leaking. Possible contact with electricity.
   d. Gas smell. Possible leak.

2. Use floor protection (drop sheets) leading to the mechanical room.

3. Put on Personal Protective Equipment (PPE).

4. Fill out Hazard Assessment on your invoice.

5. Turn gas, electrical and water OFF.
   Note: Open a faucet to release pressure in the hot water heater.

6. Connect drain hose and drain the tank. Cut hot and cold water supplies and venting.

7. Turn gas off at the isolation valve and remove pipe work.
   Note: Gas pipework must be isolated and capped off when not connected to a fixture.

8. With the assistance of a second worker, take the new hot water tank into the house and into the basement using a fridge cart.

9. Remove old tank from mechanical room to Company truck. Be careful for water leaks from the old tank which could cause a slip hazard.

10. Reinstall existing gas line to the new hot water tank and test joints with leak detector.

11. Re-pipe water lines to hot water tank.
    Note: Clean pipe with sand cloth and fittings with fitting brushes and apply solder paste.

12. Solder new joints.

13. Reinstall venting and screw in place with drill.
    Note: Cutting with aviation snips may be required

14. Fill new tank with water and check for leaks.
    Note: Bleed air through relief valve or bathroom faucet.

15. Light the new hot water heater pilot and soap test from the gas valve to the pilot.

16. Turn on the gas valve burner and observe flame. Soap test from gas valve to main burner.
    Note: This pipe work only has gas pressure when the main burner is on.

17. Allow tank to heat up to temperature and shut off. Make sure faucet temperature and gas valve temperatures are the same.
    Note: Homes with young children or people with special needs may require a lower setting

18. Test that the chimney is drafting properly with a smoke pen

19. Confirm all valves and power has been turned back on.

20. Run hot water at several faucets to ensure the tank has shut off at temperature.

21. Clean up the worksite and return all tools and drop sheets to the Company truck.

22. Take the customer to the hot water heater location and orientate them on how to light the pilot and how to adjust the water temperature.

23. Complete the invoice.
Note: Include the model # and serial # of the old hot water heater and new the hot water heater.

24. Collect Payment.

HAZARDS	RANK	CONTROLS
Electrical Shock	2	De-energize and lock-out equipment while work is be conducted. Keep body parts away from live circuits when conducting diagnostics and testing.
Cuts	2	Wear Gloves
Sprains/Strains	2	Use mechanical devises or a helper to move/lift heavy items Warm up and stretch before starting work. Take micro stretch breaks as needed.
Burns/Fire	2	Follow hot work procedures. Wear Gloves

4.82 SJP509: CHIMNEY LINER INSTALLATION

Workers accessing a roof MUST be trained in the proper care, inspection and use of personal fall protection equipment.

STEP 1: Complete hazard assessment contained on your job card. Fill out Fall Protection Plan prior to beginning work at height. (See Fall Protection Code Of Practice in Safety Manual)Examine the existing chimney to determine the nature of work to be conducted and tools needed.

STEP 2: Survey roof and yard from outside to determine what hazards are present (work at height, power lines, trees, uneven ground, snow/ ice).

STEP 3: Remove ladder from truck with partner and set against house on hard level ground. Secure ladder to house with rope or bungee cord. Put all tools in a bucket tied to a rope.

STEP 4: Put on harness and climb ladder. Find a secure location either on the ground or on the roof to anchor fall restraint rope. Pull tools up to roof and perform work. Ensure spotter /assistant is trained and on the ground ensuring safety of worker on roof .

HAZARDS	RANK	CONTROLS
Fall from Height	3	Train in Fall Protection Complete Fall Protection Plan Inspect all Equipment Prior to Use
Cuts	2	Wear Gloves
Sprains/Strains	2	Warm up and stretch before starting work. Take micro stretch breaks as needed.

4.83 SAFE JOB PROCEDURE REVIEW

Safe Job Procedure Reviewed: _____

Date: _____

Reviewed By: _____

Comments: _____

SECTION FIVE: Codes of Practice

5.1 CONFINED SPACE CODE OF PRACTICE

PURPOSE
To define a Companywide code of practice which will ensure the safety of workers who enter a confined space and meet requirements of Alberta's Occupational Health and Safety Act, Regulation and Code. Should Legislation requirements change they shall take precedence over this Code. Exceptions to this Standard and/or Company Wide Code of Practice must be approved by ARPI'S INDUSTRIES LTD Safety Department.

INTRODUCTION
The entry of confined spaces is a necessary part of the day-to-day operations of ARPI'S INDUSTRIES LTD. Entries are required for inspections; maintenance; repairs and cleaning; construction activities or any other similar operations which are done as a part of the daily and ongoing operation of the plant sites and facilities.

Unplanned and/or uncontrolled confined space entries can potentially be extremely hazardous to the health of those attempting to execute them.

The practice outlined herein is viewed as a means of protecting the health of the individual by significantly reducing the risk of accidental injury associated with entering confined spaces, and to make the employee aware of the hazards associated with the work and the safe practices necessary to deal with these hazards.

Understanding and applying the Health and Safety principles are fundamental to the proper implementation of this code of practice. It identifies the maintenance required of ongoing programs to ensure the safety and health of all workers and reduce the probability and magnitude of incidents in and around confined spaces at ARPI'S INDUSTRIES LTD main office as well as all jobsites.

Each Department shall develop and regularly audit its own specific standards to ensure that such standards meet the needs of their specific work place and comply with the Code and all applicable Legislative safety requirements.

SCOPE
This Code of Practice applies to all employees of ARPI'S INDUSTRIES LTD, and its subcontractors.

ACCOUNTABILITY
1. In accordance with O.H. & S. Act (Chapter 0-2, 2000) all workers are responsible for protecting the health and safety of themselves and other workers.

2. Where a confined space is to be entered by workers the supervisors are responsible to ensure that:
   a) Adequate steps have been taken to eliminate/control all hazards present.
   b) All applicable Legislative requirements, this Code of Practice and any other facilities specific standards, rules, procedures, and practices are followed

CONFINED SPACE CODE OF PRACTICE BASICS

Training

ROLE OF EMPLOYER

1. An employer must ensure that a worker assigned duties related to confined space entry is trained by a competent person in:
    a) Recognizing hazards associated with working in confined spaces.
    b) Performing the worker's duties in a safe and healthy manner.

2. An employer must keep records of the training given under subsection 1.

3. An employer must ensure that competence in the following is represented in the workers responding to a confined space emergency:
    a) First aid.
    b) The use of appropriate emergency response equipment.
    c) Procedures appropriate to the confined space.

CONFINED SPACE DEFINITION

1. Confined Space means an enclosed or partially enclosed space, not designed or intended for continuous human occupancy, having restricted means of entry or exit that may become hazardous to a worker entering it due to:
    a) Its design, construction, location, work activities or atmosphere.
    b) The materials or substances in it.
    c) The provision of first aid, evacuation, rescue or other emergency response service is compromised; or any other hazards relating to it.

2. Examples of confined spaces may include (but are not limited to):
    a) Crawlspace
    b) Ducts
    c) Excavations
    d) Air Handling Units
    e) Pipelines
    f) Piping Systems
    g) Boilers
    h) Shafts
    i) Utility manholes
    j) Vessels

RESTRICTED SPACE DEFINITION (NEW)

(Occupational Health and Safety Code 2009 Explanation Guide):

Like confined spaces, restricted spaces have a limited means of entry and exit. Entry points may not be designed for easy walk in. Other limitations include access by ladders or by stairways that provide poor access because of steep slope, narrow width or extreme length. Physical obstructions such as bulkheads, collapsed material, or machinery may impede exit. Limited means of entry and exit can make escape or rescue difficult. A "restricted space" is an enclosed or partially enclosed space, not intended for continuous human occupancy that has a restricted, limited or impeded means of entry or exit because of its construction. It can be thought of as a work area in which the only hazard is the

difficulty of getting into or out of the space. All other hazards are either non-existent or have been eliminated or controlled as required by Part 2.Restricted spaces are therefore not subject to the permitting, atmosphere testing and tending worker requirements of a confined space. Employers and workers must be mindful that a restricted space can become a confined space if conditions or work practices change. Employers who voluntarily apply relevant sections of ANSI Z117.1-2003, *Safety Requirements for Confined Spaces*, might refer to restricted spaces as "non-permitted confined spaces".

EXAMPLES OF A RESTRICTED SPACE INCLUDE

a) an electrical or communication utility vault,
b) a building crawl space,
c) a trench with a temporary protective structure, and
d) a deep excavation requiring ladder or lift access.

Despite being classified as a restricted space, the following requirements of Part 5 Confined Spaces, continue to apply to workers entering a restricted space:

A hazard assessment must be performed prior to entry — section 45; workers assigned duties related to the entry must be trained to recognize hazards and how to perform their duties in a safe and healthy manner — section 46;

General safety requirements involving the use and availability of safety, personal protective, and emergency equipment, as well as a communication system — section 48;

Prevention of unauthorized persons entering a restricted space — section 50; protection of workers from hazards created by traffic in the area of the restricted space — section 51;

Workers cannot enter or remain in a restricted space unless an effective rescue can be carried out — section 55;

A competent worker, designated by the employer, must be in communication with the worker(s) inside a restricted space — section 56; and

A safe means of entry and exit must be available to all workers required to work in the restricted space — section 57.

HAZARD ASSESSMENT

Note: On small or large jobsites <u>all</u> confined spaces that our employees may work in will need to be identified. These will be assessed and categorized by class A, B or C and a log will be kept of all confined spaces on the site. This log will need to be updated as the job progresses and new confined space areas are created or sealed up.

1. If a worker will enter a confined space to work, a competent person(s) will be assigned to prepare a written, dated document which will:
   a) Identify existing or potential hazards to which the worker is likely to be exposed while in the confined space.
   b) Specify the type and frequency of inspections and tests necessary to determine the likelihood of worker exposure to any of the identified hazards.
   c) Specify who will perform the inspections and tests identified.
   d) Specify the safety and personal protective equipment required to perform the work.
   e) Identify the personal protective equipment and emergency equipment to be used by a worker who undertakes rescue operations in the event of an accident or other emergency.
   f) Identify emergency evacuation and communication requirements.

Note: Where reasonably practical, affected workers shall be involved in the hazard assessment and in the control or elimination of the hazards identified.

SAFETY AND PROTECTION

Employers Responsibility

1. An employer must ensure that:
   a) The safety and personal protective equipment required is available to workers entering a confined space.
   b) A worker who enters, occupies or leaves a confined space uses the safety and personal protective equipment.
   c) The personal protective, emergency and rescue equipment required is available to workers undertaking rescue operations in a confined space.
   d) A communication system is established that is readily available to workers in a confined space and is appropriate to the hazards.
   e) Workers in a confined space are protected from hazards created by traffic in the vicinity of the confined space.
   f) Workers affected by the hazards identified in the hazard assessment report will be informed of the hazards and the methods used to control or eliminate the hazards.

2. An employer must ensure that all personal protective equipment (PPE), and emergency equipment required for use in a confined space is inspected by a competent person before workers enter the confined space to ensure the equipment is in good working order.
   a) Each employee is responsible for inspection of his/her basic PPE, documentation of inspection will be recorded on a sign out list.
   b) Employer shall ensure specialized PPE and emergency equipment will be inspected and maintained as per manufacturer's specifications, and a record shall be kept by the responsible Department.

3. An employer must ensure that written records of the inspections required by legislation are retained.

PROTECTION – HAZARDOUS SUBSTANCES AND ENERGY

An employer must ensure that workers within a confined space are protected by means of positive isolation against the release of hazardous substances or energy that could harm them.

1. An employer must ensure that a worker does not enter a confined space unless adequate precautions are in place to protect a worker from drowning, engulfment or entrapment.

TESTING THE ATMOSPHERE

If the hazard assessment identifies a potential atmospheric hazard and a worker is required or authorized by an employer to enter the confined space, the employer must ensure that a competent worker performs a pre-entry atmospheric test of the confined space to:

a) Verify that the oxygen content is between 19.5 percent and 23 percent by volume.
b) Identify the amount of toxic substance.
c) Identify the amount of flammable or explosive substance that may be present.

1. The employer must ensure that the testing required is performed using calibrated test instruments appropriate for the atmosphere being tested and the instruments are used in accordance with the manufacturer's specifications.

2. The employer must ensure that as often as necessary after the first time a worker enters the confined space, a competent worker:
   a) Performs and records the tests, and
   b) Identifies and records any additional hazards.

3. If tests identify additional hazards, the employer must control or eliminate the identified hazards. Any additional hazards identified must be included in the original hazard assessment.

VENTILATION AND PURGING

1. If the atmospheric testing identifies that a hazardous atmosphere exists or is likely to exist in a confined space, an employer must ensure that the confined space is ventilated, purged or both before a worker enters the confined space.

2. If ventilating or purging a confined space is impractical or ineffective in eliminating a hazardous atmosphere, the employer must ensure that a worker who enters the confined space uses personal protective equipment appropriate for the conditions within the confined space.

3. If mechanical ventilation is needed to maintain a safe atmosphere in a confined space during the work process, an employer must ensure it is provided and operated as needed.

4. If mechanical ventilation is required to maintain a safe atmosphere in the confined space, the employer must ensure that:
   a) The ventilation system incorporates a method of alerting workers to a failure of the system so that workers have sufficient time to safely leave the confined space, and
   b) All workers must evacuate a confined space or use an alternative means of protection if a

ventilation system fails.

INERTING

1. An employer must ensure that a confined space is inerted if it is not reasonably practicable to eliminate an explosive or flammable atmosphere within the confined space through another means. If a confined space is inerted, an employer must ensure that:
   a) Every worker entering the confined space is equipped with supplied air respiratory protection equipment.
   b) All ignition sources are controlled.
   c) The atmosphere within the confined space stays inerted while workers are inside.

CLASSIFICATION OF CONFINED SPACE LEVELS

To reflect the relative hazards, and to ensure a consistent approach, confined space entries have been classified into Class A, Class B, and Class C. The classification of entry shall be based on the conditions present at the time of entry with consideration for potential changes of conditions as identified in the hazard assessment.

Note: As per OH&S Code Part 10-162(1) a person must not enter or work at a work area if more than 20 percent of the lower explosive limit of a flammable or explosive substance is present in the atmosphere.

Class A:

1. A confined space will be considered Class A if the entry is either the first or initial entry or *any* of the following applies:
   a) The hazards in the confined space or in its proximity are either not known or have not been determined.

2. The hazards in the confined space include one or all of the following:
   a) Oxygen concentration is less than 19.5% or more than 23% by volume.
   b) Explosive or flammable atmosphere between 10% and 20% Lower Explosive Limit ("LEL").
   c) The area atmosphere exceeds the protective limits of air purifier respiratory equipment.

3. Classified area:
   a) Will require an approved hazard assessment.
   b) Supplied breathing air available and worn.
   c) All Entrants and Monitors must be trained in the use of supplied breathing air equipment.
   d) A Confined Space Monitor in attendance at all times.

A Specific Rescue Plan Which Has Been Reviewed and Approved:

a) A valid Confined Space Entry Permit.
b) A valid Class A Entry Tag hung at each entrance.
c) An Evacuation Procedure.

NOTE: Any time a Class A entrance is left unattended the entrance must be barricaded physically and a "Danger, Do Not Enter" sign hung at the entrance.

4.2 Class B

1. A confined space will be considered Class B if all identified hazards are controlled and the following applies:
   a) Oxygen concentration is between 19.5% and 23% by volume; and

2. Either of the following exists or is likely to exist:
   a) Explosive or flammable atmosphere, less than 1% of the Lower Explosive Limit (of 10% LEL).
   b) Or the concentration of toxic substances exceeds 50% of the Occupational Exposure Limit ("OEL").

3. The following controls must be put in place for a "Class B" classified area:
   a) Will require an approved hazard assessment.
   b) A Confined Space Monitor in attendance at all times
      a. (see note below).
   c) A valid Confined Space Entry Permit.
   d) A valid Safe Entry Tag hung at each entrance.
   e) An Evacuation Procedure.
   f) A valid Rescue Plan.

4.3 Class C

1. A confined space will be considered "Class C" if all identified hazards are controlled, the potential for change is unlikely, and *all* of the following apply:
   a) Oxygen concentration is between 19.5% and 23% by volume.
   b) Concentration of explosive gases is less than 1% of LEL
   c) Airborne concentration of toxic substances is less than 50% of OEL.

2. The following controls must be put in place for a "Class C" classified area:
   a) Will require an approved hazard assessment. A Confined Space Monitor may be required. A valid Confined Space Entry Permit.
   b) A valid Safe Entry Tag hung at each entrance.
   c) An Evacuation Procedure.
   d) A valid Rescue Plan.

NOTE: If the hazard assessment determines that a Confined Space Monitor is not required at the point of entry, a competent worker must be designated to be in communication with worker(s) in a confined space. (e.g. – co-worker, buddy system). The entry log must still be maintained.

ENTRY PERMIT SYSTEM

Entry Permit

1. A person must not enter a confined space without a valid entry permit.

2. An employer must establish an entry permit system for a confined space that:
   a) Maintains a list of the names of each worker who enters the confined space.
   b) Gives the location of the confined space.
   c) Specifies the time during which an entry permit is valid.
   d) Takes into account the work being done in the confined space.
   e) Takes into account the code of practice requirements for entering, being in and leaving a confined space.
   f) Ensures all required documents are collected and maintained for retention.

3. An employer must ensure that, before a worker enters a confined space, an entry permit is properly completed, signed by a competent person and a copy kept readily available at the confined space location.

SIGNAGE FOR CONFINED SPACE

Whenever an entrance to a confined space is left unattended 3 types of signs are used as indications of the status of the space and the requirements for entry.

DANGER, DO NOT ENTER: This sign overrides all other signs at entrances to confined spaces. When it is placed NO ONE is to enter the space under any circumstances. This sign will be placed if an event occurs that could compromise the conditions in a confined space.

a) If entry is required Operations personnel must be contacted to evaluate the situation, test the atmosphere of the space, and remove the sign if everything meets the standards to enter and work. Monitor personnel are the only ones allowed to remove this sign.
b) For Class A entries the "DANGER, DO NOT ENTER" sign must be hung at the entrances every time the space is left unattended.

CONFINED SPACE MONITOR SYSTEM

This sign is used to signify that a space is safe to enter PROVIDED that the people authorized to enter have a valid permit to work and that there is a Confined Space Monitor present at the entrance when they enter. This sign can be removed by the Confined Space Monitor provided all the permit criteria are met and the Safe Entry Tag is valid and current. When the Confined Space is left unattended, provided the status of the confined space has not changed, this sign must be hung at the entrance by the Confined Space Monitor when leaving.

1. This sign must be used on a Class C entry, where a Confined Space Monitor is not required, to indicate that although there is a Safe Entry Tag on it, the space can only be entered with a valid permit.

CONFINED SPACE MONITOR

Class A & B Entry

1. For every Class A and B confined space entry, a Confined Space Monitor will be assigned

2. The Confined Space Monitor will:

a) Be capable and equipped to summon rescue personnel, if required. A means of communication is mandatory.
b) Be in communication or visual contact with personnel inside the confined space at all times.
c) Initiate evacuation as necessary, and ensure proper signage is posted at the entrance (s) to the confined space.
d) NEVER leave the entry to the confined space with people inside unless properly relieved by another certified monitor.
e) NEVER enter the confined space for any reason.
f) After verifying all personnel have exited the confined space, ensure correct signage is in place prior to leaving the confined space entrance(s) unattended. (e.g. breaks and end of shift)
g) Control the number of personnel allowed in the confined space, as identified by hazard assessment.
h) Maintain a Confined Space Entry and Exit log for the duration of the job. Entry and exit logs must be safely stored for record retention purposes.
i) Ensure Entry and Exit points are kept clear and clean.
j) Maintain awareness of potential hazards in the vicinity of the confined space that may affect the health and safety of the worker(s) inside.

Class C Entry

Class C Entries may require a Confined Space Monitor, as determined by the hazard assessment. If a Confined Space Monitor is not deemed necessary a competent worker is designated by the employer must be in communication with the worker (s) in a confined space.

NOTE: On small or large jobsites all confined spaces that our employees may work in will need to be identified. These will then be assessed and categorized by class A, B, or C and a log will be kept of all confined space areas are created or sealed up.

ENTRANT TRACKING

For all Class A and B entries, and when there is a Confined Space Monitor on a Class C entry, all personnel who enter the confined space will sign in the Confined Space Log.

1. Personnel are expected to enter and leave a confined space by the same entrance.
2. If this is not possible, then they must return to their point of entry to sign out on the Confined Space Log and inform the Confined Space Monitor as soon as they exit the confined space.

Note: This tracking method is not required when all personnel are visible at all times.

EMERGENCY RESPONSE RULES

1. An employer must ensure that a worker does not enter or remain in a confined space unless an effective rescue can be carried out.

2. A worker must not enter or stay in a confined space unless an effective rescue can be carried out.

3. An employer must ensure that the emergency response plan includes the emergency procedures to be followed if there is an accident or other emergency, including the procedures in place to evacuate the confined space immediately.
   a) When an alarm is activated.
   b) If the concentration of oxygen inside the confined space drops below 19.5 % by volume or exceeds 23 % by volume, or:
   c) If there is a significant change in the amount of hazardous substances inside the confined space.

4. An employer must ensure that an effective means of communication is in place to summon emergency response.

RETAINING RECORDS

1. An employer must ensure that all records with respect to entry and work in a confined space, including entry permits, safe entry tags and entry/exit logs are retained for not less than:
   a) 1 year if no incident or unplanned event occurred during the entry; or
   b) 2 years if an incident or unplanned event occurred during the entry.

Type of Space	Location	Hazards & and Assessed Level A, B, or C	Date Assessed	Permit Req. yes/no

CONFINED SPACE ENTRY/EXIT LOG

Job Site:_____ Confined Space Permit Number: _____

Work Description: _____ Confined Space Location:_____

Safety Watch: _____ Is air testing being done? Yes No

If yes by whom? _____

Date M/D/Y	Time of Air Test	Results of Air Test Note: testing to be done before Every/re-entry to confined spaces.	Name of worker entering Confined Space	Time of Entry	Time of Exit	Signature

PERMIT #: _____

CONFINED SPACE ENTRY PERMIT

Date of Issue: _____ Time Issued: _____ Location #: _____

Department: _____ Confined Space Identifier: _____

Description of Work: _____

PRE-ENTRY PREPARTION

	Yes	No		Yes	No		Yes	No
Contents removed/purged	☐	☐	Vessel depressurized	☐	☐	Ventilation Required	☐	☐
Electrical lockout complete	☐	☐	Warning signs needed	☐	☐	Type: _____		
Mechanical lockout complete	☐	☐	Sloping/shoring needed	☐	☐	_____		
Blinding/blanking complete	☐	☐	Other area affected by work	☐	☐	Rescue plan in Place	Yes	No
Equipment blocked/drained	☐	☐	Area roped off	☐	☐	Other: _____		

ADDITIONAL PERSONAL PROTECTIVE EQUIPMENT

	Yes	N/A		Yes	N/A		Yes	N/A
Hearing	☐	☐	Fire-resistant clothes	☐	☐	Rubber gloves	☐	☐
Monogoggles	☐	☐	Rubber suit	☐	☐	Safety harness & lifeline	☐	☐
Face shield	☐	☐	Rubber boots	☐	☐	Other _____		

_____

Air purifying respirator ☐ ☐ Type: _____

Atmosphere supply respirator ☐ ☐ SCBA ☐ Worn ☐ Standby ☐

HOT WORK

Nature of Hot Work: _____

Type of Fire Protection: _____

Special Precautions: _____

	Yes	N/A		Yes	N/A	
Fire watch required	☐	☐	Monitor for ½ hour after work is complete	☐	☐	Name: _____
Combustibles removed	☐	☐	All wall, floor & sewer opening covered	☐	☐	
Fire extinguishers & hoses in good working order	☐	☐	**LEL MUST REMAIN BELOW 10% FOR HOT WORK TO CONTINUE.**			

GAS TESTING REQUIREMENTS

Continuous ☐ Intermittent ☐ Interval: _____

SPECIAL INSTRUCTIONS:

_____

SAFETY WATCH I have been informed of and trained in my duties and understand my responsibilities.

_____	_____	_____	_____
Name of Safety Watch	Signature	Date	Time

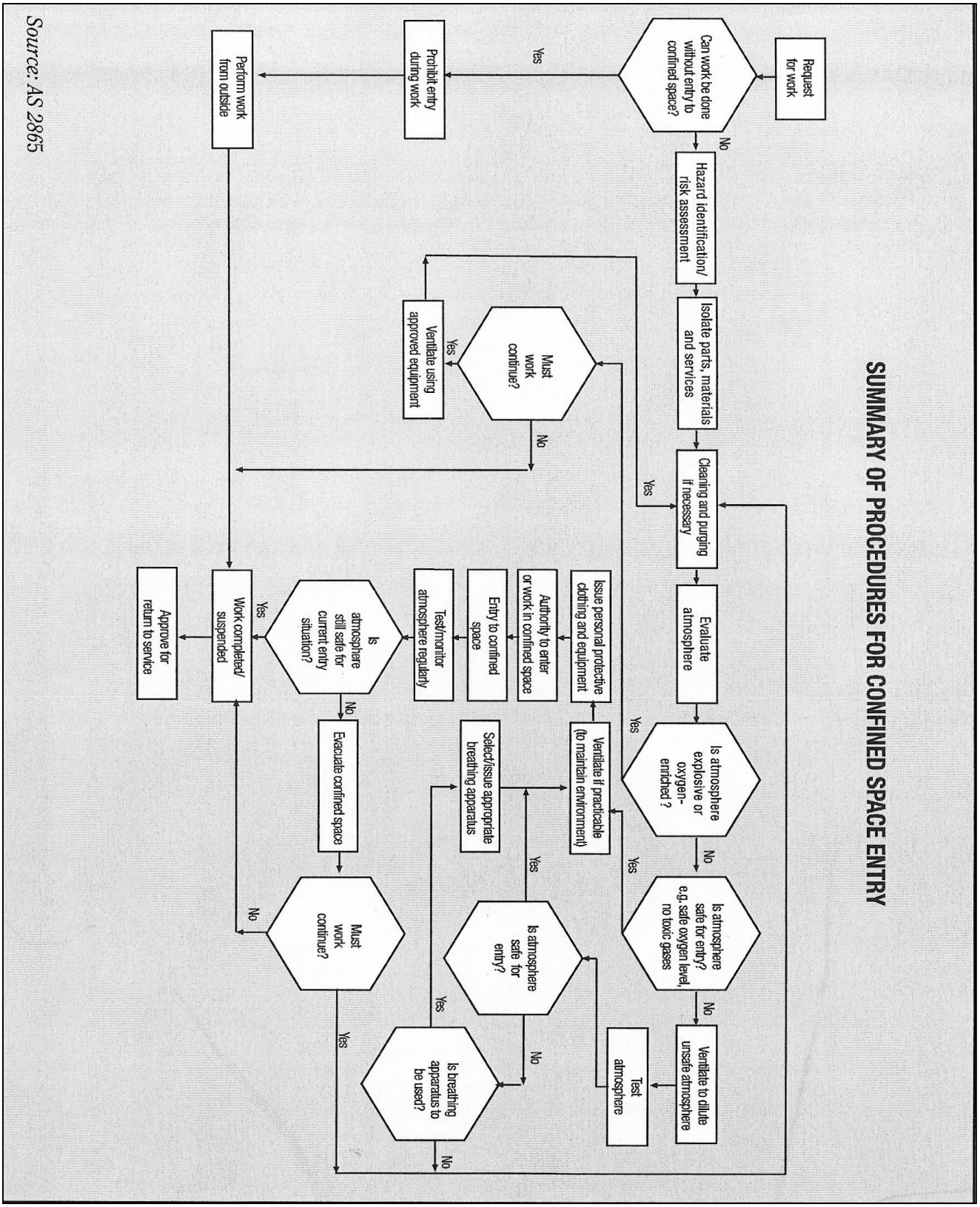
AGREEMENT

I understand the nature and extent of the work and will comply with all conditions & precautions to be followed in completing the work.

Employee Name	Signature	Date	Time
_____	_____	_____	_____

The area is safe for entry and work as outlined above and I authorize this work.

Entry Supervisor_____Date: _____ Time: _____


SUMMARY OF PROCEDURES FOR CONFINED SPACE ENTRY
Request for work
Can work be done without entry to confined space?
Yes
No
Prohibit entry during work
Perform work from outside
Hazard identification/ risk assessment
Isolate parts, materials and services
Must work continue?
Yes
Ventilate using approved equipment
No
Cleaning and purging if necessary
Yes
Evaluate atmosphere
Is atmosphere explosive or oxygen-enriched ?
Yes
Ventilate if practicable (to maintain environment)
No
Is atmosphere safe for entry? e.g. safe oxygen level, no toxic gases
Yes
Issue personal protective clothing and equipment
Authority to enter or work in confined space
Entry to confined space
Test/monitor atmosphere regularly
Is atmosphere still safe for current entry situation?
Yes
Work completed/ suspended
Approve for return to service
No
Evacuate confined space
Must work continue?
No
Yes
Select/issue appropriate breathing apparatus
Is atmosphere safe for entry?
Yes
No
Is breathing apparatus to be used?
Yes
No
No
Ventilate to dilute unsafe atmosphere
Test atmosphere
Source: AS 2865

DANGER

DO NOT ENTER!!

CONFINED SPACE MONITOR AND PERMIT REQUIRED FOR ENTRY

CONFINED SPACE LIST

Construction Industry
Caissons
Box Beams
Sewers
Pits
Trenches
Excavations
Crawl Spaces

Food & Similar Products
Retorts
Tubs and Kettles
Basins
Cold Rooms
Ovens
Flour Bins
Air Scrubbers
Batch Cooker
Caustic soda Tanks
Clay Hoppers
Conditioners
Continuous Cookers
Extractors
Heated Lard Tanks
Heated Sugar Bins
Holding Bins
Hydrogenators
Metal Bins
Meat Dryers
Mixers
Tallow Tanks

Textiles
Bleaching Ranges
J-Boxes
Kiers
Die Kettles
Bale Presses
Dye Becks
Sizing Tanks
Steam Boilers

Electronics Industry
Degreasers
Gas Cabinets
Dust Collectors
Tunnels

Paper & Pulp
Chip Bins
Barking Drums
Rag Cookers
Acid Towers
Digesters
Beaters
Hydropulpers
Stock Chests
Adhesive Tanks
Bleach Tanks
Chip Silos
Furnaces
Machine Chests
Mix Tanks
Resin Tanks
Clay Mix Tanks

Rubber Products
Solvent Tanks
Shredders
Furnaces
Ovens
Mixers

Petroleum & Chemicals
Reactors
Storage Tanks
Distillation Columns
Cooling Towers
Dike Areas
Fire Water Tanks
Precipitators
Scrubbers
Crystallizers
Spray Dryers

Leather Products
Dye Vats
Tanning Tanks
Sludge Pits

Machinery
Boilers
Conveyors
Dust Collectors
Tunnels

Stone, Clay Glass & Concrete Products
Kilns
Aggregate Bins
Cement Silos
Crushers
Dryers
Hoppers
Mills
Sand Bins

Primary Metal
Blast Furnaces
Cupolas
Coal bins
Coke Bunkers
Annealing Furnaces
Slag Pits
Water Treatment Tanks
Submarine Cars
Gas Holders
Soaking Pits
Acid Pickling Tanks
Plating Tanks

Fabricated Metals
Paint Dip Tanks
Degreasers
Caustic Cleaning Tanks
Drying Ovens
Shot Blasting Enclosures
Enclosed Assemblies
Sludge Tanks

Electric, Gas & Sanitary Services
Cable Vaults
Manholes
Meter Vaults
Transformer Vaults
Bar Screen Enclosures
Chemical Pits
Incinerators
Pump Stations
Regulators
Sludge Pits
Wet Wells
Digesters
Grease Traps
Lift Stations
Sewage Ejector
Storm Drains

5.2 FALL PROTECTION CODE OF PRACTICE

OBJECTIVE

To prevent fall hazards for employees who are required to work or be exposed to elevations that have a potential for falls.

Employees working at elevations greater than four feet in a permanent structure (finished edge) or greater than ten feet where there is a potential for injury from falls, must use Fall Protection measures.

These include:

1. Establishing walls, floors and or guardrails.
2. Using work platforms and/or aerial lifts.
3. Operational changes/engineering controls.
4. Restrict workers travel.
5. Use of Fall Arrest/Restraint Equipment.
6. Control Zones
7. Safety monitor systems.
8. Danger Zones.

GENERAL REQUIREMENTS

Fall protection system will be used when work is being done at a place; from which a fall of 3 meters (10 feet) or more may occur, or:

1. Where a fall from a less height may result in an unusual risk or injury; for example, from a fall when working machinery that is in operation.

2. When practical for the work process, guardrails, barriers or other similar means of fall restraint will be used.
   a) Use methods acceptable to Occupational Health and Safety regulations (i. e. guardrails).

DEFINITIONS--- Measurements and weights are shown in both metric and imperial due to foreign workers prevalent in the construction industry. Some key definitions are:

Fall Arrest System: a system that will stop worker's fall before the worker hits the ground.

Fall Protection System: any of the following when used to protect a worker from a fall or minimize the risk of falling. (i. e. guardrails, safety belt, harness or related equipment, safety net, a control zone, or a safety monitored zone with approved procedures).

Personal Fall Protection System: an individual worker's fall protection system composed of a safety belt or full body harness, lanyard, lifeline, and any other connection equipment that is used to secure the worker to an individual anchor or to a horizontal lifeline system.

Permanent Anchors: must be rated for a minimum of 16 KN (3600 lbs.)

Temporary Anchors: must be rated for a minimum of 3.5 KN per worker (786 lbs.)
Unusual Risk of Injury: means, with respect to the risk of injury from a fall, there is a risk of injury greater than the risk of injury from impact on a flat surface; example, from a fall onto operating machinery or into a tank of chemical.

Control Zone: means the area between an unguarded edge of a building or structure and a line, which is set back a safe distance.

Safety Monitor System: means a system in which a trained worker is designated to monitor work activities in a control zone to ensure that work is done in a manner that minimizes the potential for a worker to fall.

Danger Area: means elevator shafts, scaffolding, slab edge, rooftops, and other tops, as well as any other area where it is possible to fall ten (10) feet or more. The Danger Area extends 8 feet back from any unprotected edge plus the height of any elevated work platform such as stilts or a ladder. Example: A worker on 2 foot high stills is in the danger area within 10 feet from an unprotected edge. Any worker within the danger area must have fall protection.

GUARDRAILS
Guardrails must meet the design requirements of provincial regulation.
Please refer to "Part 22 – Guardrails, section 315 (1) to 315 (3) " of the Alberta OH & S Code

1. When a guardrail must be removed to accommodate work:
   a) Only that portion of the guardrail necessary to allow the work to be done may be removed and, the area around the removed guardrail is to be danger taped off.
   b) Workers must use another fall protection system when the guardrail is absent.

2. The guardrail must be replaced;
   a) When the unguarded area is left unattended, at any time and
   b) After work is completed if the circumstances still require guardrails.

3. Standard guardrails should be installed:
   a) Where any open-sided floor, work platform, runway, walkway or balcony 1.22 meters (4 feet) or more above grade or floor levels.

GLASS HAZARD
Guardrails shall be installed across glass panels, the lower edges of which are less than 76 cm (30") above the levels of stair tread nosing, ramps, platforms, or landings. The exception is where laminated, wired or tempered glass is installed having strength equivalent to a guardrail.

Specifications for standard guardrails:
A standard guardrail shall consist of a top rail, approximately 107 cm (42") above the floor level, a toe board as required by regulation, and an intermediate rail centered at approximately the midpoint of

the space between the underside of the top rail and the upper edge of the toe board. The top and intermediate rails and toe board shall be supported by vertical members spaced not more than 3 meters (10 ft.) apart. Where the guardrails are of wooden construction the top rail shall be securely fastened to the top of the upright or at the top of the upright on the side facing the protected area and the intermediate rail shall be securely fastened to the side facing the protected area.

SAFETY HARNESSES

A worker must wear a full body harness when using personal fall protection for fall arrest. Refer to CSA standard Z259.10-06, Full Body Harnesses

CONNECTING EQUIPMENT

When a tool is used that could sever, abrade or burn a lanyard or safety strap, the lanyard or safety strap must be protected from abrasion or made of wire rope unless the worker is working near an energized conductor or in another work area where conductive lanyard or safety strap cannot be safely used, in which case two nonconductive lanyards or safety straps must be worn, or other effective means of worker protection used.

GUARDRAIL REMOVAL PROCEDURES

Prior to removing a guardrail, a worker must be protected by Fall Protection Equipment.

1. When a guardrail must be removed to accommodate work, it is to be removed in such a way that will not damage the rails.
   a) Only that portion of the guardrail necessary to allow the work to be done may be removed, and
   b) Workers exposed to a fall hazard must be protected by another Fall Protection System when the guardrail is absent.

2. A control zone may be established if the working surface:
   a) Does not have a slope exceeding 4 vertical in 12 horizontal,
   b) Is not on skeletal structure work.

3. The width of the Control Zone must be at least 6.5 feet back from the leading edge and clearly marked with a raised warning tape.

4. Workers will at all times, remain further from the unguarded edge than the width of the Control Zone, no other Fall Protection system need be used.

5. The guardrail must be replaced:
   a) When the unguarded area is left unattended and
   b) After the work is completed, if the circumstances still require guardrails.

SNAP HOOKS

Snap hooks on lanyards and safety straps must be self-locking, to prevent roll-out hazard.

FALL PROTECTION SYSTEM

Fall protection (Restraint) is rigged to allow the movement of employees only as far as the sides and edges of the walking/working surface. Anchorage points used for fall restraint have been confirmed to be capable of supporting four times the intended load, with a minimum strength requirement of 3.5 kilo Newtons per worker attached.[Part 9- Anchor Strength Temporary 152.1(1)]

1. Work within the confines of a perimeter (standard) guardrail.

2. Wear an approved body belt (CSA Z259.1-05, restraint only) or full body harness (CSA Z259.10-06) attached to securely rigged restraint lines where:
   a) Body belt and/or harness conform to CSA Standard Z259.1 – 05 & Z259.10-06
   b) Rope-grab devices must be used in accordance with manufacturer's recommendations and instructions.

3. Confirm all restraint components are compatible.

4. Inspect fall restraint components before each use for wear, damage and other deterioration. Remove defective components from service when the component's function strength has been adversely affected.

5. Clip restraint lines, independently of other lines, to the anchorage points. (One restraint line per anchor point.)

FALL ARREST

Employees exposed to a free fall distance of 3 meters (10 feet) or more (without restraint) must wear fall arresting equipment, using a full body harness system.

1. Inspect components of the fall arrest system before each use for wear damage and other deterioration. Defective components are removed from service when the components function or strength has been adversely affected.

2. Fall arrest equipment must meet the minimum criteria:

3. Hardware used must be drop-forged, pressed or formed steel, with corrosion resistant finish, with surfaces and edges smooth to prevent damage to the attached body harness or lanyard.

4. Vertical lifelines must have a minimum tensile strength of 2449 kg (5400 lbs.).

LIFELINES MUST BE ENGINEERED TO:

1. A minimum tensile strength capable of supporting a fall impact load of at least 2449 kg (5400 lbs.), when tying off anywhere along the length of the lifeline.

2. Lanyards must have a minimum tensile strength of 2449 kg (5400 lbs.), and recommend an energy absorbing device.

3. Body harness components must comply with respective CSA and ANSI standards.

4. Secure full body harness systems to anchorage points capable of supporting 5000 lbs.

5. Protect safety lines and lanyards against cuts or abrasion.

6. Limit the free fall distance (trough rigging) to a maximum of 1.2 meters (4 feet).

7. Only one employee may be attached to any one vertical lifeline.

8. Connect only one snap hook to any one D-ring.

9. Snap hooks must not be connected to one another.

10. Remove body harness components from service immediately if a fall or impact loading occurs.

11. Removed components may not be reused unless they are inspected by an engineer and determined to be suitable for reuse.

VERTICAL LIFELINES

1. A vertical lifeline will:
a) Be made of synthetic fiber rope or wire rope, and
b) Have a breaking strength specified by the manufacturer of at least 26.7 kn (6000 lbs.)

2. A vertical lifeline will be free of knots or splices except at its termination.

3. A termination knot or splice must not reduce the strength of the life line to less than 22 kn (5000 lbs.).

A vertical lifeline will be effectively protected at points of attachment and elsewhere, as necessary, to prevent chafing or abrasion caused by contact with sharp or rough edges.

When a tool is used that could sever, abrade or burn a lifeline, the lifeline will be protected from such abrasion or made of wire rope unless the worker is working near an energized electrical conductor or in other work where a conductive lifeline cannot be used, in which case other effective means for protection of the worker must be used.

A vertical lifeline must extend to within 1.2 meters (4 feet) of ground level or other safe lower surface. Unless previously authorized, the suspended length of a vertical lifeline must not exceed 91 meters (300 feet) in length. A personal fall arrest system must limit the free fall of a worker to 1.2 meters (4 feet). A

vertical lifeline must be installed and used in a manner that minimizes the swing-fall hazard (see attached).

Each vertical lifeline used for fall arrest must be secured to an independent point of anchorage. Only one worker may be attached to any one vertical lifeline.

INSPECTION & MAINTENANCE

1. Safety belts, harnesses, lanyards, lifelines, anchors and other similar devices will be :
   a) Inspected by a qualified person on each shift before use.
   b) Kept free from substances and conditions that could contribute to their deterioration.
   c) Maintained in good working order.

2. A device or part that is defective in conditions that could contribute to their deterioration.

3. After any personal fall protection equipment has arrested the fall of a worker, it must:
   a) Be removed from service.
   b) Not be returned to service until has been inspected and re-certified for use by the manufacturer or it authorized agent, or by a professional engineer.

RESCUE

An employer must develop a fall protection plan if a worker at the work site may fall 3 meters(10 Feet) or more and the worker is not protected by guardrails.

A fall protection plan must specify

a) The fall hazards at the worksite
b) The fall protection system to be used at the worksite
c) The anchors to be used during the work
d) That clearance distances have been taken into account and will not allow a worker to strike the ground or an object or level below the work area
e) The procedures used to assemble, maintain, inspect, use and disassemble the fall protection system, where applicable, and
f) The recue procedures to be used if a worker falls and is suspended by a personal fall arrest system or safety net and needs to be rescued.

Remember: Our first line of defense for Fall Protection is Guardrails. The last options, with the exception of other procedures acceptable to the responsible government Health and Safety Administration are the control zone and safety monitor system.

CONTROL ZONE

A Control Zone is a well-defined area, marked at a minimum of 2 meters (6 ½ feet) back from any leading edge. A Control Zone can be used as a temporary warning until guardrails or other fall protection is installed.

1. The width of a Control Zone must be at least 2 meters (6 ½ feet) back from the unguarded edge.
2. If workers will at all times remain further from the unguarded edge than the width of the control zone, no further fall protection need be used.
3. If a worker is working within 2 meters of the control zone a raised warning line marking the edge of the control zone is required.

The Warning Line must be:

1. A line of high visibility,
2. Or a line flagged or clearly marked with high visibility material at intervals not exceeding 2 meters (6 ½ feet).
3. Must be between 0.85 m and 1.15m (34 and 45 inches) above the working surface.
4. Additional distance must be added if the working surface is slippery sloped, the work is carried out at an elevation relative to the unguarded edge, and the risk is increased by the use of equipment near the control zone.

The use of the Control Zone is not allowed if:

1. The working surface has a slope in excess of 4 vertical to 12 horizontal.
2. Is on a skeletal structure.
3. For installation or removal of scaffolding.

Use of a Control Zone is not permitted as the Fall Protection system when:

1. On a working surface where the shape of that surface exceeds four vertical in twelve horizontal.
2. On a skeletal structure work.
3. For scaffold erection and removal.

SAFETY MONITOR SYSTEM

A safety monitor system uses a set of monitoring procedures assigned to a competent person for warning workers who are unaware of fall hazards or are acting in an unsafe manner. A safety monitor system, used in conjunction with a controlled access zone and a fall protection plan is appropriate in situations, where other options of fall protection are impractical.

The safety monitor is responsible to insure all activities performed inside the control zone are completed in accordance with the fall protection plan.

REQUIREMENTS

1. The monitor must be experienced and trained.
2. Must be present whenever workers are in the control zone.
3. Must have complete authority.
4. Is not engaged in any other activities.
5. Is situated so that there is a clear view of the work being done.
6. Is able to speak to the workers in a normal voice, does not have to yell.
7. Be wearing clothing that distinguishes the monitor from other workers
8. The fall protection plan for work must specify the name of the monitor and detail their training.

RESPONSIBILITIES

1. **Project Superintendent**

   It shall be the responsibility of the Project Superintendent to ensure:

   a) That the Fall Protection Plan is developed on all projects under his supervision and that they meet the above policy criteria.
   b) That all workers on the project that require a Fall Protection Plan are trained in proper execution of the plan
   c) That copies of training documentation are forwarded to the Project Manager.

2. **Site Safety Coordinator**

   a) Ensure the training documentation is kept on file for all employees that receive Fall Protection Training.
   b) Report to the Project Superintendent any unsafe acts or conditions relating to this policy.

3. **Foreman/Supervisor/Sub-Contractors**

   a) Ensure all workers under his authority receive Fall Protection training from a qualified individual.
   b) Ensure training documentation is forwarded to the Project Superintendent.
   c) Ensure that the required safety equipment is available.
   d) Ensure that required safety is regularly inspected and maintained.
   e) Provide to the Project Superintendent, an inventory of fall protection equipment available in his area of authority.
   f) Ensure all workers under his/her authority adhere to the project Fall Protection Plan and Procedures.

4. Workers –see section 141(2) for training requirements in Alberta OH & S Act, Regulation & Code

   a) Receive training in and adhere to the project fall Protection Plan and Procedures.
   b) Report to the Foreman/Supervisor any non-compliance of the Fall Protection Plan and Procedures.

DANGER AREAS

Fall restraint equipment will be CSA and ANSI approved and will not allow the worker to reach the point of fall. Lanyards must be attached to a poured concrete portion of the site structure or to lifelines, which are attached to a poured concrete portion of the site structure. Where it is not feasible to use "Fall Restraint" equipment in a danger area for instance, when work must be done on the unguarded edge, properly constructed scaffolding should be used.

Prefabricated scaffolding shall be erected by qualified workers and shall be erected as designed by the manufacturer. They shall not be erected with any modifications, defects, or defective parts.

Where it is not feasible to use scaffolding, "Fall Arrest" equipment may be used. "Fall Arrest" equipment shall be CSA and ANSI approved and not allow the worker to fall more than 4 feet. One worker per lanyard or safety line.

Materials and tools being stored must be 10 feet back from the edge except for tools being used and working amounts of materials. Proper lift ropes and containers are to be used for hoisting tools and equipment.

The danger zone beneath overhead workers shall be barricaded off to protect other workers and the public from the possibility of falling tools and equipment. If it is not feasible to barricade as above, a watchman/monitor will be posted.

The "Project Fall Protection Plan" shall be posted for all workers to see and should be the subject of safety meetings.

PPE – CARE OF BODY BELTS, HARNESSES AND LANYARDS
(Taken from Canadian Center for Occupational Health and Safety, ISSN 0835-8184)

Equipment:
1. INSPECT your equipment daily.
2. REPLACE defective equipment immediately
3. REPLACE any equipment involved in a fall. Refer any questionable defects to a trained inspector.

Webbing (body belts, harness or lanyard):
1. INSPECT entire surface of webbing for damage. Beginning at one end, bend the webbing in and inverted "U" hold the body of the belt towards you; grasp the belt with your hands six to eight inches apart
2. WATCH for frayed edges, broken fivers, pulled stitches, cuts or chemical damage. Broken webbing strands generally appear as tufts on the webbing surface.
3. REPLACE according to manufacturer's guidelines

Buckle:
1. INSPECT for loose, distorted or broken grommets. Do not cut or punch additional holes in waist strap or strength members.
2. CHECK belt without grommets for torn or elongated holes, which could cause the buckle tongue to slip.
3. INSPECT the buckle for distortion and sharp edges. The outer and center bards must be straight. Carefully, check corner and attached points of the center bar. They should overlap the buckle form and move freely back and forth in their sockets. The roller should turn freely on the frame
4. CHECK that rivets are tight and cannot be moved. The body side of the rivet base and outside rivet burr should be flat against the material.
5. INSPECT for pitted or cracked rivets, which indicate chemical corrosions.

Rope:
1. ROTATE the rope lanyard and inspect from end to end for fuzzy, worn, broken or cut fibers. Weakened areas have noticeable changes in the original rope diameter.

2. REPLACE when rope diameter is not uniform throughout.

Hardware:

1. INSPECT hardware for cracks and other defects. Replace the belt if the "D"- ring is not at a 90 degree angle and does not move vertically independent of the body pad or "D" saddle.
2. INSPECT tool loops and belt sewing for broken or stretched loops.
3. CHECK bag rings and knife snaps to see that they are secure and working properly. Check tool loop rivets. Check for thread separation or rotting, both inside and outside the body pad belt.
4. INSPECT snaps for hook and eye distortions, cracks, corrosion, or pitted surfaces. The keeper (latch) should not be distorted or obstructed. The keeper spring should exert sufficient force to close the keeper firmly.

Safety Strap Inspection:

1. Basic care prolongs the life of the unit and conditions to its performance.
2. Keep DRY belt and other equipment away from heat, steam and out of long periods of sunlight.
3. STORE in a clean, dry area, free of fumes, sunlight or corrosive materials.

Nylon and Polyester:

1. WIPE off all surface dirt with a sponge dampened in plain water. Rinse sponge and squeeze it dry. Dip the sponge in a mild solution of water and commercial soap or detergent. Work up a thicker lather with a vigorous back and forth motion.
2. RINSE webbing in clean water.
3. WIPE the belt dry with a clean cloth. Hang freely to dry, but away from excessive heat.

Cotton

1. CLEAN like nylon. For heavy dirt or grease, soak belts in a solution of one tablespoon of grease cutter to one gallon of water. Consult supplier. After soaking, rinse again; then hang to dry.

FALL PROTECTION WORKPLAN

1. Project:_____
2. Location:_____
3. Job #:_____
4. Effective Dates:_____
5. Description of work to be done:_____

6. Hazards
7. Max Fall Distance:_____
8. Clearance Distance Calculation:
   Connector Length + Height of Worker + Shock Absorber Extension + Safety Factor(3 ft.)
9. Weather: Cold / Heat / Wind / Rain / Snow / Ice / Mud / Thunder Storm / Not Applicable(Indoors)
   (Circle appropriate condition)
10. Other (Describe):_____

11. Controls – Fall Protection Equipment List

(list all equipment. Include the make and model and type of equipment i.e Harness, Lanyard, Retractable)

Make/Model	Type of Equipment	Inspected
		Yes / No
		Yes / No
		Yes / No
		Yes / No
		Yes / No
		Yes / No
		Yes / No
		Yes / No
		Yes / No
		Yes / No
		Yes / No
		Yes / No
		Yes / No
		Yes / No
		Yes / No

12. Describe the Anchors to be used during this task:

13. Do the conditions of nature of this task require any special procedures that must be used for the assembly/disassembly of the fall protection system. If yes please describe:

EMERGENCY RESCUE PLAN

Specifically describe the job specific rescue procedures to be used in the event that a work falls in their harness. A viable means of rescue must be available on the jobsite at all times during work at height. All members of the work crew must have the ability to contact emergency services if required.

If worker suffers from suspension trauma (if suspended for 10 minutes or more they may experience suspension trauma as blood flow to the legs is constricted by the harness and blood will pool in the legs). Ensure the worker is removed to a safe area where they can be placed in a sitting position for at least 10 minutes to allow blood from their legs to work its way slowly back into the workers system. If a worker suffering from suspension trauma is laid flat, the blood from the legs can flow too rapidly to the upper body causing severe injury or death. Maintain verbal communication with worker until the paramedics arrive. Do not allow the worker to fall asleep!

5.3 RESPIRATORY CODE

ARPI'S INDUSTRIES LTD is committed to promoting the health, safety and well-being of its employees as well as providing a safe and healthy building environment in which to conduct activities, in accordance with ARPI'S INDUSTRIES LTD Health, Safety & Environmental Policy.

ARPI'S INDUSTRIES LTD will meet or exceed the legislated requirements made under the Alberta Occupational Health and Safety Act, Regulation and Code.

ARPI'S INDUSTRIES LTD is committed to the protection of workers from occupational hazards, including the Potential health risks associated with exposure to airborne contaminants. Our goal is the control of airborne contaminants by accepted engineering and work practice control measures. When effective engineering controls are not feasible, or while they are being instituted, appropriate respiratory protection must be used. Personal Protective Equipment (PPE), including respirator protection, is normally the last resort in minimizing the hazards of airborne contaminants.

The Respiratory Protection Program includes the following elements:

- Hazard identification, assessment and control.
- Types of respiratory protection equipment.
- Selection of respiratory protection equipment.
- Use, care and maintenance of respiratory protection.
- Fit Testing and Training requirements.
- Emergency Response procedures.
- Communication plan for occupants and others in the building.
- Worker health assessment.
- Documentation.

HAZARD IDENTIFICATION, ASSESSMENT AND CONTROL

A written hazard assessment must be completed, communicated and understood by all individuals involved in the work area. The written hazard assessment is important to determine if respiratory protection is needed and the selection of the correct type.

The hierarchy of controls will dictate the controls needed to minimize the hazard. Engineering controls are the preferred control method to eliminate or minimize the risk of airborne hazards. Personal Protective Equipment (PPE), like respiratory protection, is normally the last resort in minimizing the hazards of airborne contaminants.

AIRBORNE HAZARDS

Respiratory hazards may include airborne contaminants such as dusts, mists, fumes, and gases, or oxygen-deficient atmospheres. While there are many non-occupational sources of airborne contaminants, there are also many materials that become airborne in an occupational setting. Inhalation is generally the most significant route of entry for toxic materials in most workplaces. Specific airborne hazards that workers are exposed to will vary and depend upon their occupation.

Airborne hazardous materials can be separated into 4 different classifications:

1. Particulates/aerosols (solid particles, dusts, fibers, mists, droplets, fumes)
2. Gases and/or vapors (gaseous contaminants, vapors)
3. Oxygen-deficient atmospheres (containing less than 19.5 % oxygen).
4. Combination (any combination of particulates, gases, and/or vapors, including oxygen deficient atmospheres)

HAZARD ASSESSMENT AND CONTROL

Hazard assessment is a formal process for identifying all existing and potential hazards at a work site and then determining the degree of danger (the risk) the hazards pose to workers.

Hazards can be classified into the following categories:

1. Physical hazards - lifting, slipping & tripping, fire electricity, noise working at heights, moving parts of machinery etc.
2. Chemical hazards - solvents, acids, epoxy paint, cleaners etc.
3. Biological hazards - tissues, bacteria, blood and body fluids etc.

All categories should be considered for inclusion in the hazard assessment.

Once workplace hazards have been identified and rated, hazard controls must be put in place to reduce the risk workers face from exposures to the hazards.

In general terms there are three types of controls available to reduce the risk due to exposure to hazards and they are listed here in the appropriate hierarchy:

First: **Engineering Controls**
Second: **Administrative Controls**
Third: **Personal Protective Equipment (PPE)**

Sometimes a hazard cannot be adequately controlled by a single type of control (engineering, administrative or PPE). A combination of these methods may be required to effectively control the hazard.

ENGINEERING CONTROL METHODS

Engineering control measures remove or reduce the hazard by initial engineering design specifications or by applying methods of substitution, isolation or ventilation. Well designed and maintained engineering controls are the preferred methods of controlling worker exposure to hazardous contaminants in the air.

Engineering control methods include:

- Mechanical ventilation.
- Adding clean air to oxygen-deficient space.
- Enclosure or Isolation of the process or work equipment.

- Proper control and use of process equipment.
- Process modifications including substitution with less hazardous materials where possible.

FUME HOOD AND LOCAL EXHAUST SYSTEMS

Local exhaust ventilation, like fume hoods, canopy hoods, slot hoods and other local exhaust systems are an important technique for controlling worker exposures to airborne contaminants.

ADMINISTRATIVE CONTROL METHODS

Administrative controls may be used in addition to engineering controls. Administrative control methods minimize worker exposure by scheduling reduced work times in contaminant areas, good work practices and worker training. Appropriate training includes hazard recognition and work practices specific to the worker's job that can assist in reducing exposures. These control measures have many limitations since the hazard is not eliminated or removed. Administrative controls are not generally favoured because they can be difficult to implement, maintain, and are not reliable.

PERSONAL PROTECTIVE EQUIPMENT

Protective equipment may only be used where airborne hazards cannot be eliminated or sufficiently reduced with engineering or administrative controls. Respirators are the least satisfactory means of exposure control because they only provide good protection if they are properly selected, fit tested, worn by the workers, and replaced when their service life is over. In addition, some workers may not be able to wear a respirator due to health or physical limitations. Respirators can also be cumbersome to use and hot to wear, and they may reduce vision and interfere with communication.

Despite these difficulties, respirators are the only form of protection available in the following situations:

- During the installation or implementation of feasible engineering and work practice controls.
- In work operations, such as maintenance and repair activities for which engineering and work practice controls are not yet sufficient to reduce exposure to or below the Occupational Exposure Limit (OEL).
- In emergencies.

Personal protective equipment can be used in conjunction with engineering controls and other methods of control to minimize potential exposures.

Every worker in an area with airborne contaminants that are or may potentially be over 50% of the Occupational Exposure Limit must wear appropriate personal protective equipment. Workers must use:

- Appropriate respiratory protective equipment .
- Protective clothing (laboratory coats, Tyvek suits etc) to reduce the risk of contaminating street clothing, skin and hair.
- Other protective equipment such as eye protection, hard hats, hearing protection and steel toe footwear as site conditions, regulations, or the hazard assessment requires.

The supervisor must ensure that personal protective equipment provided to workers will not cause medical problems (e.g. latex allergies, breathing difficulties).

TYPES OF RESPIRATORY PROTECTIVE EQUIPMENT

Respiratory protective devices can be described based on their capabilities and limitations and places in three classes:

- Self-Contained Breathing Apparatus (SCBA)
- Air-Supplying Respirators
- Air-Purifying Respirators

Self-Contained Breathing Apparatus (SCBA)

The self-contained breathing apparatus (SCBA) provides respiratory protection against gases, vapors, particles and an oxygen deficient atmosphere. The wearer is independent of the surrounding atmosphere because the breathing gas is carried by the wearer. SCBA may be used in IDLH (immediately dangerous to life and health) situations and oxygen-deficient atmospheres either as escape-only devices or for entry into and escape from these atmospheres.

There are two major types of SCBAs:

1. Closed-Circuit SCBA
2. Open-Circuit SCBA

Closed-Circuit SCBA

In a closed-circuit SCBA, all or a percentage of the exhaled gas is scrubbed and re-breathed. Closed-circuit SCBAs are designed to provide 30 minutes to 4 hours of service.

Open-Circuit SCBA

In an open-circuit SCBA, the exhaled breath is released to the surrounding environment rather than being re-circulated. The breathing gas is generally compressed breathing air. Typically they are designed to provide 30-60 minutes of service. Only full-face piece, pressure demand (positive pressure) SCBAs are approved for immediately dangerous to life and health (IDLH) atmospheres.

Escape SCBA

Some SCBAs are designed for escape only and are similar in design to the closed-circuit and open-circuit SCBA types. Their time of use tends to be shorter, typically 5, 7, or 10 minutes. Escape-only units CAN NOT be used to enter into a hazardous atmosphere.

Air-Supplying Type

Air-supplying types of respirators provide a respirable atmosphere to the wearer, independent of the ambient air. The breathing source is supplied from an uncontaminated source through a hose connected to the wearer's face piece or head enclosure from a compressor or compressed air cylinders. These devices may only be used in non-IDLH atmospheres or atmospheres in which the wearer can escape without the use of a respirator. If the air supply fails, the wearer may have to remove the respirator to escape from the area.

In IDLH and oxygen deficient atmospheres, a combination SCBA and air-line respirator may be used since the auxiliary SCBA can be switched to in the event the primary air supply fails to operate and allows the wearer to escape from the IDLH atmosphere.

Air-Purifying Respirators

Air-purifying devices clean the contaminated atmosphere. Ambient air passes through an air-purifying element (by filtration or absorption) that can remove specific gases and vapors, aerosols, or a combination of these contaminants. This type of device is limited in its use to those environments where there is sufficient oxygen and the contaminant's airborne concentration level is within the maximum use concentration of the device. The useful life of an air-purifying device is limited by the concentration of the air contaminants, the breathing rate of the wearer, temperature and humidity levels in the workplace, and the removal capacity of the air-purifying medium.

Air-purifying respirators can be of three types:

- Aerosol (Particle) Removing Respirator
- Gas/Vapour Removing Respirator
- Combination Aerosol Filter/Gas or Vapour-Removing Respirator

Air-purifying respirators cannot be used in IDLH environments because there are limits to the amount of contaminants they can remove. Air-purifying respirators are not appropriate for use in oxygen-deficient atmospheres since they do not supply oxygen and may only be used when the ambient atmosphere contains at least 19.5% oxygen.

Air-purifying respirators are not appropriate for use as protection against materials with poor warning properties (substances that cannot be detected by the respirator wearer by smell, taste or feel) since concentrations inside the respirator may unknowingly reach unsafe levels. The detection of contaminants inside a respirator is called breakthrough. There are some exceptions to this rule; asbestos, silica and radioactive particles are both potential carcinogens with no warning properties but for which the use of air-purifying respirators are adequate up to certain concentrations.

Half Face Respirators

Half face respirators fit under the chin to the bridge of the nose. They are more comfortable in some situations, but may be more difficult in terms of fitting well around a worker's nose, chin and cheeks. Air is drawn through the cartridge or filter by negative pressure that is created inside the respirator face piece when the user inhales.

Full-Face Respirators

Full-face respirators provide a higher level of protection and a better fit than half-face respirators. Full face respirators fit over the entire face, from the hairline to under the chin, and offer eye protection. Air is drawn through the cartridge or filter by negative pressure that is created inside the respirator face piece when the user inhales.

Dust Masks

Dust masks are disposable half face particulate filter respirators. They are also known as a filtering face

piece respirator commonly used in health care and construction/renovation applications. Air is drawn through the filter by negative pressure that is created inside the dust mask when the user inhales.

Powered Air-Purifying Respirators

Powered air-purifying respirators (PAPR) are a variation on air-purifying respirators. A PAPR utilizes a battery-powered blower that draws the contaminated air through the cartridge or filter. The cleaned air is then forced through a hose to the face piece which may be tight-fitting or a helmet or a hood that does not seal tightly against the face of the wearer. PAPRs supply purified air at a positive pressure, which means if a leak occurs in the face piece, helmet, or hood, air should move outward. PAPRs provide the same level of protection as a negative-pressure air-purifying respirator.

SELECTION OF RESPIRATORY PROTECTIVE EQUIPMENT

Respirator selection is based upon a systematic review of the airborne contaminant hazards. Knowledge of standards, regulatory criteria, and manufacturer's information on the types of respirators and limitations must be reviewed to ensure that appropriate accepted respirators are selected for the intended conditions of use. All respiratory protective equipment must be NIOSH approved (National Institute for Occupational Safety and Health) and labeled as such.

The Respiratory Equipment Selection Flowchart is based on the assigned protection factors for air supplying and air purifying respirators. Prior to using the Respiratory Equipment Selection Flowchart, a number of factors need to be carefully considered when selecting the appropriate type of respiratory equipment. It is very important to assess all these factors for each situation each time equipment is being
chosen. Always take into consideration whether or not the equipment is going to be used for emergency
conditions. Gather and document this information on the Respirator Selection Information Form.

HAZARD IDENTIFICATION

Each type of respirator is designed for use under specific environmental conditions and is appropriate for only a certain class or type of respiratory hazard.

IDENTIFY THE AIRBORNE CONTAMINANT(S)

The potential airborne contaminants must be known to ensure the respirator selected is approved for protection against that specific contaminant.

If the respiratory hazard cannot be identified, the atmosphere must be considered Immediately Dangerous to Life and Health (IDLH).

DETERMINE THE CONTAMINANT(S) CONCENTRATION(S)

Determine worker exposure concentration(s) of the average workday and the highest short-term concentration(s) of the contaminant by measuring or estimating the airborne concentrations of contaminants to which workers may be exposed. Anticipated exposures should account for variations in process operation, rate and direction of air movement, temperature (ambient or process), and season.

Measurement includes air sampling and analysis conducted in accordance with accepted practice.

Estimation includes mathematical modeling or estimating based upon the workplace volume, air supply and exhaust, and physical properties (i.e. vapor pressure) or experience from similar circumstances and materials.

If the worker exposure cannot be accurately measured or estimated, the atmosphere must be considered IDLH.

Alberta Occupational Exposure Limits (OELs) for chemical substances are available in Schedule 1, Table 2 of the Occupational Health & Safety Code.

Warning Properties

The published warning properties of each contaminant, if existing, must be identified and are usually found on the product's Material Safety data Sheet (MSDS). Adequate warning properties can be assumed when the odor, taste, or irritation effects of the contaminant are detectable and persistent in concentrations at or below the occupational exposure limit (OEL). When the odor, taste, or irritation threshold of a contaminant is greater than the OEL, the contaminant should be considered to have poor warning properties.

Workers need to know the concentration at which most people can detect the substance by smell, or by nose or throat irritation. When a worker detects the contaminant this way, it indicates the respirator fits poorly, has developed a leak, or has exhausted its cartridges or canister. For this reason, air-supplying respirators should be used for protection against gases or vapors that have poor warning properties at or above their OELs.

For contaminants with poor warning properties, air-purifying respirators may only be used if:

- The respirator cartridge is equipped with an end-of-life indicator; or
- A qualified person calculates the change-out schedule using product information from the manufacturer or estimates based on knowledge of the effectiveness of the cartridge to remove the contaminant. The calculation method used must be the U.S. Occupational Safety and Health Administration (OSHA) model or an equivalent method.
- Are exceptions to the rule, including asbestos, silica and radioactive particles are both potential carcinogens with no warning properties but for which the use of air-purifying respirators are adequate up to certain concentrations.

Skin or Eye Absorption and Irritation Characteristics

Determine if the contaminant is an eye irritant at concentrations normally encountered in the workplace or anticipated in an emergency. Determine if information is available by reviewing the MSDS, indicating possible systemic injury resulting from absorption of the contaminant through the skin or eyes.

Some substances may have a potential significant contribution to the overall exposure by the cutaneous

route, including mucus membranes and the eyes, by contact with vapors, liquids, and solids. Chemicals which pass through the skin are nearly always in liquid form. Solid chemicals and gases or vapors do not generally pass through the skin unless they are first dissolved in moisture on the skin's surface.

Overexposure may occur following dermal skin contact, even when airborne exposures are at or below the OEL. Air sampling alone may be insufficient to quantify exposure accurately and control measures to prevent significant skin absorption may be required.

HAZARD ASSESSMENT

Immediately Dangerous to Life and Health (IDLH)

An IDLH atmosphere is one that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape. Very high concentrations of acutely toxic substances, very low concentrations of atmospheric oxygen or concentrations in excess of the lower explosive limit (LEL) are examples of IDLH situations. IDLH situations require the use of positive-pressure air-supplying respiratory protective equipment.

An IDLH atmosphere is assumed in any of the following situations

- Structural firefighting;
- An untested confined space;
- An area where a known hazardous airborne contaminant is present at or above published IDLH concentrations;
- An area where a known hazardous contaminant is present at an unknown concentration;
- An area where a reduced oxygen concentration may produce a level of hypoxia that is IDLH; or
- An area where, in the opinion of a qualified person, the condition presents a potential IDLH atmosphere.

Additional resources for determining IDLH:
The CSA Standard, Z94.4 Selection, Use, and Care of Respirators, provides additional guidance for addressing potential IDLH situations involving oxygen deficiency.

Oxygen Concentration

Where the potential for an oxygen-deficient atmosphere exists, the oxygen concentration must be measured. Where the oxygen concentration is confirmed to be below 19.5%, the cause of the deficiency must be understood and ongoing monitoring performed, or the atmosphere must be assumed to be IDLH. Workers in an oxygen-deficient atmosphere require air-supplying respiratory protective equipment.

Toxic properties of the Contaminant(s)

Certain toxic properties of the contaminant will influence the choice of a respirator. For example, choosing a full-face piece, rather than a half-mask respirator, is necessary for protection against contaminants that irritate the eye.

Physical form of the Contaminant:

The contaminant will be present as a dust, mist, fume, fiber, gas, or vapor (for example, silica dust, and asbestos fibers or hydrogen sulphide gas). Sometimes it is present in more than one form. Identify the following physical states for all contaminants as they are likely to be encountered:

- Gas or vapor, and/or
- Particulate.

Presence of Oil

To select the appropriate particulate filter using the NIOSH classification system, it is also necessary to determine whether or not oil is present in the workplace where the respirator will be used (i.e. use of air compressor systems with oil lubricators, the operation of motor vehicles, the operation of equipment with combustion engines or any other operation that may generate airborne oil). If the presence of oil is unknown, it is assumed to be present. Monitoring is not required to make this judgment.

Need for Emergency Escape

A mouth-bit on a nose-clamp respirator may be used for emergency escape situations if it can provide protection against the contaminants present and the respirator is not being used in an oxygen-deficient atmosphere. Other types of respiratory protective equipment that can be proven to provide equal or greater protection may also be used.

Minimum Protection Factor Needed

The Assigned Protection Factor of the respirator type is identified in Table 1& 2 and also outlines factors and limitations of respirators that must be considered during the selection process.

A respirator should never be used in an environment where the hazard ratio is greater than it's assigned protection factor. In some cases, the assigned protection factor for the respirator will depend on the type of fit test that is done.

Engineering Controls

Are engineering controls being used in conjunction with the respiratory protection?
Some examples:

- Functioning fume hood;
- Mechanical ventilation;
- Adding clean air to oxygen-deficient space;
- Enclosure or isolation of the process or work equipment;
- Substitution with less hazardous materials etc.

Administrative Controls

Are administrative controls needed or being used in conjunction with the respiratory protection? Are written work procedures available? Some examples:

- Reduced work schedule;
- Appropriate training;
- Good work practices;

- Written procedures;
- Appropriate supervision etc.

Anticipated Respirator Use Time

Certain types of respirators are more effective for use over longer periods of time. When a respirator is anticipated to be worn for extended periods of time, it may become uncomfortable. Wearing an uncomfortable mask for a long period of time can become intolerable. Consideration should be given to administrative controls to minimize respirator use. Some examples:

- Less than 1 hour
- Between 1 hour and 6 hours
- Full shift 6 hours or more

Worker Activity Level

Respirator use can sometimes be quite physically demanding for the average worker. Respirators can impose several physiological stresses ranging from very mild restriction of breathing to burdens of great weight and effort. Increased physical activity and/or increased ambient temperature result in an increase of breathing rate. Consideration should be given to administrative controls to minimize breathing rates while using respiratory protection.

Some examples:

- Low (minimal movement / room temperatures)
- Medium (medium work activity / slightly higher room temperature)
- High (very strenuous activity / high heat load)

Work Area Location

Characteristics of the work area location, operation or process (high temperature, confined space, remote areas, etc.) must also be known to assist in the selection of respiratory protection.

Safe Area Location

Workers wearing respirators must know where a safe area with no airborne contaminants is located. This safe area is the location for donning and removing respirators, as well as the assembly point for rescue, identified as part of the emergency response plan.

Respirator Selection

A respirator should never be used in an environment where the hazard ratio is greater than its assigned protection factor. To select the appropriate level of respiratory protective equipment, use the highest hazard ratio (HHR) of the individual components present (Table 1).

Hazard Ratio

A hazard ratio is the estimated/measured airborne concentration of a substance divided by the occupational exposure limit; this ratio is calculated for each gas, vapor, and/or particulate component that poses a respiratory hazard.

Once the airborne concentration of the contaminants that the worker may be exposed to is known, a

hazard ratio (HR) can be calculated:

Hazard Ratio = Airborne Concentration/OEL

The highest hazard ratio (HHR) is the highest calculated hazard ratio (HR) for any gas, vapor, and/or particular component that poses a respiratory hazard.

TABLE 1 - USE OF HHR TO SELECT A RESPIRATOR

HHR	**Minimum Level of Respirator Needed**	
	Air Purifying	**Air Supplying**
≤ 10	Half face piece	Demand half face piece
≤ 25	Loose-fitting face piece PAPR	Loose-fitting face piece/visor
≤ 50	Half face piece PAPR	Positive pressure half face piece
≤ 100	Full face piece	Positive pressure full face piece or demand SCBA
≤ 1,000	Full face piece PAPR	Positive pressure full face piece
≤ 10,000	May not be used	Positive pressure SCBA or positive pressure air supply respirator with auxiliary air supply

PAPR = Powered Air Purifying Respirator; SCBA = Self-Contained Breathing Apparatus

The Respirator Selection Information Form is required prior to fit-testing and selection of appropriate respiratory protection.

RESPIRATOR TYPE REQUIRED

The information collected on the respirator selection form, following the Respirator Type Selection Flowchart and assigned protection factors, will identify the type(s) of respirator protection that will be appropriate.

RESPIRATOR FIT TESTING AND TRAINING

All tight-fitting half and full-face-piece respirators whether negative or positive pressure (respirator inlet covering that forms a complete seal with the face), must be fit tested. The worker must be fit tested with the same make, model, style, and size of respirator that will be used. The worker must be fit tested prior to the initial use of the respirator, whenever a different respirator face piece (size, style, model or make) is used, and at least annually thereafter.

All workers who require tight-fitting respirators for their work must be fit tested and trained in the safe use of the respirator by the Safety Dept. Workers must bring a written hazard assessment (Respirator Selection Information Form) with them to the Respiratory Fit Testing and must also be clean shaven. Workers will not be trained or fit-tested without the written hazard assessment or without being clean shaven.

Loose-fitting respirators (respirators that form a partial seal with the face, do not cover the neck and

shoulders, and may or may not offer head and/or eye protection) do not require fit testing. This includes: dust masks, loose fitting PAPR etc.

ADDITIONAL USE CONSIDERATIONS

Respirator selection must be carried out for both non-emergency and emergency use. The respirator selected in both instances may be the same, but respirators approved for "Escape-Only" must NOT be used for non-emergency applications.

Personnel conducting respirator selection should consider extraordinary circumstances in the operations that could adversely affect the function of a respirator (i.e. extreme cold or radiant heat, hypobaric or hyperbaric conditions etc.). Additional, advice should be sought from the manufacturers' technical experts.

USE, CARE AND MAINTENANCE OF RESPIRATORY PROTECTION

Respiratory protective equipment works properly only when selected, used, maintained and cared for in the proper manner. Only approved respirators may be used. Follow the manufacturer's specific instructions for use, care, and maintenance of respiratory protection equipment.

FIT-TESTING & TRAINING REQUIREMENTS

All workers who require respirators for their work must have training in a Respiratory Fit Testing and Training by the Safety Department that incorporates the following:

- Hazards.
- Selection criteria.
- Purpose, proper use and limitations.
- Cleaning, maintenance and storage.
- Donning and removal.
- Fit testing and medical surveillance.
- Familiarization with the Code of Practice.

A fit-test may be qualitative or quantitative. A qualitative fit test (QLFT) is a pass/fail method that relies on the subject's sensory response to detect a challenge agent in order to assess the adequacy of respirator fit. A quantitative fit test (QNFT) is a test method that uses an instrument to assess the amount of leakage into the respirator in order to assess the adequacy of respirator fit. In some cases, the assigned protection factor for the respirator will depend on the type of fit-test that is conducted.

*Workers must bring a written hazard assessment (Respiratory Selection Information Form) with them to the Respiratory Fit Testing Course. Workers will not be trained or fit tested without the written hazard assessment.

*Workers must participate in refresher training in respiratory protection annually.

EMERGENCY RESPONSE PROCEDURE

*In the event of an incident, stop work, leave the area and contact the Safety Department and notify

all occupants / workers in the area to evacuate. Close the door and restrict access until contaminant levels have been determined and problem has been controlled or abated.

See Asbestos Identified in Section 3 Item 1 in the Safety Manual

COMMUNICATIONS PLAN

General Communication: A variety of communication mediums will be used to heighten the awareness at ARPI'S INDUSTRIES LTD of the Respiratory Protection Program.

SIGNAGE

Specific work areas (maintenance areas, laboratories, hazardous materials processing areas etc.) that are identified as containing high airborne hazard require external signage. The posted signage must minimally state the following:

- CAUTION
- Respiratory Protection Required.

WORKER HEALTH ASSESSMENT

As part of the respirator fit-testing, workers must complete a health surveillance questionnaire. This should be done before they are assigned to complete work in areas where respirators may be required. The workers must be physically fit to carry out the work while wearing respiratory equipment and be comfortable about wearing respirators.

Workers with facial hair, like beards, long sideburns, or even a two-day stubble may not wear respirators because the hair breaks the seal between the skin and the respirator mask. Wearing eyeglasses may interfere with the respirator seal while wearing a full-face respirator. This means that the respirator mask will leak and not provide the needed respiratory protection. Also, if a worker has facial scars or an acne problem, the facial skin may not be able to form a good seal with a respirator mask.

DOCUMENTATION

The Safety Department must retain the current copy of the Respiratory Protection Program.

Supervisors must include the written hazard assessment and fit testing records by Safety Department as part of their worker's training record for a minimum of two years. The Safety Department will retain any worker health assessment and medical history information indefinitely.

A copy of the Respiratory Protection Program (including occupational exposure assessments) must be available to affected workers and government officers, on request.

PROGRAM REVIEW AND AUDIT

The goal of the program review is to continuously improve the Respiratory Protection Program. The Safety Dept. will review the Respiratory Protection Program annually. The evaluation will include a

review of the written program, training records, exposure assessments, safe work procedures, and health assessment program.

DEFINITIONS

Air-line Respirator: a supplied air respirator through which breathable air is delivered to the worker via an air line. Air is supplied from a compressor or compressed air cylinder.

Air-purifying Respirator: removes contaminants from workplace air by passing it through a filter, a cartridge, or a combination of both, to provide protection from combinations of particulates, vapors, or gases.

Air-supplying Respirator: a respirator that supplies the respirator user with breathing air/gas from a source independent of the ambient atmosphere.

Assigned Protection Factor (APF): the anticipated level of respiratory protection that would be provided by a properly functioning respirator or class or respirators to properly fitted and trained users.

Clean-shaven: a worker has no facial hair that will interfere with an effective seal between the worker's face and the respirator face piece. In practical terms, the skin under the respirator seal must have less than one day of facial hair growth.

Compressed Breathing Air: is supplied atmospheric air under pressure of a quality that complies with CSA Standard Z180.1, Compressed Breathing Air and Systems, and does not contain a substance in a concentration greater than 10% of the applicable OEL.

Confined Space: means an enclosed or partially enclosed space that is not designed or intended for continuous human occupancy with a restricted means of entry or exit and may become hazardous to a worker entering it because of its design, construction, location or atmosphere; of the work activities, materials or substances in it; the provision of first aid, evacuation, rescue or other emergency response service is compromised; or of other hazards relating to it.

Fit Factor: a quantitative measure of the fit of a particular respirator to a particular individual.

Hazard: is a situation, condition, process, material or thing that may cause an injury or illness to a worker.

Hazard Ratio: is the estimated/measured airborne concentration of a substance divided by the occupational exposure limit; this ratio is calculated for each gas, vapor, and/or particulate component that poses a respiratory hazard.

Highest Hazard Ratio: is the highest calculated hazard ratio (HR) for any gas, vapor, and/or particular component that poses a respiratory hazard.

Immediately Dangerous to Life and Health (IDLH): means circumstances in which the atmosphere is deficient in oxygen or the concentration of a harmful substance in the atmosphere is an immediate threat to life; may affect health irreversibly; may have future adverse effects on health, or may interfere with a worker's ability to escape from a dangerous atmosphere.

Loose-Fitting Respirator: the face piece/visor of a respirator that forms a partial seal with the face, does not cover the neck and shoulders, and may or may not offer head and/or eye protection.

Occupational Exposure Limit: a maximum concentration of airborne contaminants deemed to be acceptable, as defined by Schedule 1 of the Alberta Occupational Health & safety Code.

Powered Air Purifying Respirator (PAPR): a full-face mask into which filtered air is pumped about 100-150 liters per minute (4-6 cubic feet per minute). The PAPR consists of a full-face mask, a battery pack, an air pump, high efficiency filter and hoses.

Qualitative Fit-Test (QLFT): a method of testing a respirator's face piece-to-face piece seal by injecting an agent such as saccharin or Bitrex™ inside a test chamber (enclosure hood) and subjectively determining whether the wearer detects the agent.

Quantitative Fit-Test (QNFT): a method of testing a respirator's face piece-to-face piece seal using instrumentation that quantifies the actual protection factor provided by the respirator.

Respirator: personal protective equipment that protects a worker against the inhalation of airborne contaminants providing it is the correct type of respirator and is worn properly.

SCBA (Self Contained Breathing Apparatus): a respirator that provides breathing air from a compressed air cylinder, usually located on the wearer's back.

Supervisor: means the individual that directs or oversees a person, group, department, organization, or operation for ARPI'S INDUSTRIES LTD.

Tight-Fitting Respirator: a face piece inlet of a respirator that forms a complete seal with the face. This includes a half-face piece that covers the user's nose and mouth under the chin; and a full-face piece that covers the user's nose, eyes, and mouth under the chin.

User Seal Check: a fit check of a respirator by the wearer, prior to use, to ensure that the respirator is positioned correctly and providing an effective seal. The field check is conducted according to the manufacturer's instructions before each use.

Worker: any person engaged in work at or for ARPI'S INDUSTRIES LTD, including employees, contracted workers, volunteers, and graduate students.

QUALITATIVE FIT TEST REPORT

Employees Name:_____

Company (Circle One): Arpi's Industries Ltd. Advance Mechanical Ltd.

Address: 6815 40th St. SE, Calgary AB. T1S 0A9

Test Date:_____ **Fit Test is Valid for 2 Years.**

Protocol: OSHA 29CFR 1910.134

Method: Irritant Smoke

Respirator:_____ **Size:**_____

Test Filter Used: P-100 .

Limitations: ___Beard ___Denture ___None

Other:_____

Fitting: ____Satisfactory Positive Pressure Check

____Satisfactory Negative Pressure Check

____Satisfactory Irritant Smoke Fit Test

____Unsatisfactory Fit Test

Explain:_____

Comfort: ____Very Comfortable ____Barely Comfortable

____Comfortable ____Intolerable

____Uncomfortable

Employee's Statement: I understand that my use of this respirator must be in accordance with the Company's Respirator Code of Practice, manufacturer's instructions and applicable the OHS Act, Regulation and Code.

Test Subject:_____ **Date:**_____

Fit Tester:_____ **Date:**_____

RESPIRATORY HEALTH SCREENER

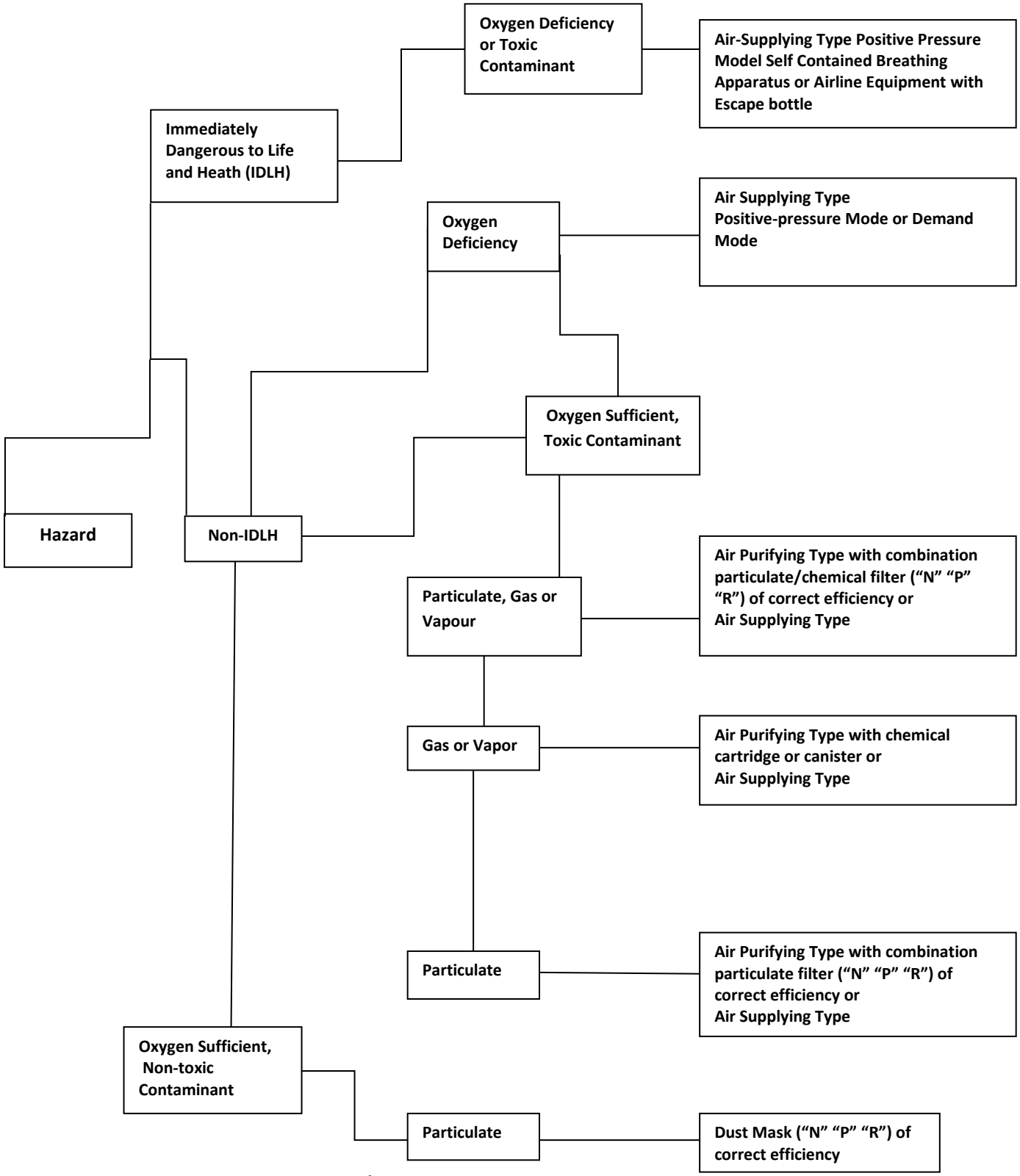
This Information is required to assess any medical conditions that you may have which would preclude the wearing of a respirator. Further medical examination by a physician shall be required if this initial assessment determines the need for medical clearance to a wear a respirator. The information requested on this form is collected under the authority of Section 33© of the Alberta Freedom of Information and Protection of Privacy Act for the purpose of early illness intervention through medical surveillance. Questions about the collection, use, or disposal of this information should be directed to Arpi's Health, Safety, and Environment Department at 403-236-2444.

For any question marked "YES" Please provide an explanation	YES	NO	Explanation
Do you have any type of lung problem, such as bronchitis, emphysema, pneumonia, asthma, etc.?			
If you have asthma, describe the severity of it. Is it exercise induced? Do you [eke regular medications for it?			
Da you suffer from shortness of breath or have constant coughing spells?			
Do you have any (concerns or other problems with wearing a respirator?			
Are you presently taking any mediation that affects your heart, lungs, or your ability to wear a respirator?			
Is there any reason that you cannot shave to provide a clean-shaven surface for sealing a respirator?			
Do you have any concerns Or Other problems with wearing a respirator?			
Do you have a any medical conditions that would preclude you from the use of a respirator?			
Are you currently a smoker?			

I have answered (he questions truthfully and to the best of my ability and knowledge. I agree to report to my Supervisor, the Safety Department and my Physician any change in my physical health that might a affect my ability to wear a respirator.

Physician Name:	**Date:**
Physician Signature:	
Employee Name:	**Date:**
Employee Signature:	

RESPIRATORY FLOWCHART: Choose the Appropriate Protective Equipment



CAUTION

A respirator must be worn in this area

CAUTION

A respirator must be worn beyond this point

SECTION SIX: Rules and Policy

6.1 GENERAL SAFETY RULES

1. All employees are to ensure that they know how to complete their job in a safe and proper manner. If in doubt, consult your supervisor.

2. Report all observed unsafe acts, tools or conditions to your supervisor. Red tag all defective equipment immediately.

3. Report all injuries and near misses sustained on the job to your supervisor, no matter how small they may seem.

4. The use of seat belts is mandatory in all Company vehicles and equipment. All vehicles must be equipped with a fire extinguisher and first aid kit securely mounted in the vehicle.

5. Obey all security and safety rules and regulations that are implemented by the Owner and either posted on job site or otherwise communicated to employees.

6. It is the duty of all employees to assist new employees in becoming familiar with the work site and to point out any potential safety concerns to them.

7. If an employee has any medical/emotional condition(s) that may affect his/her safe performance on the site, he/she has a duty to inform the supervisor of this condition.

8. Obey all warning signs. Warning tags are not to be removed from any equipment without proper approval.

9. Do not tamper with, alter, or bypass safety devices such as barriers, guardrails, cones, lock-outs, alarms or emergency equipment.

10. Refer to PPE Policy for specific guidelines on required PPE for your work location.

11. Sensible clothing must be worn when working on the job site (ANSI/CSA approved hard hat, short sleeved shirt, long pants, and ANSI/CSA approved safety green triangle footwear (minimum 6 inches) in good repair (no athletic type footwear is permitted).

12. Do not operate any equipment unless it is your job to do so and you have been instructed by your supervisor to operate it in a safe manner.

13. Only employees with valid operator's licenses shall operate company vehicles. Company vehicles are to be operated in accordance with the manufacturer's instructions and applicable

14. Maintain good housekeeping in your area, this will help prevent accidents.

15. Special care should be taken when handling chemicals, fuels and oil. Report all chemical, fuel and oil spills to your supervisor (no matter how small).

16. All on-site chemical containers must be properly labeled and all employees must become familiar with the proper handling and storage. Read, understand and comply with the **Safety Data Sheets.**

17. Use the proper tool for the proper job. If you have any questions, ask your supervisor.

18. Wash hands after handling chemicals, and always wash before eating, drinking or smoking. Contaminants could be picked up if you fail to do so.

19. You will be working very close to the general public; they are not familiar with the hazards of our work so look out for them as they may be unaware of potential danger.

20. For safety reasons, the behaviors listed below are not appropriate for the work site and will not be tolerated:
    - Running and throwing things.
    - Fighting or horseplay.
    - Gambling or stealing.

21. Firearms or ammunition are not permitted on-site and are cause for immediate dismissal.

22. Safety glasses are mandatory on all jobsites and in the shop. A full-face shield and glasses must be worn as required in job procedures.

23. Only qualified trained employees are to use powder-actuated tools. High impact safety goggles/glasses must be worn when using any powder-actuated tool.

24. Do not use compressed air to blow dust from clothing, never point an open-air hose at others. Do not work on air lines while they are under pressure. Shut off all valves and drain the line before working on it.

25. All employees shall obey all **"No Smoking**" regulations and smoke only in areas designated by the Company or posted as a "**Smoking Permitted**" area.

26. Caution should be used around combustibles.

27. No holes, trenches or shafts are to be left open at any time unless an employee is present or adequate guardrails are erected and properly signed.

28. Keep alert around moving equipment. Establish eye contact with the equipment operator before you enter the work operation. Never assume the operator sees you or knows what you are about to do. Never park vehicles directly behind equipment.

29. Lift correctly, use your legs not your back. Get help for heavy lifts or use equipment to move the object.

30. Be alert for pinch points when setting chokers or winch cables while working around articulating equipment such as loaders, backhoes and cranes.

31. Never oil, grease, or crawl under a running piece of equipment. Shut it off and lock it out until your work is finished.

32. Know where First Aid Kits and Fire Extinguishers are located. Fill out First aid Record Sheets when items are removed from First Aid Kits.

33. Correct unsafe acts or conditions immediately, or report them to your supervisor. The first rule of safety is **"NEVER WALK PAST AN UNSAFE ACT OR CONDITION, STOP AND CORRECT IT"**.

34. All work over 3 meters (10 feet) above ground requires scaffold with a handrail or the use of a personal fall protection system. (Refer to Fall Protection Code of Practice).

35. Climb down from equipment – do not jump.

36. When in the vicinity of the backhoe, watch for the bucket and the counter weight when swinging. Make sure that the operator knows where you are, and wear a traffic vest.

37. Do not get off of equipment until attachments are on the ground and the parking brake is set.

38. When getting off equipment, be alert for slippery or uneven ground next to the equipment.

39. Ear Protection shall be worn by operators where sounds exceed 80db.

40. Any excavations or trenches must comply with provincial regulations.

Non-compliance of any of the above rules and policies will result in disciplinary action. Refer to the Disciplinary Policy for detailed consequences.

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

6.2 SUBSTANCE ABUSE POLICY

ARPI'S INDUSTRIES LTD is committed to the health and safety of its employees, customers and the public. The use and abuse of alcohol or drugs can adversely affect the ability of a worker to work safely in the workplace creating safety hazards and risks for employees, company clients and the public. To combat the negative effects of alcohol and drug abuse, ARPI'S INDUSTRIES LTD has documented this policy to promote the safety and welfare of its employees, customers and the public.

This policy is guided by the Canadian Model for Providing a Safe Workplace [Alcohol & Drug: Guideline & Work Rule]. ARPI'S INDUSTRIES LTD emphasizes "zero" tolerance for any form of intoxication at work.

Minimum Standards on ARPI'S INDUSTRIES LTD Premises or Customer Premises

- No employee shall distribute, possess, consume or use alcohol or drugs on any company premises or workplace.
- No employee shall report to work or be at work with an alcohol level which exceeds **0.040 grams per 210 liters of breath.**
- No employee shall report to work or be at work with detectable levels of any drug equal to or in excess of the concentrations listed in the **table below [urine and oral fluid drug concentration limits].**
- No employee shall use illicit drugs, or intentionally misuse prescribed or non-prescribed medications or other substances while at work.
- No employee shall report to the workplace or work if on any prescribed or non-prescribed medication that can seriously affect their ability to perform work safely.
- A worker can only possess prescribed and non-prescribed medication in the workplace for its intended purpose as directed by the workers physician or pharmacist.
- A worker shall inform the supervisor or manager of any potential unsafe side effects that may result from prescribed and non-prescribed medication before starting work.
- No employee shall be unfit for scheduled work due to the use or after effects of alcohol, illicit drugs or the intentional misuse of prescribed or over-the-counter medications.

Any ARPI'S INDUSTRIES LTD employee found in breach of the above standards could have his/her employment terminated or be subject to disciplinary action as contained in ARPI'S Industries Ltd. corporate employee handbook.

COMPLIANCE THROUGH ALCOHOL & DRUG TESTING

To ensure a safe work environment and compliance with this policy ARPI'S Industries Ltd. will require an alcohol and drug test [urine or oral fluid] based on the following circumstances:

a) Reasonable Grounds

When a supervisor or manager of an employee believes that the employee is in breach of this policy:

- A situation where the smell of alcohol is perceived on an employee's breath at work.

- A situation where an employee is acting in a suspicious or unusual manner or where an employee performance and behavior is not consistent as compared with the employee's normal behavior at work.
- A situation where an employee is seen in possession of alcohol or drugs [which is not prescribed medication] in the workplace.
- A situation in which suspicion of an employee by a supervisor or manager cannot be cleared by the suspect employee when confronted to the satisfaction of the supervisor or manager. The supervisor or manager will explain to the employee the reasons for requesting that the employee participates with the drug and alcohol test as required by this policy.

b) Accident, Incident and Near Miss

A situation where an accident, incident, near miss or potentially dangerous scenario occurs and is believed from the investigation to have been caused because of an employee's inability to work safely due to intoxication or substance abuse.

c) Random Test

A situation where an employee involved with ARPI'S Industries Ltd. employee alcohol and drug assistance program is tested to verify that the employee is in compliance with the treatment plan and recommendations of the program.

d) Client Work Site

A situation where the owner of a work site issues an ARPI'S Industries Ltd. employee with a written notice not to enter site because the employee failed to comply with the alcohol and drug work rule.

ARPI'S INDUSTRIES LTD will allow the employee back on owner's site if employee complies with the conditions imposed by the owner and the rehabilitation program.

Any employee requested to be tested will be transported and escorted by the employee's supervisor or superintendent to the nearest testing facility. Employee(s) will be required to submit to either a urine or oral fluid alcohol and drug test.

All ARPI'S INDUSTRIES LTD employees across the organizational structure will be subjected to alcohol and drug test should they be considered 'suspect on reasonable grounds.

URINE DRUG CONCENTRATION LIMITS

DRUGS OR CLASSES OF DRUGS	SCREENING CONCENTRATION equal to or in excess of ng/ml	CONFIRMATION CONCENTRATION equal to or in excess of ng/ml
Marijuana metabolites	50	15
Cocaine metabolites	150	100
Opiates		
- Codeine	2000	2000
- Morphine	2000	2000
6-Acetylmorphine [heroin]	10	10
Phencyclidine	25	25
Amphetamines/Methamphetamine		
- Amphetamine	500	250
- Methamphetamines	500	250
MDMA		
- MDMA	500	250
- MDA	500	250
- MDEA	500	250

Canadian Model Providing a Safe Workplace: Alcohol & Drug Guidelines and Work Rule October 2010.

ORAL FLUID DRUG CONCENTRATION LIMIT

DRUGS OR CLASSES OF DRUGS	SCREENING CONCENTRATION equal to or in excess of ng/ml	CONFIRMATION CONCENTRATION equal to or in excess of ng/ml
Marijuana metabolites [THC]	4	2
Cocaine metabolites		
- Cocaine or Benzoylecgonine	20	8
Opiates		
- Codeine	40	40
- Morphine	40	40
6-Acetylmorphine	4	4
Phencyclidine	10	10

Amphetamines/Methamphetamine		
- Amphetamine	50	50
- Methamphetamines	50	50
- MDMA	50	50
- MDA	50	50
- MDEA	50	50

Canadian Model Providing a Safe Workplace: Alcohol & Drug Guidelines and Work Rule October 2010.

REFUSAL OF TESTING

Any employee who refuses to submit to, or provide samples [urine & oral fluid] for an Alcohol & Drug Test will be precluded from working for ARPI'S INDUSTRIES LTD until:

a) The employee successfully completes a recognized alcohol and drug Rehabilitation Program before the end of the specified period scheduled by the company which considers the rehabilitations time. The employee must consistently maintain the objectives and requirements set by the program. The employee will provide the company with a certificate or document of completion for the program before the date of reinstatement.
b) The employee submits to and passes an Alcohol and Drug Test with reference to the contents of this policy.
c) The employee submits to an initial assessment or examination by a substance abuse expert or licensed physician [with knowledge of substance abuse disorder] and provide a confidential report of the assessment and recommendation to the company.

USE OF PRESCRIPTION AND NON-PRESCRIPTION DRUGS

Any employee who is using a prescription or non-prescription drug must only take that drug as directed, and should be aware of any potentially unsafe side effects. If the employee is unsure about the side effects of a prescription or non-prescription drug, then the employee should consult with a physician, nurse or pharmacist. If there are any potentially unsafe side effects the employee must notify his supervisor, superintendent or manager before reporting to work.

The drug screen will include tests for any or all of the following substances:

THE TESTING PROCESS

- Alcohol
- Cocaine
- Opiates
- Barbiturates
- Methaqualone
- Propoxyphene
- Amphetamines
- Cannabinoids (Marijuana)
- Phencyclidine
- Benzodiazepines
- Methadone

In order to maintain confidentiality, all test results [positive or negative],will be forwarded to the Health and Safety Department by the testing facility.

STEPS TO BE TAKEN BY EMPLOYER

1. The immediate supervisor should have the employee remain in the vehicle or lunchroom. DO NOT let the employee operate, mount or be near any mobile equipment or work station.

2. Contact your next level supervisor or superintendent, corporate safety supervisor or department manager to conduct an assessment of the employee. If there is reasonable ground that an employee may be under the influence of alcohol or drugs, they will request that the employee submit to an alcohol and drug test [urine or oral fluid]. The supervisor will transport the employee to the nearest licensed testing facility, or request for a mobile alcohol and drug test unit to be

called to the work area.
Corporate safety supervisor or employee supervisor in charge should explain to the employee why there is suspicion and reasonable ground to believe that the employee is under the influence of alcohol or drugs.

3. Explain ARPI'S INDUSTRIES LTD Substance Abuse Policy to the employee:
   - "Zero" tolerance for any alcohol or drug use and intoxication at work.
   - Any refusal to submit to an alcohol and drug test [urine and oral fluid] and or that the test result is positive, the employee will face disciplinary action up to termination of employment for noncompliance with this policy. Before such an employee can be rehired, the employee must show official proof to have completed a rehabilitation program. Management will be responsible for disciplinary action up to and including dismissal.

EDUCATION AND EMPLOYEE ASSISTANCE PROGRAMS

- ARPI'S INDUSTRIES LTD believes that education and awareness is necessary to ensure employee compliance and commitment with the alcohol and drug work rule for providing a safe workplace as contained in this policy.
- ARPI'S INDUSTRIES LTD understands that alcohol and drug abuse is an addiction that constitutes different negative impacts in the workplace and on family. As a moral and legal obligation, the company has an employee assistance program where it recommends and encourages employee(s) to participate in a rehabilitation program. The rehabilitative program is affiliated with: (a) Alberta Alcohol and Drug Abuse Commission (b) The Construction Employee and Family Assistance Program. Including any other support programs that may be available within the community.
- Employee(s) involved with such program(s) will be given company leave without pay up to the period when the program is completed and the worker is reinstated. The employee must provide proof of attendance and completion of the program.

EMPLOYEE ASSISTANCE PROGRAM
Alberta Alcohol & Drug Abuse Commission [AADAC]
2nd Floor 1177–11th Avenue South West
Calgary Alberta T2R 1K9
Phone: 403-297-3071 Fax: 403-297-3036
Office Hours: 8:00am – 9:00pm Tuesday – Thursday
8:00am – 4:30pm Monday and Friday

TESTING FACILITY
LifeMark Health
2121 29th Street NE
Calgary Alberta
Phone: 403-297-9500
Office Hours: 7:30am - 4:00pm Monday – Friday

DEFINITIONS

For purposes of this policy:

Alcohol & Drug Test:

a) A test conducted in a laboratory which relates to testing procedures in laboratory to include the standards and procedures that relate to alcohol and drug testing.
b) A test to determine the presence of alcohol or drugs in the specimen [urine & oral fluid] provided by the employee.
c) A summary of the information contained in the concentration limit tables in this policy.
d) A situation where the employee accepts the terms in this policy and authorizes the laboratory to provide test results to the company or any person with legal authority including a medical officer or substance abuse expert that may require the disclosure of the test result to meet the requirements of this policy.

Alcohol: Any substance that may be consumed and that has alcohol content in excess of 0.5 percent by volume.

Company: A corporation, partnership, association, joint venture, trust or organizational group of persons whether incorporated or not to include ARPI'S Industries Ltd.

Company Workplace: Includes all real or personal property, facilities, land, buildings, equipment, containers, vehicles, vessels, boats, and aircraft whether owned, leased or used by ARPI'S Industries Ltd. and wherever it may be located. This includes all ARPI'S Industries Ltd. customers and clients work site.

Contractor: Any person, contractor or consultant that does a particular job and retained by ARPI'S INDUSTRIES LTD to perform a particular job. Any person, contractor or consultant employed by a contractor to ARPI'S INDUSTRIES LTD to perform a particular job.

Drug or Drugs: Any drug, substance, chemical or agent, the use or possession for which is unlawful in Canada or requires a personal prescription from a licensed treating physician. Any non-prescription medication lawfully sold in Canada and drug paraphernalia.

Employee: Any person employed by ARPI'S INDUSTRIES LTD engaged in work or on a work site where this policy applies.

Employee Assistance Program: Services through organizations that are designed to help employees who are experiencing personal problems such as alcohol and drug abuse.

Medical Review Officer: A licensed physician with knowledge of substance abuse disorders and the ability to evaluate an employee's alcohol and drug laboratory test results generated from an employer's drug testing program and evaluating the medical explanations for the drug test result.

Rehabilitation Program: A program that is tailored to address the needs of an individual which may include education, counseling and residential care offered to assist a person to comply with the alcohol and drug work rule.

Reasonable grounds: includes information established by the direct observation of the employers conduct, such as physical appearance of the employee, the smell associated with the use of alcohol or drugs on the persons or in the vicinity of the person or attendance record, circumstances surrounding an incident or near miss and presence of alcohol, drugs or drug paraphernalia in the vicinity of employee or employee work area.

Work: Includes training and any other breaks from work while at a company's workplace.

Work site: A place at which a person performs work for an owner or employer.

Substance Abuse Expert (SAE): A licensed physician or certified social worker; a licensed or certified psychologist; a licensed or employee assistance expert; or an alcohol and drug abuse counselor. A person, who has received training for specific (SAE) responsibilities, has knowledge of clinical experience in diagnosis and treatment of substance abuse related disorders and has an understanding of the safety implications of substance use and abuse.

The health and safety of ARPI'S INDUSTRIES LTD employees and clients are of the utmost importance to our company, and we pride ourselves in following the standards of the **Canadian Model for Providing a Safe Work Place.**

Julie Berdin, President

February 26, 2024

Date

6.3 WORKPLACE VIOLENCE POLICY

ARPI'S INDUSTRIES LTD promotes and maintains a violence-free workplace in which all people respect one another and work together to achieve common goals. Any act of violence committed by or against any worker or member of the public is unacceptable conduct and will not be tolerated.

ARPI'S INDUSTRIES LTD is committed to the following:

a) Investigating incidents of violence in an objective and timely manner.
b) Taking necessary action. **Employees found at fault following an investigation into a workplace violence incident will be subject to disciplinary action that may include termination of employment**
c) Providing appropriate support to the victim(s).
d) The education of all employees in this policy to prevent the occurrence of any workplace violence incidents

No action shall be taken against an individual for making a complaint, unless it is made in a malicious manner, or found to be without reasonable cause and probable grounds.

The Workplace Violence Policy is not intended to discourage a worker from exercising the worker's rights pursuant to any other law.

PURPOSE

a) Individuals are aware of and understand that acts of violence are considered a serious offence with severe consequences.
b) Those subjected to acts of violence are encouraged to access any assistance they may require in order to pursue a complaint.
c) Individuals are advised of available recourse if they are subjected to, or become aware of situations involving violence.
d) This Policy will be made available to all employee through new hire orientation, posting on safety boards, and annually at scheduled safety meetings.

Acts of violence can take the form of physical contact. Abuse in any form erodes the mutual trust and confidence that are essential to ARPI'S INDUSTRIES LTD operational effectiveness. Acts of violence destroy an individual's dignity, lower moral, engender fear, and break down the work unit. Acts of violence may occur as a single event or may involve a continuing series of incidents.

DISCLOSURE OF INFORMATION

Arpi's Industries Ltd. will not disclose the circumstances related to an incident of violence or the names of the complainant, the person alleged to have committed the violence and any witnesses, except

(i) where necessary to investigate the incident or to take corrective action, or to inform the parties involved in the incident of the results of the investigation and any corrective action to be taken to address the incident,
(ii) where necessary to inform workers of a specific or general threat of violence or potential violence, or
(iii) as required by law.

ARPI'S INDUSTRIES LTD will treat all acts and incidents of violence in a serious manner and are subject to disciplinary action.

Julie Berdin, President

February 26, 2024

Date

6.3.1 PREVENTION AND CONTROL OF WORKPLACE VIOLENCE PROCEDURE

INTRODUCTION

Violence in the workplace poses a significant risk to the safety and well-being of employees. Arpi's Industries Ltd. is committed to providing a safe and secure work environment for all employees. This procedure outlines steps to prevent and control the hazard of violence in the workplace.

1. RISK ASSESSMENT

Conduct a thorough risk assessment to identify potential sources of violence in the workplace. This assessment should include:

- Reviewing past incidents of violence or threats.
- Identifying high-risk areas or activities.
- Assessing the potential for violence from clients, customers, or the public.
- Evaluating any known personal conflicts among employees.

2. PREVENTION STRATEGIES

Implement administrative controls to minimize the risk of workplace violence, including:

- Providing training to employees on recognizing and responding to signs of potential violence.
- Establishing clear communication channels for reporting concerns or threats.
- Encouraging a culture of respect and professionalism in the workplace.
- Implementing a zero-tolerance policy towards violence, threats, or intimidation.
- Conducting background checks on employees where appropriate.
- Implementing access control measures to limit unauthorized entry to the workplace.

3. TRAINING AND EDUCATION

Provide regular training to employees on workplace violence prevention, including:

- Recognizing early warning signs of potential violence.
- De-escalation techniques for diffusing tense situations.
- Procedures for reporting and responding to incidents of violence or threats.
- Emergency response protocols.

4. EMERGENCY RESPONSE

Develop and communicate clear procedures for responding to incidents of violence or threats, including:

- Evacuation routes and assembly points.
- Emergency communication protocols.
- Procedures for notifying law enforcement authorities.
- Post-incident support and counseling services for affected employees.

5. INCIDENT REPORTING AND INVESTIGATION

Establish a formal process for reporting and investigating incidents of workplace violence, including:

- Encouraging employees to report all incidents, regardless of severity.

- Designating a responsible person or team to investigate reported incidents.
- Documenting all findings and corrective actions taken.
- Reviewing incidents to identify underlying causes and opportunities for improvement.

6. CONTINUOUS IMPROVEMENT

Regularly review and update workplace violence prevention measures based on:

- Feedback from employees.
- Changes in the work environment or organizational structure.
- New information or research on best practices for violence prevention.

7. REVIEW AND APPROVAL

This procedure shall be reviewed annually in conjunction with the Workplace Violence Policy. The signature on the policy and date on the policy will signify that this procedure has been reviewed, updated as required, and approved.

8. IMPLEMENTATION

i. Communicate this procedure to all employees and ensure that appropriate training and resources are provided for its implementation.
ii. Monitor the effectiveness of workplace violence prevention measures and make adjustments as necessary.

9. DOCUMENTATION AND RECORDKEEPING:

Maintain records of risk assessments, training sessions, incident reports, and corrective actions taken to address workplace violence.

This procedure outlines the steps necessary to prevent and control the hazard of workplace violence at Arpi's Industries Ltd. All employees are expected to familiarize themselves with this procedure and actively participate in its implementation to ensure a safe and secure work environment for everyone.

6.3.2 INFORMATION DISCLOSURE PROCEDURE FOR INCIDENTS OF VIOLENCE

1. INCIDENT REPORTING

Any employee who experiences or witnesses an incident of violence in the workplace must report it to their manager, supervisor, the Safety Department, or another person in authority immediately.

2. CONFIDENTIALITY ASSURANCE

i. The employer will ensure the confidentiality of all parties involved in the incident, including the complainant, the alleged perpetrator, and any witnesses.
ii. Information related to the incident, including the circumstances and the names of individuals involved, will not be disclosed except under specific circumstances outlined below.

3. PERMISSIBLE DISCLOSURE

i. Investigation and Corrective Action: Information related to the incident may be disclosed where necessary to investigate the incident or to take corrective action. This includes informing the parties involved in the incident of the results of the investigation and any corrective action to be taken to address the incident.
ii. Threat of Violence: Information may be disclosed where necessary to inform workers of a specific or general threat of violence or potential violence. This is to ensure the safety and well-being of all employees.
iii. Legal Requirements: Information may be disclosed as required by law, such as in response to a legal subpoena or request from law enforcement agencies.

4. HANDLING OF INFORMATION

i. Information related to incidents of violence will be handled with the utmost confidentiality and only shared on a need-to-know basis.
ii. Access to information will be restricted to authorized personnel involved in the investigation, corrective action, or threat assessment process.

5. COMMUNICATION WITH PARTIES INVOLVED

i. Parties directly involved in the incident, including the complainant, the alleged perpetrator, and any witnesses, will be informed of the process and outcomes of the investigation and any corrective action taken.
ii. Communication with parties involved will be conducted sensitively and with respect for their privacy and confidentiality rights.

6. DOCUMENTATION AND RECORDKEEPING

i. Records of incidents of violence and the related investigation, including any actions taken, will be maintained in a secure and confidential manner.
ii. Access to incident records will be restricted to authorized personnel and kept in accordance with applicable privacy laws and regulations.

7. TRAINING AND AWARENESS

i. Employees will receive training on the importance of confidentiality in handling incidents of violence and the procedures for reporting and responding to such incidents.
ii. Managers and supervisors will receive additional training on how to effectively manage incidents of violence while respecting the confidentiality of all parties involved.

8. REVIEW AND UPDATE

This procedure shall be reviewed annually in conjunction with the Workplace Violence Policy. The signature on the policy and date on the policy will signify that this procedure has been reviewed, updated as required, and approved.

This Information Disclosure Procedure ensures that incidents of violence in the workplace are handled with sensitivity, confidentiality, and in compliance with legal requirements. It provides clear guidance on when information may be disclosed and outlines the steps to be taken to protect the privacy and well-being of all parties involved.

6.3.3 OBTAINING IMMEDIATE ASSISTANCE FOR INCIDENTS OF VIOLENCE PROCEDURE

1. STAY CALM AND ASSESS THE SITUATION
In the event of workplace violence, remain calm and assess the situation to determine the level of threat and the necessary course of action.

2. ENSURE PERSONAL SAFETY
If possible, move to a safe location away from the source of violence. Ensure your personal safety and the safety of others nearby.

3. ACTIVATE EMERGENCY RESPONSE PROTOCOL
If the situation poses an immediate threat to life or safety, activate the emergency response protocol by:

- Using the office intercom system to request assistance
- Dialing emergency services (e.g., 911) to report the incident and request assistance.
- Activating the alarm system in the workplace to alert others to the emergency.

4. NOTIFY SUPERVISOR OR MANAGER
Inform your immediate supervisor or manager about the incident of violence as soon as it is safe to do so. Provide details about the nature of the incident and any individuals involved, if known.

5. SEEK ASSISTANCE FROM SECURITY PERSONNEL
If available, seek assistance from security personnel or designated safety officers within the organization. They are trained to respond to incidents of workplace violence and can provide support and guidance during the situation.

6. PROVIDE NECESSARY INFORMATION
Provide any relevant information to emergency responders, supervisors, or security personnel, including:

- Location of the incident.
- Description of the individuals involved.
- Nature of the violence (e.g., verbal threats, physical assault).
- Any injuries sustained by yourself or others.

7. COOPERATE WITH AUTHORITIES
Cooperate fully with emergency responders, law enforcement officers, or company security personnel upon their arrival. Follow their instructions and provide any assistance necessary to resolve the situation safely.

8. DOCUMENT THE INCIDENT
After the incident has been resolved, document the details of the incident, including:

- Date and time of the incident.

- Description of what occurred.
- Any injuries sustained or property damage incurred.
- Names of individuals involved, if known.
- Any actions taken to address the incident (e.g., contacting emergency services, notifying supervisors).

9. SEEK SUPPORT AND FOLLOW-UP

i. Seek support from the Safety Department, Employee Assistance Program (EAP), or counseling services offered by the company if needed.
ii. Follow up with supervisors or management to ensure that appropriate measures are taken to address the incident and prevent similar occurrences in the future.

10. REVIEW AND UPDATE

This procedure shall be reviewed annually in conjunction with the Workplace Violence Policy. The signature on the policy and date on the policy will signify that this procedure has been reviewed, updated as required, and approved.

By following this procedure, Arpi's Industries Ltd. workers can obtain immediate assistance when faced with an incident of workplace violence, ensuring the safety and well-being of themselves and their colleagues.

6.3.4 REPORTING VIOLENCE IN THE WORKPLACE PROCEDURE

1. ENSURE PERSONAL SAFETY

If you are in immediate danger, prioritize your safety and seek assistance from emergency services (e.g., call 911) or activate any available alarm systems or panic buttons.

2. DOCUMENT DETAILS OF THE INCIDENT

As soon as it is safe to do so, document the details of the violence incident, including:

- Date, time, and location of the incident.
- Description of what occurred, including specific actions or behaviors involved.
- Names or descriptions of individuals involved in the incident, including witnesses.
- Any injuries sustained or property damage incurred.

3. NOTIFY SUPERVISOR OR MANAGER

i. Report the violence incident to your immediate supervisor or manager as soon as possible. Provide them with a detailed account of the incident and any supporting documentation.
ii. If your supervisor or manager is unavailable or involved in the incident, report the incident to the next level of management or the Safety Department.

4. SEEK MEDICAL ATTENTION IF NECESSARY

If you have been injured as a result of the violence incident, seek medical attention promptly. Inform medical personnel about the circumstances of the incident to ensure appropriate treatment and documentation of injuries.

5. PROVIDE WRITTEN STATEMENT

i. Prepare a written statement detailing your account of the violence incident. Include all relevant information gathered during documentation (Step 2) and any additional details or observations.
ii. Submit the written statement to your supervisor, manager, or Safety representative as part of the official report of the incident.

6. COOPERATE WITH INVESTIGATION

i. Cooperate fully with any investigation conducted by the company into the violence incident. Provide additional information or clarification as requested by management or Safety personnel.
ii. Respect the confidentiality of the investigation process and refrain from discussing details of the incident with unauthorized individuals.

7. FOLLOW-UP AND SUPPORT

i. Follow up with management or Safety to inquire about the status of the investigation and any actions taken in response to the incident.

ii. Seek support from Employee Assistance Program (EAP) or counseling services provided by the company if needed to address any emotional or psychological impact resulting from the incident.

8. REVIEW AND UPDATE

This procedure shall be reviewed annually in conjunction with the Workplace Violence Policy. The signature on the policy and date on the policy will signify that this procedure has been reviewed, updated as required, and approved.

By following this procedure, Arpi's Industries Ltd. workers can effectively report incidents of violence in the workplace, enabling the company to take appropriate action to address the situation and prevent future occurrences.

6.3.5 DOCUMENTING, INVESTIGATING, AND IMPLEMENTING MEASURES TO ADDRESS WORKPLACE VIOLENCE PROCEDURE

1. DOCUMENTING AND REPORTING THE INCIDENT

i. When an incident of violence occurs, ensure that all relevant details are documented promptly, including:
- Date, time, and location of the incident.
- Description of the incident, including specific actions or behaviors involved.
- Names or descriptions of individuals involved, including witnesses.
- Any injuries sustained or property damage incurred.

ii. Report the incident to the appropriate supervisor, manager, or Safety representative immediately for further action.

2. INITIATING AN INVESTIGATION

iii. Designate a qualified individual or team to conduct a thorough investigation into the incident of violence.

iv. Gather relevant evidence, including witness statements, documentation, and any available surveillance footage.

v. Interview all parties involved in the incident, ensuring confidentiality and impartiality throughout the process.

vi. Analyze the information gathered to determine the root causes of the violence incident and identify any contributing factors.

3. IMPLEMENTING IMMEDIATE MEASURES

Take immediate measures to address any immediate hazards or risks identified during the investigation, including:
- Implementing temporary security measures, such as increased surveillance or restricted access to certain areas.
- Providing support and assistance to affected employees, including counseling services or temporary reassignment if necessary.
- Communicating with employees about the incident and any immediate steps being taken to address safety concerns.

4. DEVELOPING A CORRECTIVE ACTION PLAN

i. Based on the findings of the investigation, develop a corrective action plan to address the root causes of the violence incident and prevent future occurrences.

ii. Identify specific measures to eliminate or control the hazard of violence in the workplace, taking into account the nature of the incident and the workplace environment.

iii. Ensure that the corrective action plan includes clear objectives, timelines, and responsibilities for implementation.

5. IMPLEMENTING MEASURES TO ADDRESS WORKPLACE VIOLENCE

Implement the identified measures to eliminate or control the hazard of violence in the workplace, which may include:

- Updating policies and procedures related to workplace violence prevention and response.
- Providing additional training to employees on conflict resolution, de-escalation techniques, and workplace safety.
- Enhancing security measures, such as installing security cameras or panic buttons.
- Establishing a reporting and response protocol for incidents of violence, including procedures for documenting and reporting incidents.
- Conducting regular reviews and assessments of workplace violence prevention measures to ensure effectiveness and compliance with applicable regulations.

6. MONITORING AND REVIEW

i. Monitor the effectiveness of the implemented measures through regular reviews, incident reporting, and employee feedback.
ii. Review and update the corrective action plan as needed to address any gaps or emerging risks related to workplace violence.
iii. Continue to prioritize the safety and well-being of all employees by maintaining a proactive approach to preventing and addressing workplace violence.

7. REVIEW AND UPDATE

This procedure shall be reviewed annually in conjunction with the Workplace Violence Policy. The signature on the policy and date on the policy will signify that this procedure has been reviewed, updated as required, and approved.

By following this procedure, Arpi's Industries Ltd. can effectively document, investigate, and address incidents of workplace violence, ensuring the safety and well-being of all employees.

6.3.6 COMMUNICATING INVESTIGATION RESULTS AND CORRECTIVE ACTIONS FOR INCIDENTS OF VIOLENCE PROCEDURE

1. REVIEW OF INVESTIGATION FINDINGS

i. Upon completion of the investigation into the incident of violence, review the findings to ensure accuracy and completeness.
ii. Verify that all relevant evidence, witness statements, and documentation have been considered in the investigation process.

2. PREPARATION OF COMMUNICATION

Prepare a written summary of the investigation findings, including:

- A brief overview of the incident, including date, time, and location.
- Description of the actions or behaviors involved in the incident.
- Identification of individuals involved, including witnesses.
- Analysis of contributing factors and root causes of the incident.
- Conclusion and recommendations for corrective action.

3. NOTIFICATION OF PARTIES INVOLVED

i. Schedule a meeting or individual discussions with the parties involved in the incident, including:
- The complainant (if applicable).
- The individual(s) alleged to have committed the violence.
- Any witnesses or other relevant parties.

ii. Provide advance notice of the meeting to allow all parties sufficient time to prepare and attend.

4. COMMUNICATION OF INVESTIGATION RESULTS

i. Present the findings of the investigation to the parties involved in a clear and objective manner.
ii. Ensure confidentiality and privacy are maintained throughout the communication process, respecting the rights and dignity of all individuals involved.
iii. Allow each party the opportunity to ask questions or provide additional information related to the investigation findings.

5. DISCUSSION OF CORRECTIVE ACTIONS

i. Discuss any corrective actions or measures to be taken to address the incident of violence, based on the findings of the investigation.
ii. Clearly outline the rationale behind each corrective action and its intended impact on preventing similar incidents in the future.
iii. Solicit feedback from the parties involved on the proposed corrective actions and address any concerns or questions raised.

6. DOCUMENTATION AND FOLLOW-UP

i. Document the outcomes of the communication, including any agreements reached on corrective actions or follow-up steps.
ii. Provide written confirmation of the agreed-upon corrective actions to all parties involved, including timelines and responsibilities for implementation.
iii. Follow up with the parties involved to ensure that corrective actions are implemented effectively and that any necessary support or resources are provided.

7. REVIEW AND MONITORING

i. Periodically review the effectiveness of the implemented corrective actions to assess their impact on preventing future incidents of violence.
ii. Adjust or revise corrective actions as needed based on feedback, changes in the work environment, or emerging risks related to workplace violence.

8. CONFIDENTIALITY AND PRIVACY

i. Maintain confidentiality and privacy throughout the communication process, refraining from disclosing sensitive information to unauthorized individuals.
ii. Respect the privacy rights of all parties involved and ensure that any information shared is strictly necessary for addressing the incident and implementing corrective actions.

9. REVIEW AND UPDATE

This procedure shall be reviewed annually in conjunction with the Workplace Violence Policy. The signature on the policy and date on the policy will signify that this procedure has been reviewed, updated as required, and approved.

By following this procedure, Arpi's Industries Ltd. can effectively communicate the results of investigations into incidents of violence and ensure that appropriate corrective actions are taken to address the underlying causes and prevent future occurrences.

6.4 WORKPLACE HARASSMENT POLICY

Every employee has a right to freedom from harassment in the workplace by ARPI'S INDUSTRIES LTD or agents (suppliers, clients, contract workers, etc.) of ARPI'S INDUSTRIES LTD or by another employee on the grounds of race, religious beliefs, color, gender, physical disability, mental disability, age, ancestry, place of origin, marital status, source of income or family status, or any other prohibited ground under the Alberta Human Rights, Citizenship and Multiculturalism Act, Chapter H-14.

ARPI'S INDUSTRIES LTD is committed to the following:

e) Investigating incidents of harassment in an objective and timely manner.
f) Taking necessary action. **Employees found at fault following an investigation into a workplace harassment incident will be subject to disciplinary action that may include termination of employment.**
g) Providing appropriate support to the victim(s).
h) The education of all employees in this policy to prevent the occurrence of any workplace harassment incidents.

Workplace Harassment Policy

ARPI'S INDUSTRIES LTD will not tolerate any verbal, written (inclusive of e-mail), or physical conduct which constitutes workplace harassment. Persons who harass others will be dealt with appropriately and may be terminated for cause.

Should any incidents of sexual, ethnic or racial harassment of our employees by customers or others who conduct business with the Company occur, ARPI'S INDUSTRIES LTD acknowledges our responsibility to support and assist the person(s) subject to such harassment and the appropriate action will be taken.

Matters that concern an employee's fundamental rights with respect to work will be dealt with in a forthright and confidential manner by ARPI'S INDUSTRIES LTD.

The Workplace Harassment Policy is not intended to discourage a worker from exercising rights pursuant to any other law, including the Alberta Human Rights Act

Disclosure of Information

Arpi's Industries Ltd. will not disclose the circumstances related to an incident of harassment or the names of the complainant, the person alleged to have committed the harassment and any witnesses, except

(i) where necessary to investigate the incident or to take corrective action, or to inform the parties involved in the incident of the results of the investigation and any corrective action to be taken to address the incident, or

(ii) as required by law

Workplace Harassment:

ARPI'S INDUSTRIES LTD's workplace harassment policy is not meant to stop free speech or to interfere with everyday social relations. Harassment can be distinguished from normal, mutually acceptable socializing. Harassment is offensive, insulting, intimidating, hurtful and malicious. It creates an uncomfortable work environment and has no place in employee relationships at our Company.

What one person finds offensive, others may not. Generally, harassment is considered to have taken place if the person knows, or should know, that the behavior is unwelcome.

For the purpose of this policy, retaliation against an individual for having invoked this policy, having participated or cooperated in any investigation under this policy, or for associating with a person who invoked this policy, will be treated as workplace harassment.

Our workplace harassment policy applies to all employees, including Management, and extends to all Company activities, including lunches and social gatherings related to the workplace (whether on-site or off-site).

It is both your responsibility and our responsibility to keep each other informed of matters that infringe upon these rights. These matters must be brought to the attention of the Department Manager, your Shop Foreman, or any other member of Management.

Racial or Ethnic Harassment:

Racial or ethnic harassment is not condoned by ARPI'S INDUSTRIES LTD It is defined as any conduct or comment which causes humiliation or embarrassment to an employee because of their racial or ethnic background, their color, or place of birth, citizenship or ancestry.
Examples of conduct which may be racial or ethnic harassment include:

- Unwelcome remarks, jokes or innuendos about a person's racial or ethnic origin, color, and place of birth, citizenship or ancestry.
- Displaying racist or derogatory pictures or other offensive material.
- Insulting gestures or practical jokes based on racial or ethnic grounds which create awkwardness or embarrassment.
- Refusing to speak to or work with someone or treating someone differently because of their ethnic or racial background.

Sexual Harassment:

It is the intent of ARPI'S INDUSTRIES LTD to provide our employees with a work environment free from sexual harassment. All employees have the responsibility to conduct themselves accordingly.

Like racial or ethnic harassment, sexual harassment is against the law. It is also against the policy of ARPI'S INDUSTRIES LTD which is to encourage respect and courtesy for your co-workers. Also, such conduct has the purpose or effect of unreasonably interfering with work performance or creating an intimidating, hostile and/or offensive working environment.

Examples of what could be interpreted as sexual harassment:

- Gender-related comments about an individual's physical attributes, mannerisms or characteristics.
- Unwelcome physical contact such as patting, touching, pinching, petting, etc.
- Suggestive or offensive remarks.
- Unwelcome propositions of physical intimacy.
- Gender-related verbal abuse, threats or taunting.
- Leering. (A side glance expressive of malignity, amorousness or some unworthy feeling)
- Bragging about sexual prowess.
- Demands for dates or sexual favors.
- Offensive jokes or comments of a sexual nature about an employee.
- Display of sexually offensive pictures.
- Unwelcome questions or discussions about sexual activities.
- Sexual assault.
- Unwelcome language related to gender.

As an employee of ARPI'S INDUSTRIES LTD you have the following responsibilities to our workplace. We hope that all of our employees will help us maintain a workplace free of harassment.

Co-Worker's Role:

If you are a co-worker who has witnessed harassment in the workplace:

Inform the harassed person that you have witnessed harassment and that you find it unacceptable. Support is often welcome. If that person does not feel that they have been harassed, then you should ignore the incident, unless you, yourself, were offended. Encourage the harassed person to report the incident to his/her Supervisor or Department Manager.

Management's Role:

Management is responsible for creating and maintaining a harassment-free workplace. Department Managers must be sensitive to the climate in the workplace and address potential problems before those problems become serious.

If a Department Manager becomes aware of harassment in the workplace and chooses to ignore it, that Department Manager and ARPI'S INDUSTRIES LTD risk being named co-respondent in a complaint and may be found liable in legal proceedings brought about by the complainant and/or local human rights authorities.

When you have asked your Department Manager to deal with a harassment incident, your Department Manager should:

1. Support you without prejudging the situation.
2. Work with you and document the offensive action(s).
3. Contact their Manager and provide details of the incident on your behalf.

What to Do in Cases of Harassment:

On many occasions, the victim of harassment may be hesitant to seek help for fear of personal or economic reprisals. Harassment should not be ignored. Silence can, and often is, interpreted as acceptance.

The following steps apply to all types of harassment:

- **Ask the Offender to Stop:** As harassment is often unintentional, the best way to deal with it is to tell the person(s) that their behavior is unwelcome or offensive and must stop. (Asking to stop the behavior often puts an end to harassment)
- **Keep a Record:** Maintain a record of dates, times and behavior of the offender. If any witnesses are present, this should also be recorded.
- **Inform Your Co-workers:** Inform your co-workers that certain behavior is unwelcome. Your co-workers can provide you with support and they may have also experienced the same behavior.
- **Seek Assistance.**

Seeking Assistance:

If you feel you have been subjected to harassment, the following procedure must be followed.

- Should you have good reason to believe that you have been subject to harassment, you should immediately report the incident to your immediate Supervisor and/or barring that, you should speak to the Department Manager, or any person with sufficient authority to take or ensure the taking of remedial action. This conversation will be confirmed in writing.
- The Department Manager will advise you that an objective examination of the complaint shall take place immediately and of your various rights with reference to whether a formal complaint should be issued and of any other methods of recourse.
- If you decide not to lay a formal complaint, the Department Manager may decide that a formal complaint is required (based on the investigation of the incident) and will file such document(s) with the person(s) against whom the complaint is laid (the respondent(s)) and the Directors of the Company. A copy of the complaint, detailing your allegations, is then provided to the respondent(s).
- The respondent is invited to reply in writing to your allegations and the reply will be made known to you before the case proceeds further.
- ARPI'S INDUSTRIES LTD will do its best to protect from unnecessary disclosure the details of the incident being investigated and the identities of those involved.
- During the investigation, you and the respondent will be interviewed along with any possible witnesses. Statements from all parties involved will be taken and a decision will be made.
- If necessary, ARPI'S INDUSTRIES LTD may employ outside assistance or request the use of our legal counsel.
- You will not be demoted, dismissed, disciplined or denied a promotion, advancement or employment opportunities because you rejected the sexual advances of another employee or because you lodged a harassment complaint when you honestly believed you were being harassed.

- Where it is determined that harassment has occurred, a written report will be given to the employees concerned, and appropriate remedial action will be taken.
- Records of the complaint will only be placed on a respondent's employee disciplinary file when corrective action requires discipline of that employee. Records of the complaint will only be placed on a complainant's employee disciplinary file where a complaint is found to be frivolous or vexatious. In any other case the record shall be maintained only for that period required by records retention guidelines and policies and then destroyed.

FREQUENTLY ASKED QUESTIONS

1. What happens to the people who complain of harassment in the workplace just to retaliate against someone they don't like or get along with?

This is a very unusual situation and more likely to occur when employees are not informed about the definition(s) of workplace harassment. An explanation of the complaint procedure would discourage this type of complaint. Frivolous complaints could result in disciplinary procedures.

2. What protection is there for me if I am falsely accused of sexual harassment? My career and reputation could be ruined.

All investigations are done confidentially and impartially. If there is no merit to a complaint, this will be documented by report. The Company is required by statute to keep the work environment free of sexual harassment. All reasonable complaints must be investigated. Retaliation against any employee as a result of a complaint will not be tolerated. If you feel you are being treated unfairly after the conclusion of the initial complaint, you may complain of retaliation through the same procedure. Confidentiality is emphasized in every case to ensure protection of your reputation.

3. How can the investigation be kept confidential if everyone knows what is going on?

Confidentiality is a major concern in any harassment investigation. Gossip is a part of every Company and beyond our ability to control. It is the responsibility of the Investigator to discuss the complaint only with those who might have knowledge of the situation. Please recognize that, even if a complaint has no merit, there can be damage done to an individual who has been accused. We encourage those with information to support the complaint process and then to leave the conclusions to the investigators.

4. If someone tells a dirty or ethnic joke, is that harassment?

Humor should be used with discretion and be appropriate to a work environment. If someone is offended by the sexual or ethnic nature of a joke(s) this can be considered harassment and that person has the right to object. Use common sense.

5. Is a picture of a nude woman/man in my locker considered sexual harassment?

Any lockers or other storage device (physical or digital) are company property and employees are barred from keeping any profane materials stored in or on them. If an employee were to violate this rule, they would be subject to disciplinary action.

If such material is kept in an employee's private space (such as a backpack or purse) where it is completely concealed and no one can view it, this is not sexual harassment. If the material is moved to an area where other employees may see it and be offended or humiliated by it, the employee will be requested to remove the materials and would be subject to disciplinary action. Further incidents of a similar nature could be considered sexual harassment and would be investigated then followed up with escalated disciplinary action.

6. The attitude towards women is so bad in my department; all the men should be fired for sexual harassment. Where do I start?
That type of general statement is impossible to deal with. If an employee feels they are being harassed or treated differently, they should document exactly what is happening, approach potential witnesses and inform any of the people indicated in the policy statement.

7. Will the person who harassed me go to jail?
If you have been sexually assaulted, a criminal action has occurred and the individual could face criminal charges. Sexual harassment is considered a discriminatory employment practice as opposed to a criminal offence. As an employer, our Company is required to obey provincial and federal statutes protecting against discrimination in employment.

8. How serious is sexual harassment in our Company? Why is this kind of emphasis being put on the subject?
Harassment, of any kind, may occur in any Company and we will not tolerate this behaviour. This comprehensive policy is meant to ensure every employee knows what to do if incidents occur. We believe the problem is best dealt with by education for both management and employees.

9. If I'm accused of sexual harassment, am I entitled to representation?
Yes, you may wish to consult with a lawyer.

10. Could I be sexually harassed by someone of the same sex?
Yes.

11. What about an employee who wears revealing or provocative clothing? Aren't they asking for it?
Sexual harassment often is an expression of power - not sexuality, and a person who is dressing in any particular fashion is not necessarily a target. Individuals who do not report sexual harassment have sometimes expressed the feeling that their clothing, on some occasion, may have given a harasser the wrong impression. This concern is misplaced. No employee should be subjected to harassment under any circumstances.

12. So far, my Supervisor has only harassed me once. I told him to stop and he hasn't done it again since. Is this harassment?
If the Supervisor has stopped the practice you are objecting to, you should consider the incident over. If it starts again in the future, you may wish to pursue a complaint.

13. If someone else is being harassed, do I have to get involved as a witness? It's their problem, not mine.
You are not required to become involved. However, we hope all employees will help us eliminate harassment of any kind from our workplace.

14. How do you decide if it's sexual harassment if there are no witnesses and it's just one person's word against another?
Many sexual harassers repeat their actions with other employees. Investigations can include former employees who have experienced this behavior. Witnesses are not always required to establish what has occurred.

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

6.4.1 REPORTING HARASSMENT PROCEDURE

1. RECOGNIZE AND DEFINE HARASSMENT

i. Understand that harassment can take various forms, including but not limited to verbal, physical, sexual, or psychological harassment.
ii. Familiarize yourself with the company's definition of harassment as outlined in the Workplace Harassment Policy.

2. DOCUMENT THE INCIDENT

i. Write down the details of the harassment incident as soon as possible after it occurs.
ii. Include specifics such as the date, time, location, description of the behavior, and the names of any witnesses present.

3. INFORMAL RESOLUTION (OPTIONAL)

i. If you feel comfortable, consider addressing the issue directly with the individual(s) involved, expressing your discomfort and requesting that the behavior stop.
ii. However, if the harassment is severe or you are uncomfortable confronting the individual(s) directly, proceed directly to step 4.

4. REPORT TO A MANAGE, SUPERVISOR OR SAFETY

i. Report the harassment incident to your immediate manager, supervisor or the Safety Department.
ii. Provide a detailed account of the incident, including the documentation prepared in step 2.

5. INVESTIGATION AND ACTION

i. The designated management representative will conduct a thorough investigation into the harassment complaint.
ii. The investigation will include interviews with the complainant, alleged harasser(s), and any witnesses, as well as a review of any relevant evidence.
iii. Based on the investigation findings, appropriate disciplinary action will be taken if the harassment is substantiated, in accordance with company policies and applicable laws.

6. SUPPORT AND FOLLOW-UP

i. The company will provide support to the complainant throughout the investigation process, including access to counseling services or other resources as needed.
ii. After the investigation is complete, the complainant will be informed of the outcome and any actions taken to address the harassment.
iii. Follow up with Safety, your manager, or your supervisor if you have any concerns or questions about the resolution of the harassment complaint.

7. ANTI-RETALIATION MEASURES

i. Arpi's Industries Ltd. prohibits retaliation against individuals who report harassment in good faith.
ii. If you experience retaliation or adverse treatment as a result of reporting harassment, report it immediately to the Safety Department or senior management for investigation.

8. REVIEW AND MONITORING

i. The company will periodically review its policies and procedures for handling harassment complaints to ensure they remain effective and compliant with applicable laws.
ii. Feedback from employees regarding their experiences with the reporting process will be solicited and used to make improvements as necessary.

9. REVIEW AND UPDATE

This procedure shall be reviewed annually in conjunction with the Workplace Harassment Policy. The signature on the policy and date on the policy will signify that this procedure has been reviewed, updated as required, and approved.

By following this procedure, Arpi's Industries Ltd. aims to create a safe and respectful workplace environment where all employees feel empowered to report harassment without fear of reprisal, and where complaints are promptly and effectively addressed.

6.4.2 DOCUMENTING, INVESTIGATING, AND PREVENTING HARASSMENT PROCEDURE

1. DOCUMENTING HARASSMENT INCIDENTS

i. Encourage employees to document any incidents of harassment they experience or witness, including the date, time, location, individuals involved, and details of the behavior.
ii. Provide a designated form or reporting mechanism for employees to use when documenting harassment incidents.

2. REPORTING HARASSMENT

i. Instruct employees to report harassment incidents promptly to their immediate manager, supervisor, or the Safety Department.
ii. Assure employees that reports will be handled with confidentiality and sensitivity.

3. INVESTIGATION PROCESS

i. Upon receiving a harassment report, the Safety Department will initiate a thorough investigation.
ii. Interview the complainant, alleged harasser(s), and any witnesses separately to gather information.
iii. Collect any relevant evidence, such as emails, text messages, or witness statements.
iv. Document the findings of the investigation in writing.

4. CONFIDENTIALITY AND PRIVACY

i. Ensure that confidentiality is maintained throughout the investigation process to protect the privacy of all parties involved.
ii. Limit the dissemination of information about the harassment complaint to those directly involved in the investigation and any necessary stakeholders.

5. DETERMINATION OF FINDINGS

i. Based on the investigation findings, determine whether the reported behavior constitutes harassment according to company policies and applicable laws.
ii. If harassment is substantiated, take appropriate disciplinary action against the harasser(s) in accordance with company policies and procedures.

6. PREVENTIVE MEASURES

i. Conduct regular harassment prevention training sessions for all employees to raise awareness about acceptable workplace behavior and the consequences of harassment.
ii. Establish clear policies and procedures for reporting and addressing harassment, including avenues for employees to seek assistance or file complaints.
iii. Foster a culture of respect and inclusivity by promoting diversity and inclusion initiatives and providing support to employees who may be vulnerable to harassment.

7. FOLLOW-UP AND SUPPORT

i. Provide support to the complainant throughout the investigation process, including access to counseling services or other resources as needed.
ii. Communicate the outcome of the investigation to the complainant and assure them that appropriate action has been taken.

8. MONITORING AND REVIEW

i. Monitor the effectiveness of harassment prevention measures and adjust them as needed based on feedback from employees and trends in reported incidents.
ii. Conduct periodic reviews of harassment policies and procedures to ensure compliance with legal requirements and best practices.

9. ANTI-RETALIATION MEASURES

i. Prohibit retaliation against employees who report harassment or participate in investigations in good faith.
ii. Encourage employees to report any instances of retaliation to the Safety Department or senior management for investigation.

10. REVIEW AND UPDATE

This procedure shall be reviewed annually in conjunction with the Workplace Harassment Policy. The signature on the policy and date on the policy will signify that this procedure has been reviewed, updated as required, and approved.

By following this procedure, Arpi's Industries Ltd. aims to create a safe and respectful workplace environment where all employees feel valued, supported, and free from harassment.

6.4.3 INFORMING PARTIES INVOLVED IN AN INCIDENT OF HARASSMENT PROCEDURE

1. REVIEW OF INVESTIGATION FINDINGS

i. Once the investigation into the incident of harassment is complete, review the findings to ensure accuracy and completeness.
ii. Verify that all relevant evidence, witness statements, and documentation have been considered in the investigation process.

2. PREPARATION OF COMMUNICATION

Prepare a written summary of the investigation findings, including:

- Overview of the incident, including date, time, and location.
- Description of the harassment behavior and the individuals involved.
- Analysis of contributing factors and root causes of the incident.
- Conclusion and recommendations for corrective action.

3. NOTIFICATION OF PARTIES INVOLVED

i. Schedule a meeting or individual discussions with the parties directly involved in the incident of harassment, including:
- The complainant (if applicable).
- The individual(s) accused of harassment.
- Any witnesses or other relevant parties.

ii. Provide advance notice of the meeting to allow all parties sufficient time to prepare and attend.

4. COMMUNICATION OF INVESTIGATION RESULTS

i. Present the findings of the investigation to the parties involved in a clear and objective manner.
ii. Ensure confidentiality and privacy are maintained throughout the communication process, respecting the rights and dignity of all individuals involved.
iii. Allow each party the opportunity to ask questions or provide additional information related to the investigation findings.

5. DISCUSSION OF CORRECTIVE ACTIONS

i. Discuss any corrective actions or measures to be taken to address the incident of harassment, based on the findings of the investigation.
ii. Clearly outline the rationale behind each corrective action and its intended impact on preventing similar incidents in the future.
iii. Solicit feedback from the parties involved on the proposed corrective actions and address any concerns or questions raised.

6. DOCUMENTATION AND FOLLOW-UP

i. Document the outcomes of the communication, including any agreements reached on corrective actions or follow-up steps.
ii. Provide written confirmation of the agreed-upon corrective actions to all parties involved, including timelines and responsibilities for implementation.
iii. Follow up with the parties involved to ensure that corrective actions are implemented effectively and that any necessary support or resources are provided.

7. ANTI-RETALIATION MEASURES

i. Remind all parties involved that retaliation against individuals who report harassment or participate in the investigation process is strictly prohibited.
ii. Encourage individuals to report any instances of retaliation to the Safety Department or senior management for investigation.

8. REVIEW AND MONITORING

i. Periodically review the effectiveness of the implemented corrective actions to assess their impact on preventing future incidents of harassment.
ii. Adjust or revise corrective actions as needed based on feedback, changes in the work environment, or emerging risks related to harassment.

9. REVIEW AND UPDATE

This procedure shall be reviewed annually in conjunction with the Workplace Harassment Policy. The signature on the policy and date on the policy will signify that this procedure has been reviewed, updated as required, and approved.

By following this procedure, Arpi's Industries Ltd. aims to effectively communicate the results of harassment investigations and ensure that appropriate corrective actions are taken to address incidents of harassment in the workplace.

6.5 COMPANY VEHICLE POLICY

The company is committed to the protection from accidental loss of all its resources, including employees and physical assets. In fulfilling this commitment to protect both people and property, management will provide and maintain a safe and healthy work environment in accordance with industry standards and in compliance with legislative requirements.

All employees will be equally responsible for minimizing incidents within our facilities and while operating company vehicles. Consequently, employees in vehicle accidents and at fault will be responsible for payment of the repairs and insurance deductibles.

First Offence – Fault with our driver

- The employee is responsible for a minimum of $500 and up to a maximum of $2,500 for damages at the discretion of the Division Manager.
- The employee is responsible for completing a Defensive Driving course at his/her cost prior to driving any company vehicle again. This is mandatory.
- If the accident is severe, the case will be turned over to Senior Management to determine disciplinary action up to and including termination and recovery of costs.

Second Offence – Fault with our driver

- The employee is responsible for a minimum of $500 and up to the full cost of the accident at the discretion of the Division Manager.
- The employee is responsible for completing a Defensive Driving course at his/her cost prior to driving any company vehicle again. This is mandatory.
- If the accident is severe, the case will be turned over to Senior Management to determine disciplinary action up to and including termination and recovery of costs.

ZERO TOLERANCE – The Company will seek to recover all charges related to any incidents where drugs and/or alcohol are involved and charges will be laid.

In the event that an employee (who is in possession of a company vehicle or utilizes a company vehicle) has their license suspended, the company must be informed without delay and all use of that company vehicle must cease immediately. If the employee fails to inform the company, disciplinary action will be taken including possible termination.

In the event that an employee (who is in possession of a company vehicle or utilizes a company vehicle) is convicted of impaired driving and is required to utilize an ignition interlock device, the employee must inform the company without delay. The cost of installing an ignition interlock device on a company vehicle will be fully funded by the employee. If the employee fails to inform the company of the conviction, disciplinary action will be taken including possible termination.

Any and all fines imposed as a result of any violation shall be paid entirely by the employee who was responsible for the violation (i.e. traffic tickets, parking tickets, speeding tickets etc).

In addition to the above the following rules must be strictly adhered to when operating a company vehicle.

1. All incidents involving ARPI'S INDUSTRIES LTD vehicles must be reported immediately, no matter how slight they may appear.
2. At all times drivers of ARPI'S INDUSTRIES LTD vehicles are required to ensure that they are in compliance with distracted driving legislation.
3. Secure names, driver's license, insurance, and witness information should an accident occur. Get medical attention for injuries if required.
4. Do not pick up hitchhikers.
5. Ensure First Aid Kit and supplies are in place and secured to the vehicle.
6. Fire extinguishers must be of proper class and size and secured to the vehicle.
7. All materials and equipment to be secured for transportation, driver and passenger protection are to be in place.
8. Vehicle housekeeping to be kept to a high standard.
9. Operators may be expected to attend a Defensive Driving Course should management see fit.
10. When Transportation of Dangerous Goods occurs, Provincial regulations must be complied with and proper signage must be in place.
11. Every worker required to operate vehicles or mobile equipment must have read the applicable safety rules.
12. Workers must not operate company vehicles while impaired (e.g. alcohol, fatigue, sickness or drugs).
13. **Drivers and all passengers must wear seatbelts**.
14. Operators must use running lamps or illuminated headlamps during daytime hours.
15. Workers must not operate mobile equipment unless they have been adequately instructed in the safe use of the equipment and have demonstrated to a supervisor that they are competent to operate the equipment. This rule does not apply when a trainee is operating the equipment under supervision of an authorized instructor.
16. The mobile equipment operator is the only worker allowed riding in the equipment, unless seats or other safe facilities for other workers are provided and used.
17. No person, other than the operator, may be on any part of powered mobile equipment not intended for passenger transport, while the equipment is in motion.
18. Operators of mobile equipment of vehicles are responsible for the safe operation of the equipment. They must maintain full control of the equipment, and must comply with all laws and rules regarding the operation of the equipment.
19. Vehicles and powered mobile equipment must be driven and operated at safe speeds with due regard for weather, road and traffic conditions.

20. When an operator has reason to believe that the equipment or the load is hazardous, the operator must report it to the supervisor and is not to move the equipment or load unless authorized to do so.
21. Operators must obey all signs governing the movement, operation or parking of vehicles on any work site or public or private road.
22. Workers must not get on or off a moving vehicle except in an emergency.
23. Operators must not leave the controls unless the vehicle has been secured against movement by setting parking brakes and transmission locks, lowering any blades, buckets or forks to the ground and choking wheels where necessary.
24. Operators must keep the cab, floor, or deck of mobile equipment free of materials, tools or other objects that could create a tripping hazard, interfere with the operation of controls or interfere with exiting the vehicle.
25. Tools and equipment carried in any part of a vehicle where workers are riding must be placed or secured to prevent injury to workers.
26. Mobile equipment used for lifting or hoisting must not be operated if the load to be moved exceeds the safe working load.
27. Workers must not ride with any part of their bodies outside of the vehicle or equipment.
28. It is the responsibility of the operator of a vehicle to verify that all materials loaded on the vehicle are properly stored and secured. All loads must be checked periodically for condition of blockings, hold-downs, lashings and clearance signals.
29. Persons, other than the operator, should stand well clear of loading operations.
30. Trucks should be spotted in a position so that the loading machine does not swing over the cab.
31. Truck drivers and other operators of equipment must not drive into the swing radius area of cranes, excavators or shovels when such equipment is in operation.
32. Truck drivers shall leave the loading position only upon receiving the signal to do so.
33. Rocking the truck to loosen a load is dangerous and should be avoided.
34. No person shall enter under the raised box of a truck unless it is safely blocked up from the frame of the truck by a heavy timber or other safety device.
35. Equipment with booms, and other suspended parts should not be parked unattended until the suspended parts are either lowered to the ground or safely secured. The equipment should be secured against rolling.
36. No Smoking, including electronic cigarettes, is permitted in any ARPI'S INDUSTRIES LTD vehicle. Failure to comply with this rule may result in disciplinary action and the full cost of repairing any smoking related damage (including cleaning) will be paid by the employee in violation of this rule. Smoking is prohibited by provincial law in all work environments and this includes company vehicles.

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

6.6 DISCIPLINARY POLICY AND PROCESS

Safety Infraction Disciplinary Policy

INTRODUCTION

As with all other programs within a company it is expected that workers and management are held responsible for following the rules, regulations and standards adopted. These safety policies and procedures are outlined throughout the health and safety manual. With the expectations outlined, if individuals are found to not be complying with the expectations it is within the supervisor's and management's responsibility to hold all individual(s) accountable to the program. Within this disciplinary policy outlined are the general steps and processes to be followed by all individuals in order to uphold the health and safety program. When incidents or observations of workers practices and behavior are deemed unsatisfactory or in contradiction to the program the disciplinary policy is to be followed.

ARPI'S INDUSTRIES LTD safety disciplinary policy generally follows the three-strike rule:

- For a safety infraction that is deemed by the supervisor as non-threatening to the individual's health or safety as well as that of others or the environment the three-step warning system can be used.
- For what is determined as a serious offence of safety rules, regulations, personal safety or the safety of other workers and/or the environment, it is within the supervisor's and manager's discretion to proceed directly to step 2 or step 3.
- In all cases logical reasoning should be used when determining the course of warnings or termination. If a supervisor is unsure of what course of action should be taken it is suggested that that person consult with the safety department and/or their department manager.

Step 1 – Verbal Warning

1. If an individual's actions or observed safety infraction is unsatisfactory and the offense is deemed serious and necessary to correct a verbal warning should be issued.
2. In issuing a verbal warning it should be explained to the individual
   a) What they are receiving the offense for
   b) What corrective action needs to be taken by the employee
   c) A copy of this must be signed by the individual with copies provided to
      i. The employee
      ii. Your job file
      iii. The safety department
      iv. The department manager

Step 2 – Written Warning

1. To be used for actions or safety infractions that
   a) The employee has been given a previous verbal warning for and no or unsuitable corrective action has resulted

b) If advised by the department manager/safety department that there is a same or similar previous verbal warning within this individuals file already
c) If the offense has been of a very serious nature and you feel that step 1 should not apply - if in the case of skipping step 1 and going right to the written warning the safety department and/or department manager should be advised and or present

2. In issuing a written warning it should be explained to the individual
   a) What they are receiving the offense for – if in the case of skipping step 1 and going right to the written warning the safety department and or department manager should be advised and or present
   b) What corrective action needs to be taken
   c) A copy of this must be signed by the individual with copies provided to
      i. The employee
      ii. Your job file
      iii. The safety department
      iv. The department manager

Step 3 – Termination

1. To be used for actions or safety infractions that:
   a) The employee has been given a previous written warning for and no or suitable corrective action has resulted. In these cases prior to issuing to the employee please consult with the department manager.
   b) If advised by the safety department and or department manager that there is a same or similar previous written warning within this individuals file already.
   c) If the offense has been of a very serious nature and you feel that step 2 should not apply. In this case if the actions of the individual could directly result in harm to others or property the other steps should be skipped. It is required that you consult with the department manager in cases where this has occurred.
2. In issuing a termination it should be explained to the individual
   a) What they are receiving the termination for.

Please provide a report to the department manager along with termination slip

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

6.7 SAFETY INFRACTION VERBAL WARNING FORM

Date:_____

To:_____

From: _____

Project: _____

Job Number: _____

A verbal warning has been given to you as notice of unacceptable behavior and or performance. The specific details of the actions are as noted below. As has been explained to you, correction of this behavior is required immediately. Failure to correct your behavior or performance will not be tolerated and will result in a written warning and or termination.

This verbal warning has been issued as a result of:_____

_____

_____

_____

_____

_____

Corrective action explained and expected of the employee:_____

_____

_____

_____

_____

_____

_____ _____

Verbal warning issued by Employee signature

Distribution

1 – Employee 1 – Job File

1 – Safety Department 1 – Department Manager

6.8 SAFETY INFRACTION WRITTEN WARNING FORM

Date: _____

To: _____

From: _____

Project: _____

Job Number: _____

This written warning has been given to you as notice of unacceptable behavior and or performance. The specific details are as noted below. This written warning is provided to you following a verbal warning that has been provided already (only 1 verbal required prior to written warning), or the infraction is deemed to be serious enough to have escalated the discipline to a written warning. Failure to correct your behavior or performance will not be tolerated again. Failure to comply immediately will not result in further warnings but rather termination. Termination may result in you not being suitable for re-hire in the future.

This written warning has been issued as a result of: _____

_____

_____

_____

_____

Corrective action explained and expected of the employee: _____

_____

_____

_____

_____

_____

_____ _____

Written warning issued by Employee signature

Distribution

1 – Employee 1 – Job File

1 – Safety Department 1 – Department Manager

6.9 SUB-CONTRACTOR SAFETY POLICY

Sub-Contractor Company Name: _____

Project Name: _____

Sub-Contract #: _____ Date: _____

Work to be Performed: _____

SUB-CONTRACTOR'S SAFETY RESPONSIBILITIES

All sub-contractors employed by Arpi's Industries Ltd. are responsible for the protection of the physical health, safety, psychological, and social well-being of their workers, any Sub-Trades they may employ, and any visitors they may bring to a job site. As a sub-contractor, you are obligated to comply with the current Occupational Health and Safety (OHS) Act, Regulation, and Code, any other legislation applicable to the work you are conducting, and the requirements outlined in the Arpi's Industries Ltd. Safety Manual.

Sub-Contractor Expectations

1. Comply with all applicable legislation
2. Comply with the Arpi's Industries Ltd. Safety Program
    a. A copy of the Arpi's Industries Ltd. Safety Manual must be download through the following link
    b. https://www.arpis.com/wp-content/uploads/Arpis-Safety-Manual.pdf
3. Comply with any site-specific safety requirements
4. Submit your company's written health and safety program. If you do not have a written health and safety program you must agree to adopt the Arpi's Industries Ltd, Health and Safety Program and any other project specific safety programs for the duration of your employment.
5. Ensure all employees complete all site-specific orientations prior to accessing the job site
6. Ensure current WHMIS training is submitted for all employees prior to accessing the job site.

7. Ensure any required training documentation is submitted prior to a conducting the task (i.e., Fall Protection, elevated work platform, confined space, etc.)

8. Report all incidents including but not limited to; fatalities, injuries, near misses, and work refusals the same day as occurrence

9. Submit an investigation report for all incidents within 48hrs of occurrence

10. Submit worker headcounts daily within 1 hr. of shift start times

11. Submit all site-specific safety documentation with 24hrs of completion (i.e., field level hazard assessments, safety meeting reports, site inspection, etc.)

12. Submit any required site-specific job procedures 72hrs prior to the start of the task

13. Ensure an adequate supply of PPE is available to all of your employees

14. Ensure that all of your employees are competent for the tasks assigned to them

15. Ensure that all of your employees understand their safety rights and responsibilities

16. Maintain a high standard of housekeeping at all times

17. If working on a site where Arpi's Industries Ltd. in NOT the Prime Contractor ensure that all communications and document submissions with the Prime Contractor are routed through the Arpi's Industries Ltd. Project Management Team.

Company	Name and Title	Signature	Date
Arpi's Industries Ltd.	President		Feb. 26, 2024
Arpi's Industries Ltd.	Project Manager		
Sub-Contractor			

6.10 SUB-CONTRACTOR SAFETY EVALUATION FORM

This form must be completed by all potential Sub-Contractors as part of the Sub-Contractor selection process. Submission is required by the Job Tender due date and annually thereafter.

1. **General Information**

Company Legal Name:_____

Address:_____

Phone:_____

Contact Person:_____

Email:_____

Does your company employ a full-time safety representative?

☐ Yes ☐ No

If Yes

Name:_____ Phone:_____

Email:_____

Explain the Qualifications of your Safety Representative:

2. **Worker's Compensation Board of Alberta**

Account #**:**_____.

You must submit a current WCB Alberta Clearance Certificate.

3. Certificate of Recognition

Does your company hold COR Certification through the Alberta Construction Safety Association?

☐ Yes ☐ No

COR Certificate #:_____. Expiry Date:_____.

You must submit your current COR Certificate

If you are not COR Certified please explain:

4. Health and Safety Program

- Does your company have a written Health and Safety Management Program?

☐ Yes ☐ No

- Does your company conduct Site Health and Safety Meetings for?

Employees:	☐ Monthly	☐ Weekly	☐ Daily	☐ Do not conduct meetings
Field Supervisors?	☐ Monthly	☐ Weekly	☐ Daily	☐ Do not conduct meetings
New Hires?	☐ Monthly	☐ Weekly	☐ Daily	☐ Do not conduct meetings
Sub-Contractors?	☐ Monthly	☐ Weekly	☐ Daily	☐ Do not conduct meetings

- Are Site Health and Safety Meetings documented?

☐ Yes ☐ No

- Do you designate a site health and safety representative for each crew?

☐ Yes ☐ No

- Do you use Health and Safety Performance criteria in the selection of sub-contractors?

☐ Yes ☐ No

- What is your Personal Protective Equipment (PPE) Policy for employees?

- Do you have a program in place to ensure PPE is inspected and maintained?

☐ Yes ☐ No

- Do you have a formal Fall Protection Program?

☐ Yes ☐ No

- Do you conduct Health and Safety Inspections?

☐ Yes ☐ No

- At what frequency are Health and Safety Inspections Conducted?_____

☐ Yes ☐ No

- Are corrective actions documented?

☐ Yes ☐ No

- Do you include sub-contractors in your Health and Safety Inspections?

☐ Yes ☐ No

- Do you conduct inspections on tools and equipment to ensure good working order and compliance with regulatory requirements?

☐ Yes ☐ No

- Do you have a modified work program for injured workers?

☐ Yes ☐ No

Describe your modified work program:

If you have answered 'No' to any of the questions in this section please explain why.

- Have you received an OH&S Stop Work Order, or equivalent, form Alberta or any other Provence/Region your company conducts business in the past 3 years?

☐ Yes ☐ No

Describe the details of the order(s):

5. <u>Health and Safety Statistics</u>

Health and Safety Statistics must be provided for the current year and the 3 previous years

	Current Year*	Year 1	Year 2	Year 3
Number of Fatalities				
Number of Lost Time Incidents (LTI)				
Number of Modified Duties Injuries				
Number of Medical Aid Injuries				
Number of First Aid Injuries				
Lost Time Incident Frequency Rate				
Company Workers Compensation Rate				
Industry Workers Compensation Rate				

*To Date of Submission

Lost Time Incident Frequency Rate = $\frac{\text{Number of Lost Time Incidents x 200,000}}{\text{Total Employee Hours (Yearly)}}$

6. Documentation Submission Requirements

☐ WCB Clearance Certificate*

☐ WCB Premium Summary*

☐ WCB Employer's Report Card*

☐ ACSA COR Certificate

*All required WCB Reports are available through your company's My WCB Account. If your company does not have a My WCB Account please contact WCB at 1-866-922-9221 to obtain the reports.

Authorized Company Representative: _____

Position: _____

Signature: _____

Date: _____

If you have any questions regarding the completion of this form please contact Arpi's Industries Ltd at 403-236-2444 and ask to speak to someone in the Safety Department.

SECTION SEVEN: Personal Protective Equipment

7.1 PERSONAL PROTECTIVE EQUIPMENT POLICY

The following will be observed and practiced by the company and employees when the company undertakes any job or contract.

- All employees, guests and visitors on jobsites will wear CSA/ANSI approved safety glasses, CSA/ANSI Grade 1, 6" ankle height safety boots, appropriate clothing, CSA/ANSI approved hard hats, and any other specialty PPE required for the job site.
- All employees, guests and visitors in the shop and yard facilities will wear CSA/ANSI approved safety glasses, Grade 1 safety shoes, and a reflective safety vest (Yard Only).
- All sheet metal employees shall wear cut resistant gloves during working hours. All other employees will wear gloves appropriate to the work they are conducting whenever there is a hazard to the hands.
- The ARPI'S INDUSTRIES LTD office facility is a PPE exempt zone.
- All PPE used by ARPI'S INDUSTRIES LTD will be maintained within the requirements of O.H. & S. regulations and provincial standards.
- All PPE used by ARPI'S INDUSTRIES LTD will be maintained in accordance with manufacturer's instructions and requirements.
- Company issued PPE will be inspected at time of issue and before each use by the employee using the PPE.
- All PPE that is of questionable reliability, damaged, or in need of service or repair will be removed from service immediately.
- All PPE that has been removed from service will be tagged "OUT OF SERVICE". Any PPE tagged "OUT OF SERVICE" will not be returned until repaired and inspected by a qualified person.
- ARPI'S INDUSTRIES LTD will maintain appropriate inspection and service logs for specialty PPE.
- No piece of PPE will be modified or changed contrary to manufacturer's instruction or specifications of O.H. & S. Regulations.

The safety information in this policy does not take precedence over O.H. & S. Regulations. All employees should be familiar with the O.H. & S. Act and Regulations.

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

7.2 FOOT PROTECTION

GENERAL INFORMATION
Safety footwear is designed to protect against foot hazards in the workplace. Safety footwear protects against compression, puncture injuries and impact.

Safety foot wear is divided into three grades which are indicated by colored tags and symbols.

In construction, the **green triangle** or **ANSI approved** is to be worn.

The **tag color** tells the amount of resistance the toe will supply to different weights dropped from different heights.

The symbol indicated the strength of the sole. For example, a triangle means puncture-resistant sole able to withstand 135kg of pressure without being punctured by a 5cm nail.

It is recommended that only the green triangle grade of footwear, which also gives ankle support, should be used.

Your choice of protective footwear should always over protect, not under protect.

DO…
1. Choose footwear according to job hazard and CSA restrictions.
2. Lace up boot and tie laces securely; boots don't protect if they are a tripping hazard.
3. Use a protective boot dressing to help boot last longer and provide greater water resistance (wet boots conduct current).

DO NOT…
1. Wear defective safety footwear (e.g. exposed steel toe caps).
2. Under protect your feet or modify safety foot wear.

7.3 HEAD PROTECTION

GENERAL INFORMATION

Safety head wear is designed to protect the head from impact from falling objects, bumps, splashes from chemicals or harmful substances, and contact with energized objects and equipment.

All hardhats worn must be equal to, or exceed A Class.

Most head protection is made up of two parts:
1. The shell (light and rigid to deflect blows).
2. The suspension (to absorb and distribute the energy of the blow).

Both parts of the head wear must be compatible and maintained according to manufacturer's instructions. If attachments are used with head wear, they must be designed specifically for use with the specific head wear used. Bump caps are not considered a helmet. In Alberta they can only be used when the only hazard is where a worker might strike his or her head against a stationary object.

INSPECTION AND MAINTENANCE

Proper care is required for head gear to perform efficiently. The service life is affected by many factors including temperature, chemicals, sunlight and ultraviolet radiation (welding). The usual maintenance for head gear is simply washing with a mild detergent and rinsing thoroughly.

DO…
1. Replace head gear that is pitted, holed, cracked or brittle.
2. Replace head gear that has been subjected to a blow even though damage cannot be seen. Remove from service any head gear if its serviceability is in doubt.
3. Replace head gear and components according to manufacturer's instructions.

DO NOT…
1. Drill, remove peaks, and alter shell or suspension in any way.
2. Use solvents or paints on shells (causes breakdown).
3. Use any liner that contains metal or conductive material.
4. Carry anything in the hard hat while wearing the hard hat.

NOTE: **CSA or ANSI approved head wear is permitted.**

All Hardhats MUST have emergency contact information sticker completed and adhered to the inside of the hat.

7.4 NOISE EXPOSURE MANAGEMENT

Noise may be defined as unwanted sound energy and it is not always possible to engineer noise out of the construction environment, it is therefore a basic necessity that if engineering controls are not available, hearing protection be provided and worn by employees exposed to noise. It is the policy of ARPI'S INDUSTRIES LTD to inform workers of the hazards associated with construction noise and implement effective systems to prevent premature hearing loss of workers exposed to such hazards. A major long-term problem in the construction industry is hearing loss, continuous exposure to 85 dBA of sound (exposure duration of 8 hours) will cause permanent hearing loss. Hearing protection used on all sites is to be in compliance with Part 16, Alberta 0H & S code and if it is not practicable to reduce noise levels to or below the noise exposure levels of 80 dB the employer must:

- When practicable, implement options to reduce worker exposure to below the exposure limits by using suitable hearing protection (earmuffs, plugs, etc.).
- Within the Company shop facilities post and maintain clearly worded signage that warns individuals they are entering an area where dangerously high levels of noise exist.
- Supply all workers in such areas with the appropriate hearing protection based on the workers eight-hour exposure.
- Use worker safety meetings to include discussions regarding options to assist the project in reducing workplace noise to permissible limits and the need to wear hearing protection in noisy areas.
- Identify noise hazards, take corrective action to control the hazard, communicate hazardous information to employees, ensuring that hearing loss protective devices are provided and worn by workers and post warning signs in areas where high levels of noise exist

Employees Are Responsible to: use hearing protection when required, maintain such equipment in good condition and comply with the Alberta OH &S code Part 16 (Noise Exposure).

COMMON CONSTRUCTION NOISE LEVELS

Activity	Decibel Noise Levels: immediate (dBA)	Decibel Noise Levels: from approximately 10 feet away (dBA)
Industrial vacuum cleaner	80	
Floor grinder (grinding concrete) - taken in front of grinder	90.6 91.6	84
Bosch chipper (chipping cured concrete)	100.6	93
Skill saw (cutting 2" x 6" lumber)	102	88
5”hand grinder (grinding concrete)	97	81.9
Chop saw (cutting hollow pipe) -cutting rebar	110 95	92
Tablesaw (110 V-cutting plywood)	92	
Drill (Makita-with mixer blade)	100.5	86.9
Drill (Black and Decker-with no attachment)l	102	
Bosch drill (small unit-drilling through 2" x 4" lumber into concrete)	103.5	
Hammering (Spike through 2" x 4" lumber into concrete)	98	

*Test conducted on Wednesday, April 15, 1998 at SMED International, plant construction.

OCCUPATIONAL EXPOSURE LIMITS FOR NOISE

Exposure Level (dBA)	Exposure Duration
82	16 hours
83	12 hours and 41 minutes
84	10 hours and 4 minutes
85	8 hours
88	4 hours
91	2 hours
94	1 hour
97	30 minutes
100	15 minutes
103	8 minutes
106	4 minutes
109	2 minutes
112	56 seconds
115 and greater	0

7.5 RESPIRATORY PROTECTIVE EQUIPMENT

See the Respiratory Code of Practice in Section 5

Workers needing a respirator will require fit testing. Contact the Safety Department to arrange a time.

Call: (403) 236-2444

7.6 FALL PROTECTION EQUIPMENT

See the Fall Protection Code of Practice in Section 5

Employees needing to work at height will require training to properly inspect, maintain and use fall protection systems. Please contact the Safety Department to arrange a training time.

Call: (403) 236-2444

SECTION EIGHT: Maintenance Program

8.1 MAINTENANCE PROGRAM POLICY

It is the policy of ARPI'S INDUSTRIES LTD to maintain all tools and equipment in a condition that will maximize the safety of all personnel.

To accomplish this, a "Maintenance Program" shall be maintained and shall include the following components.

- Adherence to applicable regulations, standards and manufacturer's specifications.
- Services of appropriately qualified maintenance personnel, with ongoing training to ensure current knowledge of equipment operation and repair procedures.
- Periodic preventative maintenance inspections based on elapsed time, operating hours, and/or kilometers travelled.
- Identification and documentation of all maintenance work through a comprehensive work order repair system.

The supervisor shall be responsible for the application of the program in his/her area of responsibility.

Schedule

- Vehicles – 5000km (Minor Service), 30000Km (Major Service)
- Forklift/Telehandler – Pre-Use Inspection, Annual Certification
- Elevated Work Platform – Pre-Use Inspection, Annual Certification
- Hoisting Equipment – Pre-Use Inspection, Annual Certification
- Fall Protection Equipment – Pre-Use Inspection, Annual Certification
- Shop Equipment – Weekly Inspection. Maintenance as required

The safety information in this Policy does not take precedence over OH & S Regulations. All employees should be familiar with the OH & S Regulations.

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

8.2 MOBILE EQUIPMENT MAINTENANCE

Preventative maintenance plays a key role in reducing repair costs and ensuring safe operations.

Pre-operational checks will aid in reducing equipment damage and down time. A pre-operational check should be used for the following equipment – Forklift, Elevated Work Platforms, and Hoisting Equipment.

These checks will reveal wear on components, allowing time to schedule repairs prior to breakdown.

Vehicle maintenance will be conducted at every 5000km (Minor Service) and 30000km (Major Service), the servicing Mechanic will inspect each vehicle for:

1. All fluid levels (fuel, oil, coolant).
2. Battery electrolyte level.
3. Belts, radiator hoses (in place and not damaged or frayed).
4. Bolts/mountings around engine (loose or cracked).
5. Coolant and oil seals (leaks).
6. Air cleaner, connections, filter (dust).
7. Drain cocks.
8. Evidence of vandalism.
9. Walkways, handrails and ladders.

After starting engine, check the following:

1. Oil pressure is normal.
2. Oil levels sufficient (if manufacturer recommends).
3. Air cleaner is functioning properly as indicated by gauge or warning light.

AIR AND HYDRAULIC SYSTEMS

1. Pressure is correct for operation (if equipped with a gauge).
2. Hoses have no cuts, abrasions or bulges and are tight and leak proof.

HYDRAULIC SYSTEM

1. Oil level in hydraulic reservoir is normal
2. There are no visible leaks in seals.
3. Filters are functioning properly as indicated by the gauge or warning light.

TIRES

- Check for cuts, abrasions, wear and adequate pressure.

LIGHTS

- All bulbs and fuses are intact and functional.

CRAWLER TRACKS (where applicable)

- Tracks are in good condition, adequate for terrain and the operation to be carried out.

FASTENING DEVICES

- Ensure there are no loose bolts/fasteners.
- Ensure that the boom puns and keepers are in place.

GUARDS

- Visually check all guards to ensure that they are in place and functional.

BRAKING AND CLUTCH SYSTEMS

- Clutch does not slip.
- Emergency and or parking brakes are operational.

STEERING

- Check for correct alignment and no excessive slackness.
- On crawlers, both tracks will operate in the same direction; tracks can operate independently, tracks can move in opposite directions, and all tracks lock.

Maintain oil and grease as per manufacturer's instructions.

For any mobile equipment that is serviced by an external Service Company, all service reports and inspections will be maintained by each Supervisor in charge of the equipment or distribution of same.

Before operation of any vehicle or equipment, the Operator shall visually inspect the vehicle or equipment for damages or any visible wear and tear that may impede the operation of this equipment and advise their Supervisor if the equipment appears not to be suitable for the operating purposes intended.

8.3 STATIONARY EQUIPMENT AND TOOLS MAINTENANCE

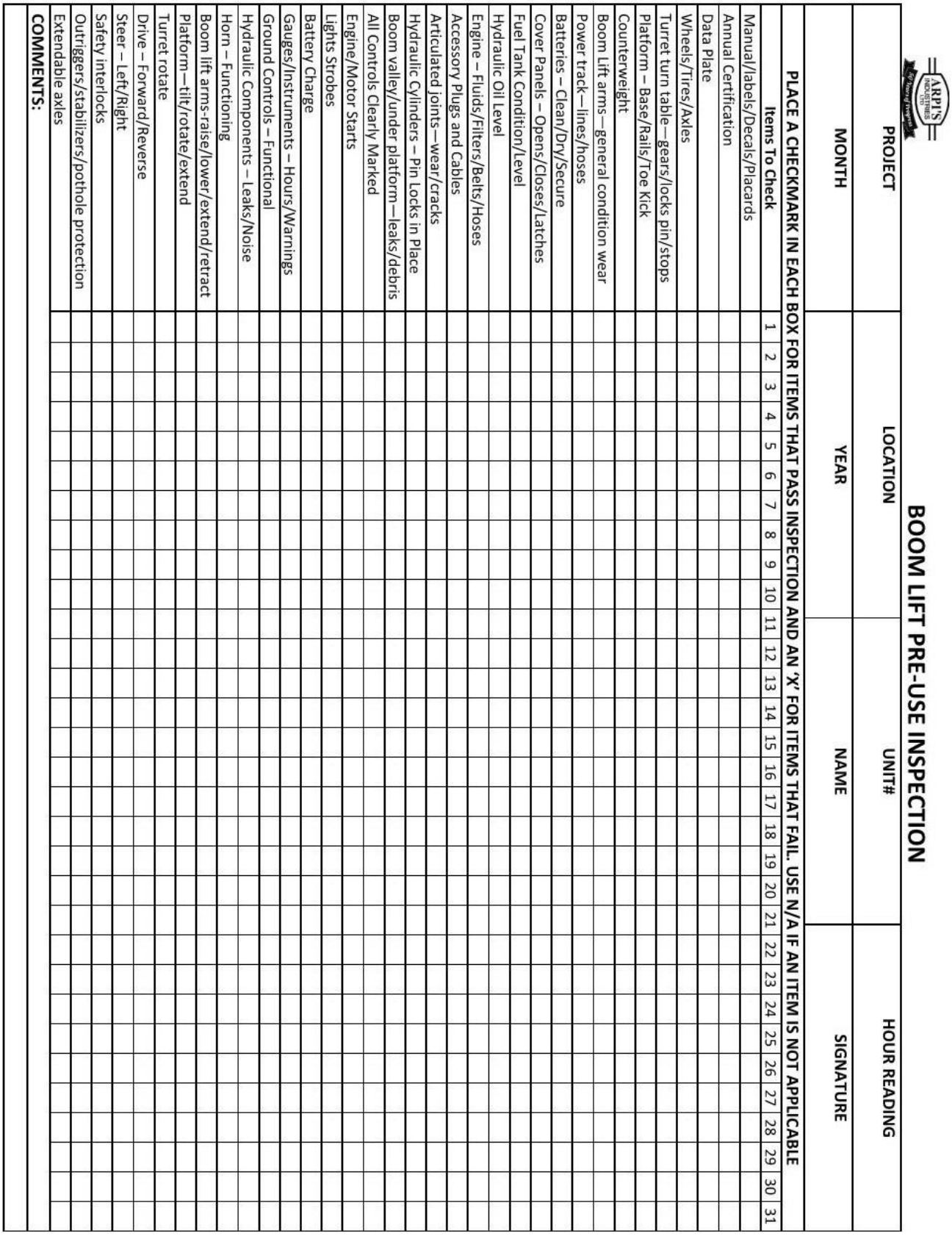
Preventative maintenance plays a key role in ensuring tools and equipment are maintained in a safe and effective way.

Regular maintenance shall be undertaken, recorded and maintained on the following equipment and tools as per the requirements of each Manufacturer.

Individual maintenance records will be documented and maintained within each Department. The following is a list of tools and equipment that should be maintained and documented:

- Overhead cranes
- Chain falls
- Come-along
- Hoisting bins
- Stationary shop equipment

8.4 BOOM LIFT PRE-USE INSPECTION



BOOM LIFT PRE-USE INSPECTION

PROJECT	LOCATION	UNIT#	HOUR READING
MONTH	YEAR	NAME	SIGNATURE

PLACE A CHECKMARK IN EACH BOX FOR ITEMS THAT PASS INSPECTION AND AN 'X' FOR ITEMS THAT FAIL. USE N/A IF AN ITEM IS NOT APPLICABLE																														
Items To Check	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Manual/labels/Decals/Placards																															
Annual Certification																															
Data Plate																															
Wheels/Tires/Axles																															
Turret turn table—gears/locks pin/stops																															
Platform – Base/Rails/Toe Kick																															
Counterweight																															
Boom Lift arms—general condition wear																															
Power track—lines/hoses																															
Batteries – Clean/Dry/Secure																															
Cover Panels – Opens/Closes/Latches																															
Fuel Tank Condition/Level																															
Hydraulic Oil Level																															
Engine – Fluids/Filters/Belts/Hoses																															
Accessory Plugs and Cables																															
Articulated joints—wear/cracks																															
Hydraulic Cylinders – Pin Locks in Place																															
Boom valley/under platform—leaks/debris																															
All Controls Clearly Marked																															
Engine/Motor Starts																															
Lights Strobes																															
Battery Charge																															
Gauges/Instruments – Hours/Warnings																															
Ground Controls – Functional																															
Hydraulic Components – Leaks/Noise																															
Horn – Functioning																															
Boom lift arms-raise/lower/extend/retract																															
Platform—tilt/rotate/extend																															
Turret rotate																															
Drive – Forward/Reverse																															
Steer – Left/Right																															
Safety interlocks																															
Outriggers/stabilizers/pothole protection																															
Extendable axles																															
COMMENTS:																															

8.5 SCISSOR LIFT PRE-USE INSPECTION

SCISSOR LIFT PRE-USE INSPECTION

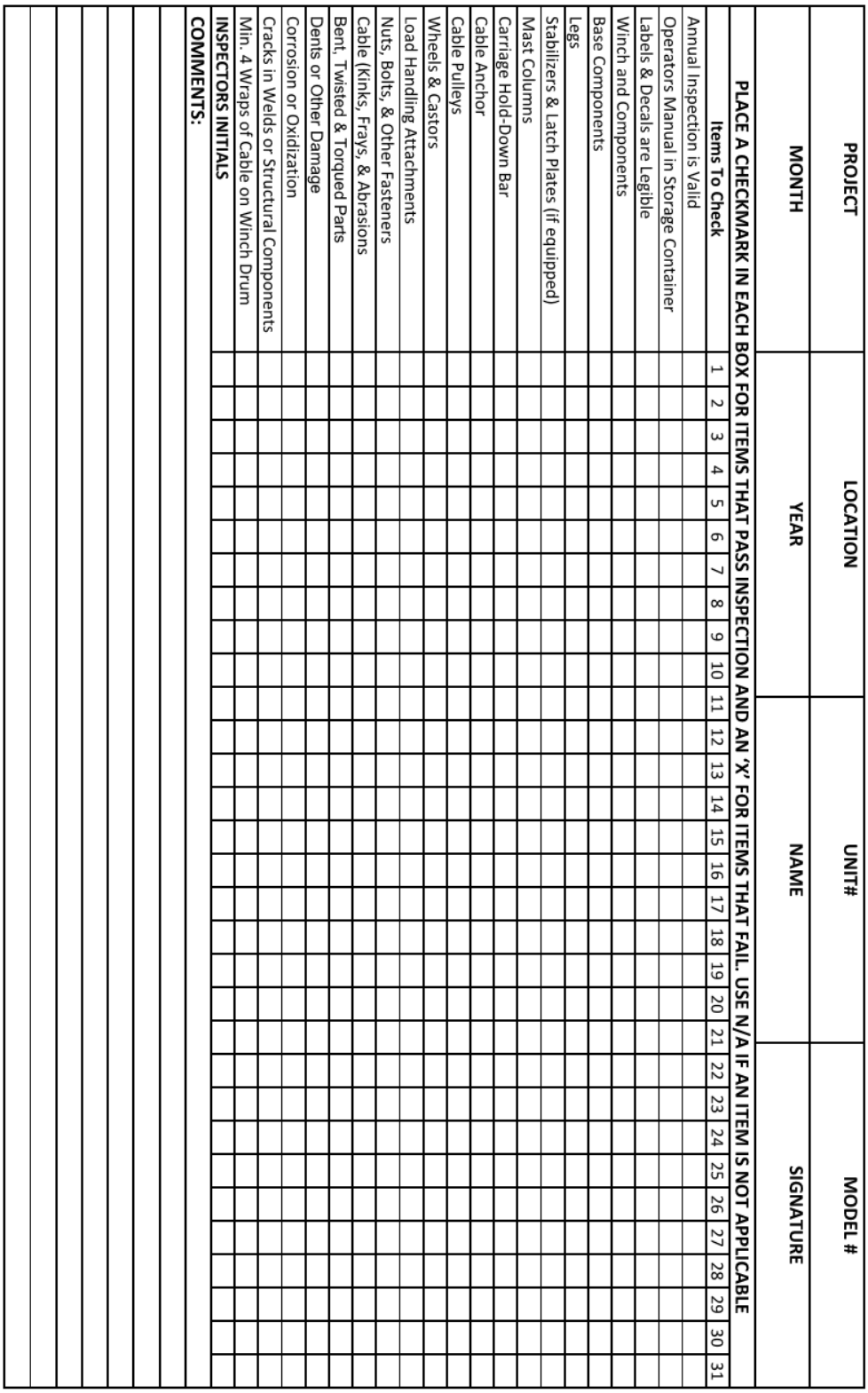
PROJECT	LOCATION	UNIT#	HOUR READING
MONTH	YEAR	NAME	SIGNATURE

PLACE A CHECKMARK IN EACH BOX FOR ITEMS THAT PASS INSPECTION AND AN 'X' FOR ITEMS THAT FAIL. USE N/A IF AN ITEM IS NOT APPLICABLE

Items To Check	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Manual/labels/Decals/Placards																															
Annual Certification																															
Data Plate																															
Wheels/Tires/Axles																															
Elevating Section – General Condition																															
Platform – Base/Rails/Toe Kick																															
Battery Tray – Opens/Closes/Latches																															
Batteries – Clean/Dry/Secure																															
Cover Panels – Opens/Closes/Latches																															
Fuel Tank Condition/Level																															
Hydraulic Oil Level																															
Engine – Fluids/Filters/Belts/Hoses																															
Accessory Plugs and Cables																															
Pivot Pins – Wear/Secured																															
Hydraulic Cylinders – Pin Locks in Place																															
Top of Base – Debris/Signs of Leaks																															
All Controls Clearly Marked																															
Engine/Motor Starts																															
Lights Strobes																															
Battery Charge																															
Gauges/Instruments – Hours/Warnings																															
Ground Controls – Raise/Lower																															
Hydraulic Components – Leaks/Noise																															
Pothole Protection																															
Manual Lowering System																															
Drive – Forward/Reverse																															
Steer – Left/Right																															
Horn – Functioning																															
Function-Enable Device – Functioning																															
Outriggers/Stabilizers - Functioning																															

COMMENTS:

8.6 GENIE LIFT PRE-USE INSPECTION

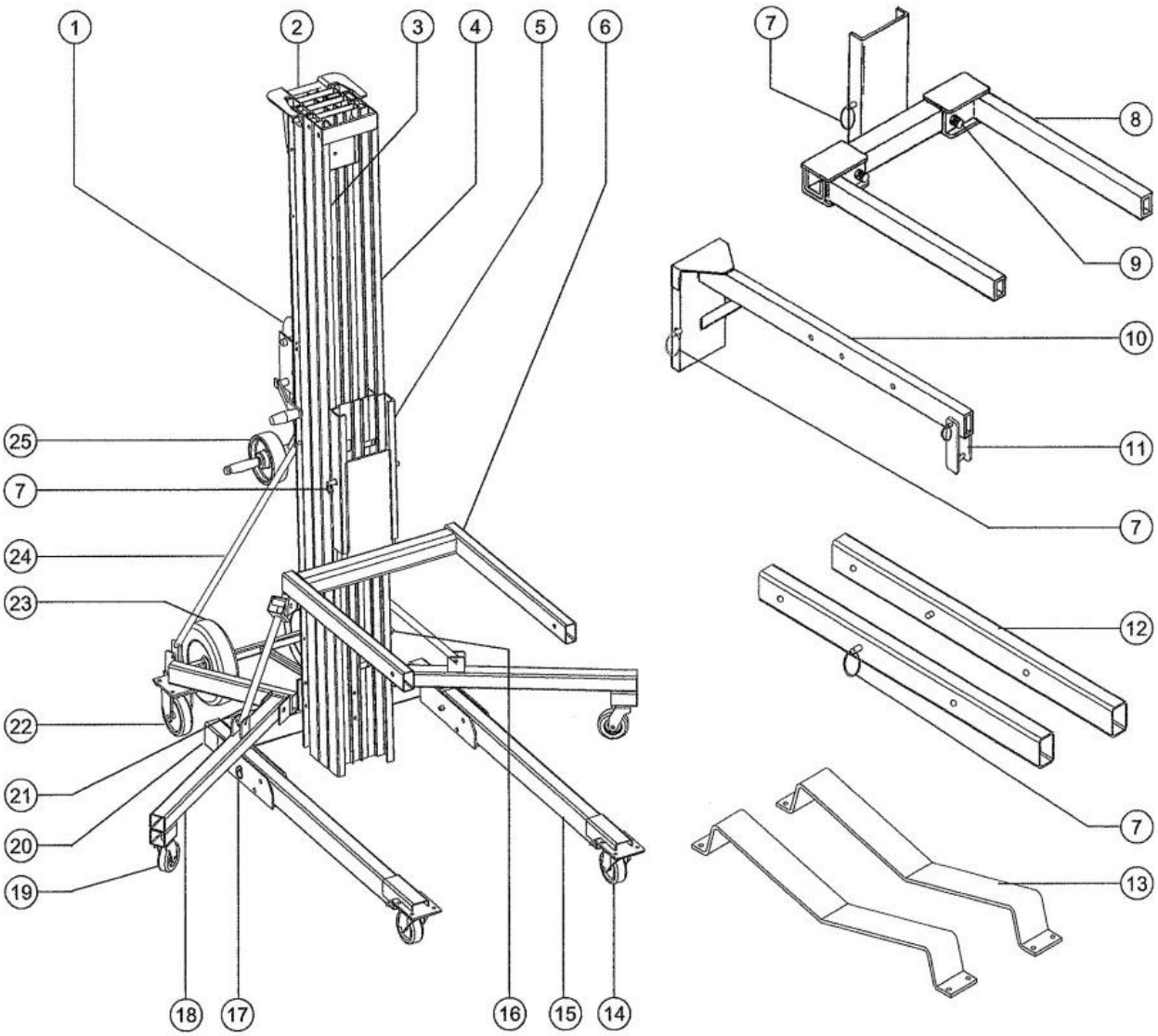


GENIE MATERIAL HOIST PRE-USE INSPECTION

PROJECT	LOCATION	UNIT#	MODEL #
MONTH	YEAR	NAME	SIGNATURE

PLACE A CHECKMARK IN EACH BOX FOR ITEMS THAT PASS INSPECTION AND AN 'X' FOR ITEMS THAT FAIL. USE N/A IF AN ITEM IS NOT APPLICABLE

Items To Check	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Annual Inspection is Valid																															
Operators Manual in Storage Container																															
Labels & Decals are Legible																															
Winch and Components																															
Base Components																															
Legs																															
Stabilizers & Latch Plates (if equipped)																															
Mast Columns																															
Carriage Hold-Down Bar																															
Cable Anchor																															
Cable Pulleys																															
Wheels & Castors																															
Load Handling Attachments																															
Nuts, Bolts, & Other Fasteners																															
Cable (Kinks, Frays, & Abrasions																															
Bent, Twisted & Torqued Parts																															
Dents or Other Damage																															
Corrosion or Oxidization																															
Cracks in Welds or Structural Components																															
Min. 4 Wraps of Cable on Winch Drum																															
INSPECTORS INITIALS																															
COMMENTS:																															



1 Winch
2 Lifting bracket
3 Cable
4 Mast
5 Carriage
6 Standard forks
7 Load handling attachment retaining pin
8 Adjustable forks
9 Snap pin
10 Boom
11 Shackle
12 Fork extension
13 Pipe cradle
14 Leg swivel caster
15 Leg
16 Hold-down bar
17 Leg retaining pin
18 Stabilizer (if equipped)
19 Stabilizer caster
20 Base
21 Stabilizer brace
22 Base swivel/lock caster with brake
23 Transport wheel
24 Mast brace
25 Loading wheels/steer handles

8.7 FORKLIFT PRE-USE INSPECTION

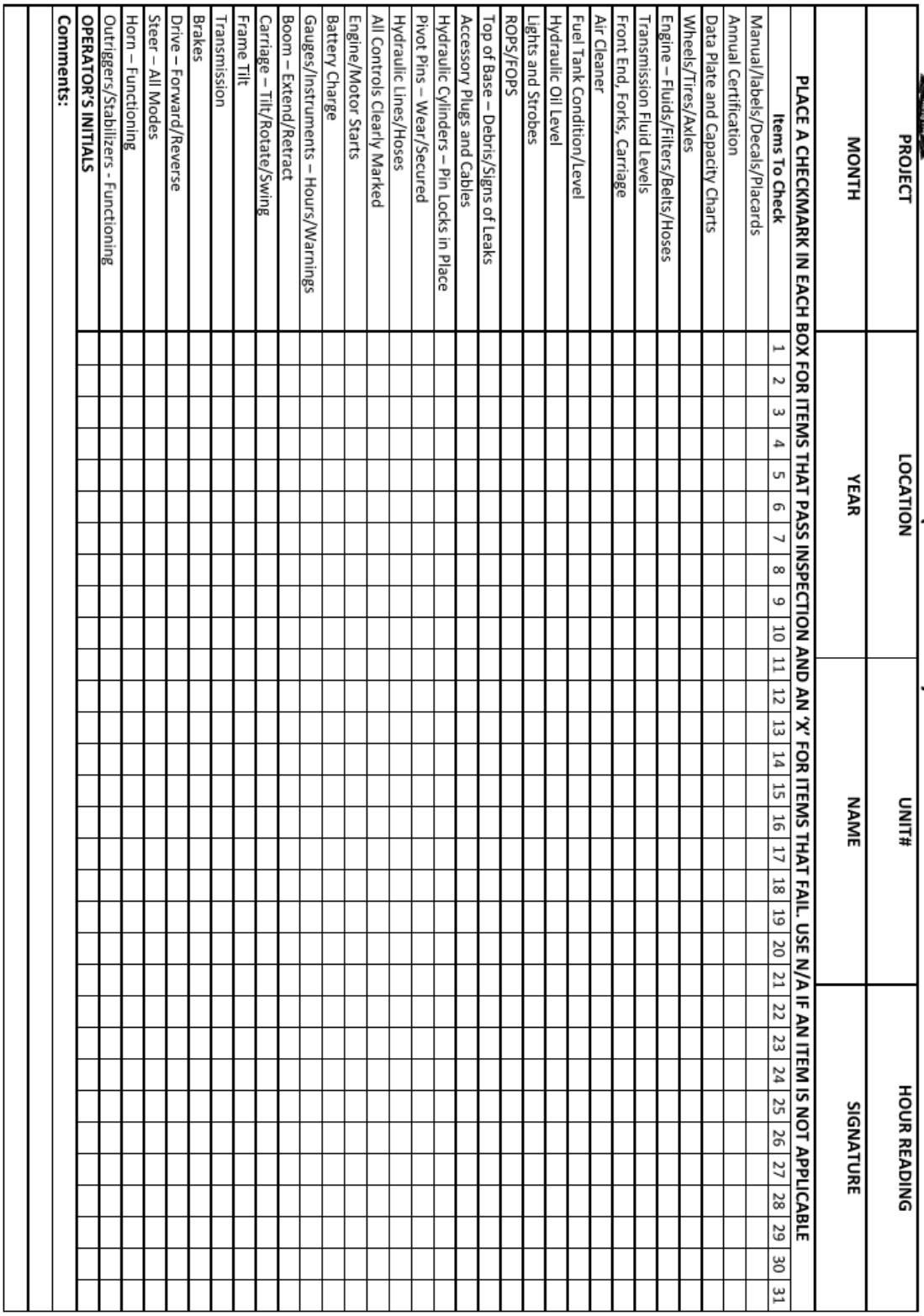
Inspected By:					
Truck Number:				**Date:**	
Time or Hour meter reading:	**Start:**			**End:**	
COMPONENTS	**OK**	**NO**	**N/A**	**Explanation or note:**	
Engine oil level	☐	☐	☐		
Fuel level	☐	☐	☐		
Propane cylinder& hose	☐	☐	☐		
Hydraulic level	☐	☐	☐		
Battery & water level	☐	☐	☐		
Oil Level	☐	☐	☐		
Tires & wheels	☐	☐	☐		
Forks & locking pins	☐	☐	☐		
Lift & tilt cylinders	☐	☐	☐		
Mast frame & forks	☐	☐	☐		
Chains & hydraulic hoses	☐	☐	☐		
Gauges	☐	☐	☐		
Steering	☐	☐	☐		
Parking & service brakes	☐	☐	☐		
Lifting & lowering controls	☐	☐	☐		
Lights front & back	☐	☐	☐		
Horn & warning device	☐	☐	☐		
Seat belt	☐	☐	☐		
Operator Qualifications				**YES**	**NO**
Training Certified?				☐	☐
Currently holds a valid driver's license?				☐	☐
Personal protective equipment in use?				☐	☐

8.8 PALLET TRUCK PRE-USE INSPECTION

Inspected By:			
Serial Number:		**Date:**	
Time or Hour meter reading:	**Start:**	**End:**	
COMPONENTS	**OK NO N/A**	**Explanation or note**	
Visual Inspection - Keypad or Optional Key Switch are Turned OFF			
Tires	No gouges, chunking, or flat spots	☐ ☐ ☐	
	No bond failure.	☐ ☐ ☐	
	Adequate tread	☐ ☐ ☐	
Battery	Fully charged/ no leakage	☐ ☐ ☐	
	Properly installed	☐ ☐ ☐	
	Battery disconnect functions properly	☐ ☐ ☐	
Lift/Lower	No damage to hoses or limit switches	☐ ☐ ☐	
Controls	Move smoothly without binding	☐ ☐ ☐	
	Return to neutral when released	☐ ☐ ☐	
General	Guards and covers installed and	☐ ☐ ☐	
	Decals in place and legible	☐ ☐ ☐	
	Any dripping oil that might indicate a	☐ ☐ ☐	
Operational Inspection - Keypad or Optional Key Switch are Turned ON			
Horn	Sounds when button is depressed	☐ ☐ ☐	
Steering	Smooth, without binding or excess	☐ ☐ ☐	
Directional/Speed Control	Moves smoothly without binding	☐ ☐ ☐	
	Returns to neutral when released	☐ ☐ ☐	
	Controls speed and direction properly	☐ ☐ ☐	
	Plugging functions properly	☐ ☐ ☐	
	Speed limits function properly	☐ ☐ ☐	
Lift/Lower System	Lift/lower button moves freely and	☐ ☐ ☐	
	All controls perform their functions as	☐ ☐ ☐	
Emergency	Moves the pallet lift truck away from	☐ ☐ ☐	
Hour Meter	Records hours of pallet lift truck	☐ ☐ ☐	
Brake	Handle moves freely without binding	☐ ☐ ☐	
	Stops the pallet lift	☐ ☐ ☐	
Safety	All limit switches function properly	☐ ☐ ☐	
	Travel and lift functions shut down	☐ ☐ ☐	

If an X is placed in any of the above boxes, please make a comment in the box above. Please tag lift out of service if unsafe or compromised in any way, then arrange for repair. Inform your supervisor/foreman of issue.

8.9 TELEHANDLER (ZOOM BOOM) PRE-USE INSPECTION FORM



TELEHANDLER (ZOOM BOOM) PRE-USE INSPECTION

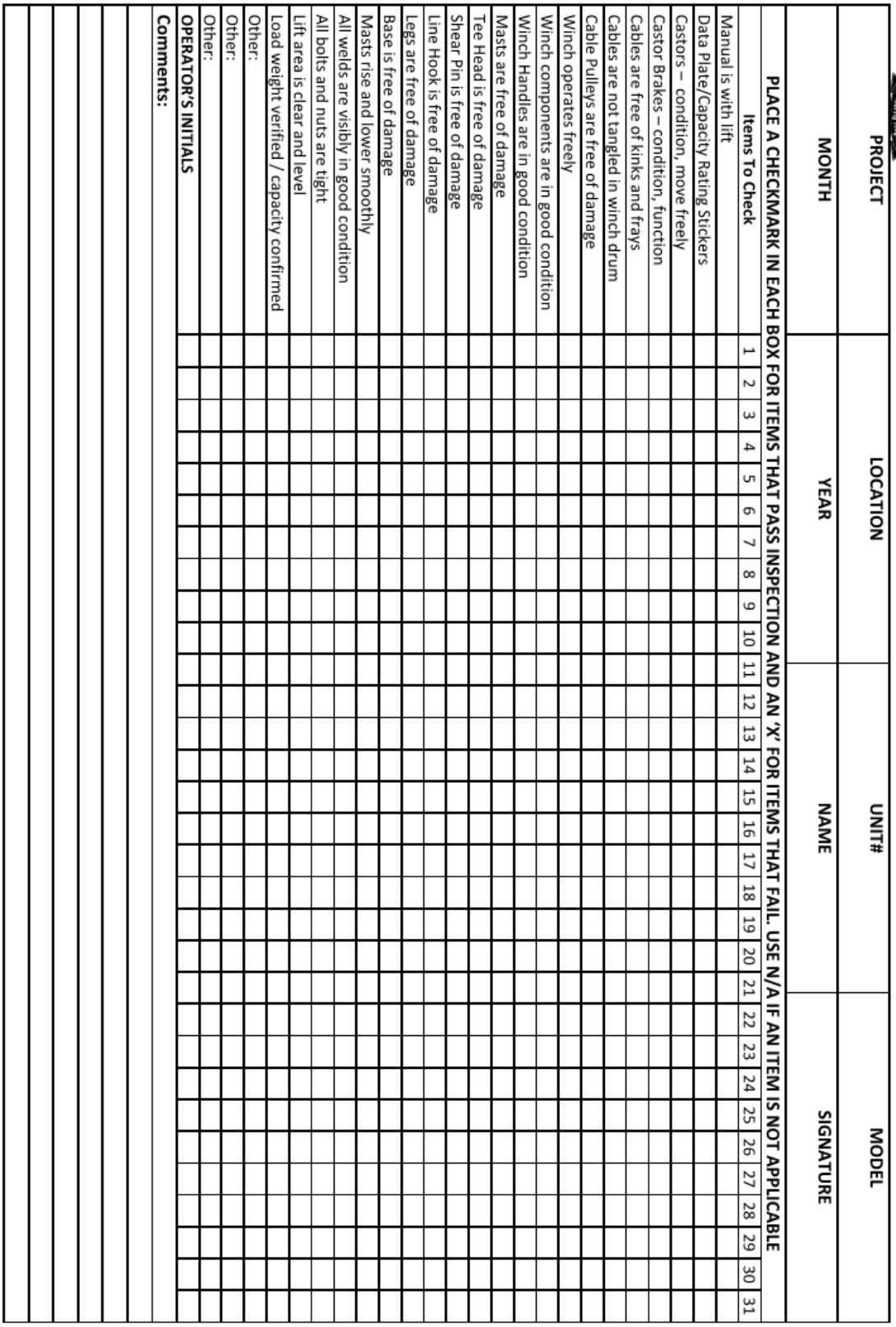
PROJECT	LOCATION	UNIT#	HOUR READING
MONTH	YEAR	NAME	SIGNATURE

PLACE A CHECKMARK IN EACH BOX FOR ITEMS THAT PASS INSPECTION AND AN 'X' FOR ITEMS THAT FAIL. USE N/A IF AN ITEM IS NOT APPLICABLE

Items To Check	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Manual/labels/Decals/Placards																															
Annual Certification																															
Data Plate and Capacity Charts																															
Wheels/Tires/Axles																															
Engine – Fluids/Filters/Belts/Hoses																															
Transmission Fluid Levels																															
Front End, Forks, Carriage																															
Air Cleaner																															
Fuel Tank Condition/Level																															
Hydraulic Oil Level																															
Lights and Strobes																															
ROPS/FOPS																															
Top of Base – Debris/Signs of Leaks																															
Accessory Plugs and Cables																															
Hydraulic Cylinders – Pin Locks in Place																															
Pivot Pins – Wear/Secured																															
Hydraulic Lines/Hoses																															
All Controls Clearly Marked																															
Engine/Motor Starts																															
Battery Charge																															
Gauges/Instruments – Hours/Warnings																															
Boom – Extend/Retract																															
Carriage – Tilt/Rotate/Swing																															
Frame Tilt																															
Transmission																															
Brakes																															
Drive – Forward/Reverse																															
Steer – All Modes																															
Horn – Functioning																															
Outriggers/Stabilizers - Functioning																															
OPERATOR'S INITIALS																															

Comments:

8.10 ROUST-A-BOUT PRE-USE INSPECTION FORM



ROUST-A-BOUT PRE-USE INSPECTION

PROJECT	LOCATION	UNIT#	MODEL
MONTH	YEAR	NAME	SIGNATURE

PLACE A CHECKMARK IN EACH BOX FOR ITEMS THAT PASS INSPECTION AND AN 'X' FOR ITEMS THAT FAIL. USE N/A IF AN ITEM IS NOT APPLICABLE

Items To Check	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Manual is with lift																															
Data Plate/Capacity Rating Stickers																															
Castors – condition, move freely																															
Castor Brakes – condition, function																															
Cables are free of kinks and frays																															
Cables are not tangled in winch drum																															
Cable Pulleys are free of damage																															
Winch operates freely																															
Winch components are in good condition																															
Winch Handles are in good condition																															
Masts are free of damage																															
Tee Head is free of damage																															
Shear Pin is free of damage																															
Line Hook is free of damage																															
Legs are free of damage																															
Base is free of damage																															
Masts rise and lower smoothly																															
All welds are visibly in good condition																															
All bolts and nuts are tight																															
Lift area is clear and level																															
Load weight verified / capacity confirmed																															
Other:																															
Other:																															
Other:																															
OPERATOR'S INITIALS																															
Comments:																															

8.11 VEHICLE MINOR SERVICE CHECKLIST

Date: _____ Year of Vehicle: _____

Make: _____ Model: _____

Odometer: _____ Unit #: _____ Lic. #: _____

GENERAL CHECK

Oil Level	☐Ok	☐No	Power Steering	☐Ok	☐No
Coolant Level	☐Ok	☐No	Brake Fluid	☐Ok	☐No
Washer Fluid	☐Ok	☐No	Alternator Belt	☐Ok	☐No
Transmission Fluid	☐Ok	☐No	Power Steering Belt	☐Ok	☐No

LIGHTS

High Beam	☐Ok	☐No	Brake Lights	☐Ok	☐No
Low Beam	☐Ok	☐No	Back Up Lights	☐Ok	☐No
Tail lights	☐Ok	☐No	Dash Lights	☐Ok	☐No
Turn Signals	☐Ok	☐No			

EQUIPMENT

Heater	☐Ok	☐No	Windshield	☐Ok	☐No
Horn	☐Ok	☐No	Review Mirror	☐Ok	☐No
Wipers	☐Ok	☐No	Side Mirrors	☐Ok	☐No
Gauges	☐Ok	☐No	Body Condition	☐Ok	☐No
Emergency Brake	☐Ok	☐No	Door Latches	☐Ok	☐No
Tires	☐Ok	☐No			

SAFETY EQUIPMENT AND DOCUMENTS

First Aid Kit (Full/Mounted)	☐Ok	☐No	Insurance & Registration	☐Ok	☐No
Fire Extinguisher (Inspected/Mounted)	☐Ok	☐No	Vehicle Accident Forms	☐Ok	☐No
Camera	☐Ok	☐No	Mileage Report Booklet	☐Ok	☐No
Reflector Kit	☐Ok	☐No	TDG Stickers	☐Ok	☐No

VEHICLE CONDITION

_____

_____

_____

_____

_____ _____

Driver's Signature Arpi's Representative Signature

_____ _____

Driver's Name Arpi's Representative Name

8.12 MECHANICS WORK ORDER

Date:_____ Work Order Number:_____
Year of Vehicle:_____ Make:_____ Model:_____
Odometer:_____km Unit#:_____ License #:_____
Repair Instruction:_____

General Check	Good	Bad	Quantity	Part Number	Part Name	Cost
Oil Level						
Coolant Level						
Top Oil Level						
Windshield Washer Fluid						
Automatic Transmission						
Power Steering Fluid						
Brake Fluid						
Alternator Belt						
Power Steering Belt						
Air Pump Belt						
Air Conditioning Belt						
Upper Radiator Hose Belt						
Lower Radiator Hose Belt						
Heater Hoses						
Lights- High Beam						
Lights – Low Beam						
Tail Clearance						
Turn Signals						
Brake Lights						
Backup Lights						
Dash Lights						
Dome Lights						
Cigarette Lighter						
Heater Control						
Horn						
Wiper & Washer						
Idle & Prime Switch						
Radio						
Speedometer						
Gauges						
Shift Indicator						
Indicator Lights						
Seat & Cover						
Emergency Brake						
Door Window Condition						
Door latches/Handles						
Windshield						
Rearview Mirror						
Floor Mats						
Side Mirrors						
Body Condition						

SECTION NINE: Training and Safety Meetings

9.1 SAFETY TRAINING AND EDUCATION POLICY

PURPOSE
The purpose of this policy is to provide for general and specialized safety and related training throughout all levels of the organization.

POLICY
This training will include, but not be limited to:

- New hire safety orientation which will include upper management. (This will be done without exception).
- Job specific training.
- Safety training for supervisors and management.
- Task and trade-specific training and certification.
- Specialized safety and related training.
- Tool box meetings.

These safety policies are to be used in conjunction with the company training program.

The aim of the company training program is to promote safe working practices through the education of our workers in the procedures and equipment that are used in our industry.

The company training program will be developed and implemented by ARPI'S INDUSTRIES LTD Safety Department, with the following topics as priority:

Employee Orientation/Subcontractor Orientation

1. First Aid Training/Emergency Procedures.
2. WHMIS Training.
3. Fall Protection.
4. Hoisting Equipment.
5. Job Specific Training.

Although these topics have priority, any supervisor who has concern about an area may approach ARPI'S INDUSTRIES LTD Safety Department at any time.

Julie Berdin, President

February 26, 2024
Date

9.2 SAFETY MEETING POLICY

PURPOSE

The purpose of this policy is to ensure the regular and effective two-way communication of safety-related information between all employee levels across the various divisions within Arpi's Industries Ltd.

MEETING FREQUENCY AND LEADERSHIP RESPONSIBILITIES

1. All commercial field sites must conduct safety meetings at a minimum weekly, led by the project foreman.
2. All residential New Homes supervisors will conduct safety meetings with the crews working in their area of responsibility at a minimum weekly.
3. The Service (Commercial and Residential) Service divisions as well as the Replacements Division will conduct safety meetings at a minimum monthly, led by the division manager.
4. All shops must conduct safety meetings at a minimum monthly, led by the shop foreman.
5. Office staff will be sent Safety Topics at a minimum monthly to review, with any questions directed to the appropriate Department Manager of the Safety Department.

MEETING DOCUMENTATION

1. Safety Meetings must be documented on the Safety Meeting Form.
2. Documentation should include all topics covered, any feedback or information brought up by attendees, and a printed list of attendee names accompanied by their signature.

TOPICS COVERED

Safety meetings may include, but are not limited to, discussions on:
- Structured Toolbox meeting talks sent from the Safety Department
- Emergency procedures
- Review of recent incidents
- Hazards in the workplace
- Health and safety concerns
- Product information (SDS)
- Safe job procedures

ACTION ON CONCERNS

Any concerns or issues brought up by attendees during safety meetings must be addressed promptly:
- The person leading the meeting is responsible for taking appropriate action on concerns raised during the meeting.
- Concerns that cannot be immediately resolved should be escalated to the appropriate person for further action.

MEETING MINUTES REVIEW AND SUBMISSION

1. All meeting minutes must be submitted to the department's management team for review.

2. The management team will take necessary action if required.
3. Meeting minutes will then be sent to the Safety Department for final review and filing.

This Safety Meeting Policy is intended to promote a culture of safety, open communication, and continuous improvement of the Health and Safety Program within Arpi's Industries Ltd.

Julie Berdin, President	February 26, 2024 **Date**

9.3 REQUIRED SAFETY TRAINING POLICY

Ongoing training and updating of training is a requirement of Occupation Health & Safety. The purpose of this policy is to ensure that all required training is outlined and provided to all employees at a minimum as follows:

Management (President, Vice President, Department Managers, Construction Managers, Project Managers and Health & Safety Manager).

- Company Safety Orientation
- Alberta Legislation Awareness
- Leadership for Safety Excellence
- Workplace Hazardous Materials Information System (WHMIS)

Supervisors (General Foreman and Foreman A)

- Company Safety Orientation
- Alberta Legislation Awareness
- Leadership for Safety Excellence
- Workplace Hazardous Materials Information System (WHMIS)
- Fall Arrest
- Standard First Aid

Supervisors (Foreman, Foreman B, and Foreman C)

- Company Safety Orientation
- Leadership for Safety Excellence
- Workplace Hazardous Materials Information System (WHMIS)
- Standard First Aid

Worker

- **Company Safety Orientation**
- **Workplace Hazardous Materials Information System (WHMIS)**

Julie Berdin, President

February 26, 2024
Date

9.4 JOINT WORKPLACE HEALTH AND SAFETY COMMITTEE POLICY

Introduction

The purpose of the Health and Safety Committee is to identify and resolve safety concerns as well as promote health and safety for employees.

The Health and Safety Committee also aids in increasing two-way communication between workers and employers as well as promoting a healthy and safe working environment.

Committee members have four duties:

1) Receive and consider worker health and safety concerns
2) Make recommendations to the employer regarding worker health and safety concerns
3) Participate in the employer's hazard assessments
4) Review the employer's worksite inspections documentation

Terms of Reference

1. Appropriate Representation

Section 2 (Constituency) of the JWSHSC Rules of Procedure refers to the requirement to provide appropriate representation of all departments, groups, or areas, to address all relevant occupational health and safety concerns at the work site. Each department, group, or area is to be taken into consideration when choosing the appropriate number of members for the JWSHSC.

JWSHSC Formation Considerations for Appropriate Representation
Degree of hazard
Number of employees
Number of departments
Type of shifts
Type of employees (full-time, part-time)

2. Replacing a Member During a Term of Office

The procedure for replacing a member of the JWSHSC is specified below. If there is a union at the work site, members will be replaced as per the union (or unions') agreement.

a) Announce the departure of the leaving member to the committee
b) Determine the demographic represented by the leaving member
c) Announce the departure to the work site
d) Hold an election to replace the member (ensuring the appropriate demographic votes)
e) Announce the new member to the JWSHSC and the work site
f) Amend any documentation to reflect the change

If there is a union, and the union (or unions') agreement indicates how a member is to be replaced, the JWSHSC will follow the agreement.

3. Dispute Resolution - Failure to Reach Consensus

When the committee is unable to reach an agreement regarding a health and safety matter the Co-Chairs will contact OHS for advice and clarification.

4. Coordination with Other JWSHSCs

When the employer (or Prime Contractor) establishes multiple JWSHSCs, the committees will coordinate with each other. The process is outlined below.

a) Committees will determine who will be the liaison between committees
b) The employer (or Prime Contractor) will ensure contact information is shared amongst the JWSHSCs
c) The liaison will ensure appropriate documentation is shared amongst the committees
d) The liaison will ensure relevant recommendations will be shared amongst the committees
e) The liaison will ensure educational and health and safety initiatives will be shared amongst committees

5. Amendments

These Terms of Reference may be amended by vote of the committee members.

<u>Rules of Procedure</u>

1. Name of the Committee

The name of the committee should be reflective of the work site it represents.

Arpi's Industries Ltd. Joint Workplace Health and Safety Committee

2. Constituency

The constituency identifies the different departments or groups represented on the committee. Members are elected in a manner to provide appropriate representation of all departments, groups, or areas to address all relevant occupational health and safety concerns at the work site. This will include Advance Mechanical Ltd. as they operate as a contractor to Arpi's Industries Ltd.

Members are elected in a manner where all departments/areas are represented. Also see Section 1 – Appropriate Representation in the Terms of Reference.

The full list of current JWHSC Members maintained by the Safety Department and is distributed to all departments and jobsites at least annually or whenever a member is changed. The list is also posted on all office and jobsite safety boards.

3. Purpose

The primary purpose of the JWHSC is to identify and resolve safety concerns. The committee should also promote health and safety at the work site.

The committee also aids in increasing two-way communication between workers and employers as well as promoting a healthy and safe working environment.

4. Duties and Functions

The duties and functions of the committee are identified in the OHS Act, s.19, and include the items below.

a) Receive and consider concerns regarding health and safety
b) Respond to and find solutions for worker concerns
c) Participate in hazard assessments
d) Develop corrective actions
e) Monitor and follow up on corrective actions
f) Promote overall health and safety at the work site
g) Cooperate with OHS officers
h) Establish and promote worker training and education programs
i) Make recommendations regarding health and safety
j) Inspect the work site
k) Participate in investigations of incidents and serious incidents
l) Maintain records of matters related to the duties of the committee
m) Other duties as may be specified the OHS Act, Regulations, and Code

Duties shall be performed during normal working hours.

5. Records

The committee will keep accurate records of all activities conducted by, and all items addressed by the committee.

Records include meeting agendas, meeting minutes, recommendations to the employer, inspections, hazard reports, incident reports, investigations, action plans, orders, interactions with OHS officers, or any other documentation related to the duties and functions of the committee.

6. Meetings

The committee shall meet in accordance with OHS Act, s.22. The requirements are stated below.

a) Meet within 10 days of being established
b) Meet at least quarterly
c) Meet if requested by a co-chair
d) Meet if requested by an OHS Officer

Meetings shall be held during normal working hours. A quorum is required to hold a meeting.

7. Agenda and Meeting Minutes

Meeting agendas and minutes will adhere to the guidelines below.

a) Agendas and minutes will follow the approved templates
b) Agenda will be prepared by the co-chairs and distributed to members prior to the meeting
c) The co-chairs must ensure meeting minutes are recorded
d) The co-chairs must ensure meeting minutes are approved and given to the employer within 7 days of the meeting

e) The co-chairs must ensure copies of the approved meeting minutes are posted or provided by electronic means at the work site within 7 days after the day the meeting was held

8. Composition

The committee's composition will follow the requirements below.

a) The committee shall consist of 10 members.
b) One worker representative will be elected from each shop, division, and the office
c) One employer representative will be appointed from each company department

9. Co-Chairs

Two co-chairs will be selected by the members of the committee.

a) The worker representatives shall select one co-chair
b) The employer representatives shall select one co-chair

The co-chairs have specific requirements under the OHS Act (s.22, s.25, s.27). Co-Chair responsibilities are listed below.

a) Be trained in an approved JWHSC course
b) Alternate in serving as chair at committee meetings
c) Participate in all decisions of the committee
d) Prepare the agendas for the committee meetings
e) Ensure that meeting minutes are recorded
f) Ensure that meeting minutes are approved and given to the employer within 7 days of the meeting
g) Ensure copies of the approved meeting minutes are posted or provided by electronic means at the work site within 7 days after the day the meeting was held

Either co-chair may call a special meeting.

10. Quorum

The composition of the quorum shall follow the requirements below.

a) Consist of 5 members (one-half of the members)
b) Both worker and employer members must be present
c) At least one half of members present are workers

A quorum is required to conduct a meeting or make valid recommendations and decisions.

11. Terms of Office

The OHS Act, s.24, states the duration of a member's term on a JWHSC. The durations in the OHS Act are specified below.

a) Normally not less than one year
b) May be longer than one year until a successor is selected or appointed
c) Determined as per the union's agreement
d) If there are multiple unions, determined via an agreement amongst all the unions

12. Replacing a Member

The procedure for replacing a member of a JWHSC is specified below. If there is a union at the work site, members will be replaced as per the union (or unions') agreement.

a) Announce the departure of the leaving member to the committee
b) Determine the demographic represented by the leaving member
c) Announce the departure to the work site
d) Hold an election to replace the member (ensuring the appropriate demographic)
e) Announce the new member to the JWHSC and the work site
f) Amend any documentation to reflect the change

If there is a union, and the union agreement indicates how a member is to be replaced, the JWHSC will follow the agreement.

13. Coordinating with Other JWHSC

When the employer (or Prime Contractor) establishes multiple JWHSC, the committees will coordinate with each other. The process is outlined below.

a) Committees will determine who will be the liaison between committees
b) The employer (or Prime Contractor) will ensure contact information is shared amongst the JWHSC
c) The liaison will ensure appropriate documentation is shared amongst the committees
d) The liaison will ensure relevant recommendations are shared amongst the committees
e) The liaison will ensure educational and health and safety initiatives will be shared amongst the committees

14. Recommendations to the Employer

Recommendations to the employer will follow the requirements stated below.

a) Written using the approved template
b) Directly related to health and safety
c) Reasonable
d) Clear and complete (ensure the employer will not need more information to make a decision)

15. Dispute Resolution

With the Employer/Prime Contractor

As per s.21 of the OHS Act, when a matter cannot be resolved after written reasons are given by the employer, the employer, the JWHSC, or a member of the JWHSC may refer the concern to an OHS Officer.

Amongst the JWHSC (failure to reach consensus)

When the committee is unable to reach an agreement regarding a health and safety matter (recommendation) the Co-Chairs will contact OHS for advice and clarification.

16. Amendments

These Rules of Procedure may be amended by vote of the committee members.

Status of the Joint Workplace Health and Safety Committee Policy

Status	Created/Approved By	Date (MM/DD/YYYY)
Drafted	Troy Booth – Management Co-Chair	02/10/2020
Reviewed	Arpi's Industries Ltd. JWHSC	02/01/2024

Presidents Approval

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

9.5 MANAGEMENT SAFETY COMMITTEE MEETING POLICY

The purpose of this policy is to establish a standard for conducting annual management safety committee meetings. The committee will be comprised of; The company president, safety department manager, safety coordinator, and the department manager from each company department. The committee will be chaired by the safety department manager.

- An agenda and summary of relevant information will be developed prior to each meeting and distributed to each of the committee members for review.
- The main purpose of this meeting will be to review the Company's safety performance (Including COR Audit Results) over the past year and set goals for the following year
- During the meeting the committee members are encouraged to bring up questions regarding the distributed information and any concerns or suggestions they have regarding the safety program.
- It is imperative that committee members make every possible effort to attend all meetings. A regularly scheduled meeting time will be assigned and agreed upon by all committee members.
- Minutes of all management safety committee meetings will be distributed to senior management for review.

At all times, the committee members shall reference the latest version of the Alberta OH and S Act Regulation and Code.

Julie Berdin, President

February 26, 2024

Date

9.6 HEALTH AND SAFETY REPRESENTATIVE (HSR) POLICY

The purpose of this policy is to determine when an HSR is required on a worksite, how the HSR is selected, what training the HSR must be provided, and the responsibilities of the HSR.

Requirements

On any jobsite lasting longer than 90 days that will have an average workforce of 5 or more an HSR must be designated

Selection

The workforce will be asked to nominate one of the workers to become the HSR. If only one person is nominated and they accept the role they will become the HSR. If multiple workers are nominated and they are all willing to accept the role then a vote amongst the workforce will be held. The worker that receives the most votes will assume the HSR role.

Training

All HSR will be provided with training in an approved HSR course.

Responsibilities

1. Receive and consider concerns regarding health and safety
2. Respond to and find solutions for worker concerns
3. Participate in hazard assessments
4. Develop corrective actions
5. Monitor and follow up on corrective actions
6. Promote overall health and safety at the work site
7. Cooperate with OHS officers
8. Establish and promote worker training and education programs
9. Make recommendations regarding health and safety
10. Inspect the work site
11. Participate in investigations of incidents and serious incidents
12. Maintain records of matters related to the duties of the committee
13. Other duties as may be specified the OHS Act, Regulations, and Code

Duties shall be performed during normal working hours.

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

9.7 TOOLBOX/TAILGATE SAFETY MEETING REPORT

6815 40th Street S.E.
Calgary, AB. T2C 2W7
Tel: 403-236-2444
Fax: 403-236-8345

ARPI'S INDUSTRIES LTD. 50 Years of Progress

TAILGATE/SAFETY MEETING REPORT

Department:	# of Attendees:	Date:
Job Site Name:		
Job Location:		
Agenda Items:		
Details of Discussion:		

Attendance List			
Name	Signature	Name	Signature

Checklist	Yes	No
All personnel are wearing PPE appropriate to the tasks they are performing		
All first aid kits are well stocked and fire extinguishers are in good condition		
All required safety equipment is readily available on the jobsite		
All equipment actively in use is in safe mechanical condition		
All personnel are aware of the hazards of their tasks on the site		

Reviewers Comments:

Foreman's Name: _____ Reviewed By – Name: _____

Foreman's Signature: _____ Reviewed By – Signature: _____

White Copy – Safety Dept.
Yellow Copy – Prime Contractor
Pink Copy – Site

Review By – Date: _____

9.8 EMPLOYEE ORIENTATION AND ACKNOWLEDGEMENT FORM

SAFETY ORIENTATION FORM

NAME *

First and Last Name

DATE *

Month Day Year

DEPARTMENT *

Select the option below that corresponds to the department you have been hired by.

- Select -

POSITION *

Select the option below that corresponds with the position you were hired for.

- Select -

EMAIL ADDRESS *

johnsmith@email.com

EMERGENCY CONTACT NAME *

First and Last Name

EMERGENCY CONTACT TELEPHONE NUMBER *

555-555-5555

TOPICS COVERED BY THE ORIENTATION

1. Company Safety Poicy & Corporate Policies
2. Environmental Policy
3. Workplace Harassment Policy
4. Workplace Violence Policy
5. Drug/Alcohol Policy
6. Company Vehicle Policy
7. Disciplinary Action Policy
8. Hazard Assessment Policy
9. Personal Protective Equipment Policy
10. Toolbox/Tailgate Safety Meeting Policy
11. General Safety Rules
12. First Aid
13. First Aid Injuries
14. Medical Aid Injuries
15. OIS Clinics
16. Modified Duties Program
17. Non Work Related Injuries/Medical Conditions
18. Incidents
19. Near Misses
20. Unsafe Acts & Conditions
21. Fatigue
22. Emergency Response Plans
23. Worker Rights and Responsibilities
24. Safe Job Procedures
25. Safe Work Practices
26. Working at Height
27. Confined Spaces
28. Respirators
29. Mobile Equipment
30. Ladders
31. Scaffold
32. Trenches & Excavations
33. Working Alone
34. Hot Work
35. Floor Openings
36. Guardrails
37. Housekeeping
38. Defective Tools
39. Safety – It's Not Just About You
40. WHIMIS 2015 - Generic and Company Specific
41. Other Safety Training

MEDICAL HISTORY *

Please list any medications, medical conditions, and injuries that may affect you ability to perform your duties. If nothing applies enter "N/A"

DECLARATION STATEMENT *

I have been familiarized with the Company Safety Program, and I agree to comply with all policies, procedures, and practices outlined in the Company Safety Manual and abide by the OH&S Act, Code, and Regulation. I further agree to allow my picture to be taken and placed in my personnel file. By typing my name in the box below I declare that this orientation was completed in full by the the named person at the top of this form. I understand that any misrepresentation of myself will be considered a violation of the terms and conditions of my employment and will result in immediate termination of employment

First and Last Name

DECLARATION ACCEPTANCE *

Indicate if you either ACCEPT or REJECT the terms stipulated in the Declaration Statement above. Failure to ACCEPT the terms of the Declaration Statement will result in your offer of employment being rescinded and you will be ineligible for employment with the Company.

○ ACCEPT ○ REJECT

Submit

SECTION TEN: Inspection and Investigation

10.1 INSPECTION POLICY

The purpose of this inspection policy is to establish a standard for inspections at all ARPI'S INDUSTRIES LTD facilities and projects. Inspections are intended to identify, by observations of work practices and site conditions, situations that could cause or contribute to incidents and loss. Inspections are one of the tools used to evaluate compliance, and the effectiveness of our Health & Safety program.

There are two types of inspections, formal and informal.

- Informal inspections are done on a daily basis and completed whenever a supervisor or above walks through an office, shop, yard, or job site. They will observe the conditions present at the time and take an action required for deficiencies they observe. Any delegation of action items must be followed up on to ensure corrective action has been taken. If any serious deficiency or incident is observed immediate intervention must be taken and an investigation may be required.
- Formal inspections are documented scheduled inspections that will look at specific areas of the office, shop, yard, or job site environments. These inspections are completed monthly for all shop, yard, and job site environments by the supervisor and annually for the office environment by the JWHSC. If any serious deficiency or incident is observed immediate intervention must be taken and an investigation may be required.

Any condition that cannot be corrected immediately and is likely to cause injury or damage shall be reported to ARPI'S INDUSTRIES LTD safety department, superintendent, or other management personnel. Any work that is being conducted that can be affected by the observed condition must be stopped until the condition has been corrected.

Inspection schedules, reporting, correction of deficiencies and re-inspection review shall be the responsibility of ARPI'S INDUSTRIES LTD supervisor. All inspection reports shall be reviewed by department management, and forwarded to Health & Safety for file. Any reports with unusual or serious conditions that could affect the company's operations must be escalated for senior management review and action. A copy of the most current monthly inspection report shall be posted in a conspicuous location for all workers to have the ability to view. Corrections from all prior reports are to be updated and noted on subsequent reports.

The following are pre-inspection planning items for consideration; establish a date and time for the inspection. Establish the area to be inspected, and meeting area. Evaluate the need for personal protective equipment. Notify the participants of these requirements.

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

10.2 SAFETY INSPECTION REPORT

Project Name		
Site Address		
Inspector(s)		
Inspector Site Assistance		
Inspection Date & Time		
Number of Personnel on Site		
Nature of Work in Progress		
Weather Condition		
Persons Issued Copies		
ACCESS	**COMMENTS**	**RANK/PRIORITY**
Doorways		
Ramps		
Gates		
Egress Routes		
JHA/SWP/SJP	**COMMENTS**	**RANK/PRIORITY**
FLHA's Completed by All Workers as per requirements		
SWPs/SJPs being followed		
POWER TOOLS	**COMMENTS**	**RANK/PRIORITY**
Condition		
Guards in Place		
Used Properly		
Stored Properly		
MACHINERY & EQUIPMENT	**COMMENTS**	**RANK/PRIORITY**
Annual Inspections		
Daily Inspections		
Condition		
WORK AT HEIGHT	**COMMENTS**	**RANK/PRIORITY**
Harnesses being worn		
Appropriate anchor		
Inspections Completed		
EMERGENCY PLAN	**COMMENTS**	**RANK/PRIORITY**
Workers Know The Plan		
Muster Point		
FIRST AID	**COMMENTS**	**RANK/PRIORITY**
Number of First Aiders meets/exceeds OHS		

First aid kits well stocked and available		
Attendant On Duty		
HOUSEKEEPING	**COMMENTS**	**RANK/PRIORITY**
Work areas are maintained (ARPI's)		
Work areas are maintained (other)		
OREINTATION	**COMMENTS**	**RANK/PRIORITY**
All workers have current prime orientation		
Al workers have current ARPI's orientation		
SAFETY MEETINGS	**COMMENTS**	**RANK/PRIORITY**
Attended by all workers		
Frequency		
Appropriate Topics		
WORK ENVIRONMENT	**COMMENTS**	**RANK/PRIORITY**
Congestion Level		
Noise Level		
WELFARE	**COMMENTS**	**RANK/PRIORITY**
Toilet/Wash Facilities		
General Cleanliness		
SUB-CONTRACTORS	**COMMENTS**	**RANK/PRIORITY**
Sub-contractors are in compliance with requirements		
PPE	**COMMENTS**	**RANK/PRIORITY**
Basic PPE is Worn		
Specialty PPE is worn where required		
Properly maintained		
YARD AREAS	**COMMENTS**	**RANK/PRIORITY**
Tank Storage Cages		
Water/Ice Buildup		

Traffic Congestion		
Laydown Area Housekeeping		
OTHER	**COMMENTS**	**RANK/PRIORITY**

RANK/PRIORITY: 1- LOW 2- MODERATE 3- HIGH NOT APPLICABLE- N/A

CORRECTIVE ACTION	BY WHOM	DUE DATE	COMPLETION DATE

Inspector _____ Signature _____ Date _____

Reviewed By _____ Signature _____ Date _____

10.3 INVESTIGATION POLICY

The purpose of this policy is to establish a standard for investigating incidents so that causes can be determined and corrective actions implemented to prevent recurrence.

POLICY

In this company, the following types of incidents shall be fully investigated:

- Incidents that result in injuries.
- Incidents that cause property damage or interrupt operation.
- Incidents that have the potential to result in (1) or (2) of the above (Near Miss).
- Occupational Illness.
- Work Refusals.
- All incidents that, by regulation (see below), must be reported to OHS, WCB, or their regulatory agencies.

RESPONSIBILITIES

- All employees shall report any incidents to their immediate supervisor.
- Supervisors shall conduct initial investigation and submit reports to the safety department and Project Manager promptly.
- Safety department and management shall review all investigation reports to ensure they are completed properly and corrective actions suggested have appropriately addressed the cause of the incident.
- Corrective actions for the particular incident shall be corrected in a timely manner. Follow up of incident and the corrective action shall be discussed and include in the minutes of the next scheduled toolbox/safety meeting.

APPLICABLE OHS REGULATIONS

The injuries and accidents to be reported to the OHS immediately are;

a) an injury or accident that results in death,
b) an injury or accident that results in a worker being admitted to a hospital,
c) an unplanned or uncontrolled explosion, fire or flood that causes a serious injury or that has the potential of causing a serious injury,
d) the collapse or upset of the crane, derrick or hoists, or
e) the collapse or failure of any component of a building or structure necessary for the structural integrity of the building or structure.

OHS Health and Safety Act section 18 (6) except as otherwise directed by a director of inspection, and occupational health and safety officer or a peace officer, a person shall not disturb the scene of an accident report under subsection (1) except in so far as is necessary in:

a) attending to persons injured or killed,
b) preventing further injuries, and protecting property that is endangered as a result of the accident.

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

10.4 INVESTIGATION REPORTING

THE NATURE OF ACCIDENT INVESTIGATION

Accident investigation is possibly one of the most misunderstood procedures in the industry today. In far too many instances it is confined to finding out what happened with too little consideration to why and how the accident occurred. Frequently the entire investigation consists only of a few questions to the injured employee and any available witnesses.

An accident investigation is a systematic effort to determine all relevant facts and interpretations regarding how and why an accident occurred. The knowledgeable investigator knows in advance the general kinds of information he seeks. He tried to get his information from all available sources, e.g. the injured person, witnesses, the accident scene and even re-enactment of the accident, when necessary. He doesn't accept what people say at face value. Instead he evaluates the plausibility and soundness of his information by applying yardstick of his experience, knowledge and judgment. He then reports his version of what happened, how it happened, why it happened and what must be done to prevent the accident from recurring. Such an approach is far different from merely getting the centrally involved worker's account of the accident.

THE PURPOSE OF ACCIDENT INVESTIGATION

Two mistaken view- points about accident investigation are often found among Site Managers and Foremen. The first sees the accident investigation mainly as a means of completing an accident or claims report form.

The second mistaken viewpoint sees the accident investigation as a fault- finding expedition. An accident occurred, therefore, someone is at fault. Therefore, it has to be investigated to find out who is at fault. This fallacy is one of equating placement of responsibility with accident investigation. Such a viewpoint de-emphasizes the constructive nature of an accident investigation. It leads to lopsided investigations that look no further once blame can be placed. The person blamed, of course, is usually the injured worker.

The real purpose of an accident investigation is to establish all relevant facts and opinions as to how and why an accident occurred so that conclusions can be drawn about what must be done to prevent recurrence. Preventing recurrence is the true objective of the accident investigation. Every investigator should keep in mind that they are fact-finding, not fault finding. The search for accident facts is really the search for a solution to prevent recurrence.

THE TIME FOR ACCIDENT INVESTIGATION

Accidents should be investigated as soon as practical after their occurrence, the less delay, the better. The more time that is allowed to lapse before questioning personnel involved and witnesses, appraising the scene of the accident, or re-enacting the accident, the greater is the risk of not getting the true story of what happened and why. People forget accident details very quickly, particularly under the impact of emotional shock. They also imagine details that in fact, did not occur. They add "facts", fill the gaps, and stretch the truth. Oddly enough, they usually do so without being aware of it.

This implication is clear. The injured person's version of an accident should be obtained as soon as practical, before his memory distorts what really happened. Similarly, witnesses should be questioned individually and with as little delay as possible. The scene of the accident should be appraised promptly before clues as to what happened are removed.

There are two exceptions to questioning the injured person first and that is, when they require immediate medical attention and when they are in severe pain. Start your investigation elsewhere, e.g. witnesses of the accident.

WHO SHOULD DO THE INVESTIGATION

The investigation of accidents is properly the responsibility of all levels of management. Serious injury or equipment damage accidents are usually investigated by the Safety Supervisor and Site Manager. First and second line supervisors usually investigate accidents that involve non-disabling injuries or minor equipment damage. It is also common for the lower levels of supervision to conduct preliminary investigation of disabling injury accidents. More will be said about this division of responsibility later.

Why should Site Managers and Foremen be made responsible for investigations of accidents which occur under their supervision? There are several reasons why:

1. Supervisors are close to jobs, working conditions and workers. First-line supervisors are naturally qualified to investigate accidents because of their daily contact with jobs, working conditions and men. They know the details of jobs, procedures, hazards, environmental conditions and unusual circumstances. They know their men, their job experience, personal characteristics and job language. While such knowledge does not ensure that first-line supervisors will make expert accident investigators, it does provide a background for good investigation.

2. Requiring first-line supervisors to investigate accidents that occur under their supervision emphasizes their responsibility for accident prevention. Some companies require clerks; first aid or safety personnel to complete minor injury accidents reports instead of having first-line supervisors investigate such accidents. This is a mistake. It tends to undermine supervisor's sense of responsibility for accidents.

3. Supervisors need to learn about accident causes. To investigate accidents means to learn about hazards, causes and accidental circumstances likely to occur again. Who needs to know more about such things than first-line supervisors? They are the ones who must train new worker, check for unsafe practices, look for unsafe acts and conditions, remind worker about hazards and generally act to prevent accidents. By investigation, they learn how to prevent hazards.

4. Supervisors need to act to prevent recurrence of accidents. Most corrective actions to prevent recurrence of accidents, e.g. re-instruction of safe job procedures, elimination of unsafe conditions, correction of the source of the unsafe act, etc. are taken or ordered by the supervisor. When such supervisors don't investigate the accidents, or at least actively participate in the investigations, many of the corrective actions simply don't take place. This is especially so in the case of minor injuries. Perhaps, as a supervisor, many have wondered on occasion why they should be saddled

with the chore of investigating accidents. Well, the foregoing covers this as they have the opportunity, authority and responsibility.

WHAT TYPE OF ACCIDENTS SHOULD BE INVESTIGATED

The serious or major accidents would appear to us to be the main candidate for investigation however, all accidents should be investigated if we are to control work loss in our construction. The minor accidents and near miss accidents are of prime concern in investigation. This type of accident could well be considered your "loss production" barometer as they are generally warning the supervisor of conditions or practice which if continues can cause a serious injury or equipment damage accident. The investigation of these accidents should be as thorough as in a major accident, as we must find the cause before we can prevent recurrence.

There is a major problem in the construction industry today with regard to accident investigation and that the problem is "The Unreported Accident." Many workers will not report minor or near miss accidents for fear of supervisor disapproval, getting a bad reputation, not wanting to lose time off the job, fear of medical treatment, fear of being called accident prone, ridicule from fellow workers, etc. Remember an unreported accident means:

a) Nothing is learned from the experience.
b) Accident causes are not corrected.
c) Infections and injury aggravation result.
d) This "failure to report" attitude could spread.

SPECIFIC POINTS WITH REGARD TO ACCIDENT INVESTIGATIONS

1. Take control of the scene and reassure the injured party.
2. Never leave an injured person alone!
3. Ensure that any injured person is cared for and an ambulance is called if necessary.
4. Examine equipment/materials involved.
5. Interview people involved. All witnesses should be interviewed alone and signed statements obtained as soon as possible.
6. Analyze all available information to determine the causes.
7. Look for all causes; including all workers actions, equipment or system error or malfunction.
8. Ensure adequate photographic records are compiled.
9. Determine what corrective action will prevent recurrence.
10. Complete the Injury Incident Report form and submit it to the Safety Supervisor by the end of the work shift during which the accident took place.
11. Conduct a post-investigation review with employees to provide feedback.

MINOR INJURIES

All injuries, no matter how minor, should be given first aid and an investigation report should be completed. Minor accidents can become major accidents. All accidents should be investigated, the cause determined and corrective action taken to prevent recurrence.

PROCEDURES FOR ACCIDENT REPORTING

1. Investigate The Accident as promptly as possible.
2. Go to the scene of the accident for initial investigation.
3. Ensure debris is not liable to cause further accidents.
4. Try to have the scene kept as undisturbed as possible.
5. Take photographs, make drawings and take measurements.
6. Gather all witnesses; interview them one at a time.
7. Reassure each witness of the real purpose for the investigation, i.e. “this is a fact finding, not fault finding process”. The purpose is to find out what went wrong and to take the necessary steps to prevent it from happening again.
8. Be objective; don’t form any fixed opinions in advance.
9. Witnesses should be encouraged to be completely frank and open in the giving of information.
10. Do not put words into the witnesses’ mouth.
11. When interviewing the witnesses, get their versions with as little interruption as possible other the n ensuring you have understood the exact chronological sequence of events.
12. When the witnesses finish giving their statements, ask questions to fill in any gaps.
13. Before drawing conclusions, review the witnesses’ statements with them.
14. Before finalizing conclusions, ensure all the facts have a local place in the sequence. One item that does not fit the picture means the investigation is incomplete and the conclusions may be totally wrong.

NOTE: The information printed on the Injury/Incident Report Forms should be used in conjunction with this procedure to ensure a complete and effective investigation is conducted.

EVENTS THAT MUST BE REPORTED AND INVESTIGATED

Events that fall within the following categories, involving Arpi’s Industries Ltd. employees or subcontractors performing a task on or off the work site and/or involving the public, MUST be reported to a supervisor immediately.

- Fatality or serious risk of death.
- Major structural failure or collapse (bridge, building, tower, crane, hoist, temporary construction support system, or excavation).
- Major release of a toxic or hazardous substance.
- Explosion.
- Injury.
- Property Damage.
- Near Miss.
- Occupational Illness
- Work Refusals

POLICY FOR NOTIFYING NEXT OF KIN IN THE EVENT OF A FATALITY OR SERIOUS ACCIDENT

ARPI’S INDUSTRIES LTD is responsible for doing everything possible to ensure a Company representative is the first person to tell the next of kin that a serious accident has occurred involving a family member. The Company representative should tell them what hospital the

family member was taken to and who to contact. No other details should be provided at this time. A discussion of personal affairs should be left until an alternate date when an offer of assistance can also be made.

COMPLETION OF FORMS AND REPORTS

A copy of the WCB form must be forwarded within 24 hours; the remaining completed forms and reports must be forwarded within three (3) working days. Consult your applicable authority for filing requirements.

The following is a guideline for completing ARPI'S INDUSTRIES LTD and Worker's Compensation forms:

1. All WCB reports are to be completed by site personnel and sent directly to the safety department.
2. The Injury/Incident Report Form is to be completed according to guidelines on the forms.
3. The Claim Number, when assigned by the Workers' Compensation Board, must be shown on all correspondence and additional forms sent to the Board.
4. The worker continues to be an employee and if unable to return to pre accident duties, modified work will be coordinated through the safety department.
5. The worker is still our responsibility until he is back to full duties (modified or light duties must be used where applicable).
6. The safety department is responsible for obtaining current reports for an injured worker.
7. The safety department must retain copies of all Workers' Compensation Board forms in an active WCB file for workers who have been injured and are unable to return to work. This information is confidential and should be locked. The safety department must maintain contact with injured workers to ascertain their progress towards complete rehabilitation. Confidentiality must be maintained.

EMPLOYEE REQUIREMENTS

1. Employees are required to report immediately any accidents and/or injuries to their supervisor, as well as seek First Aid, no matter how minor the injury.
2. If injured on the job site, an employee must fill out any Workers' Compensation forms prescribed by legislation.
3. Any injuries sustained outside of work must be communicated to your supervisor if they have the ability to affect your regular duties.

WCB EMPLOYER'S REPORT OF ACCIDENTS OR INDUSTRIAL DISEASE

This form must be completed by the ARPI'S INDUSTRIES LTD Safety Department for every WCB accident that occurs on your site and must be prepared and submitted with 72 hours.

It is extremely important to fill out the accident report forms as completely and accurately as possible. When there are circumstances pertinent to the accident which the company or the WCB should be made aware of, include such information in your report. The Workers' Compensation Act is based on the premise of a **"No Fault"** system. If it is **"likely"** the employee was injured on the site while working, he will be paid benefits. The onus is on the employer to provide evidence that the

injury did not occur on his premises during the course of employment or in the manner described by the employee. Detailed documentation is extremely important in fraudulent or bogus claims. Information must be verifiable.

If this information is not included, the Company can only assume your report is covering a legitimate accident and will instruct the Board to process the report for compensation payment.

If your concerns about the legitimacy of the claim are expressed, the Company will ask the Board to investigate the accident further before compensation is paid. For example, if an employee is injured after he has been notified he is to be laid off, provide this information on the form.

REPORTING ACCIDENTS INVOLVING PRIVATE PROPERTY OR PERSONAL INJURY TO NON-EMPLOYEES
All damage to private property or personal injury to a non-employee must be reported immediately to the Safety Supervisor. The Safety Supervisor will contact the appropriate Site Manager to verify the details of the accident.

Accurate reporting of accidents saves time and money and reduces the chance of a repeat occurrence.

POLICY REGARDING PRODUCTIVE LIGHT DUTY-MODIFIED WORK
The WCB encourages employers to have injured employees remain on the job if possible. Statistics suggest that healing and recovery time is greatly reduced and an employee returns to active employment much faster if he/she can remain on the job doing some type of modified, productive work. Productive and meaningful light duty is available and encouraged on our sites provided all the conditions listed below are met:

1. Complete recovery is expected within a reasonable period of time.
2. The employee is able to report for his full shift each day or major portion thereof.
3. Productive light duty is available on the site and the work performed will benefit the project or the Site.

SITE MANAGER'S RESPONSIBILITY FOR AN INJURED EMPLOYEE DURING REHABILITATION
At the time of injury, "Light Duty-Modified Work Duty" should be discussed with the physician and the injured employee. The attending physician should also be asked to complete the "Medical Treatment/Modified Work" form (if possible, have the injured employee take the form with him/her to the doctor). As needed the supervisor is required to complete a "Physical Demands Analysis" of the worker's regular job. A copy of this completed form should accompany the Medical Treatment/Modified Work Form to assist the physician in making his assessment of the worker's ability to return to work.

The safety department must contact the injured employee or the employee's physician regularly to keep informed as to the employee's condition and his expected date of return. An employee who is subject to long rehabilitation should be contacted, either by phone or visited at least once a month by the safety department to monitor his progress. Copies of letters and reports of contacts must be sent to the safety department.

REPORTING NON-WORK RELATED ILLNESS AND/OR INJURY

Any non-work related illness and/or injuries that have the potential to affect a worker's ability to work regular hours and/or duties must be reported to a supervisor immediately. When this occurs the worker must obtain a medical note from their doctor that includes the following information;

- The date of the examination
- The details of the illness and/or injury
- The details of exactly what impact and/or restrictions the illness and/or injury will have on the workers regular hours of work and/or duties
- An estimated timeline to full recovery

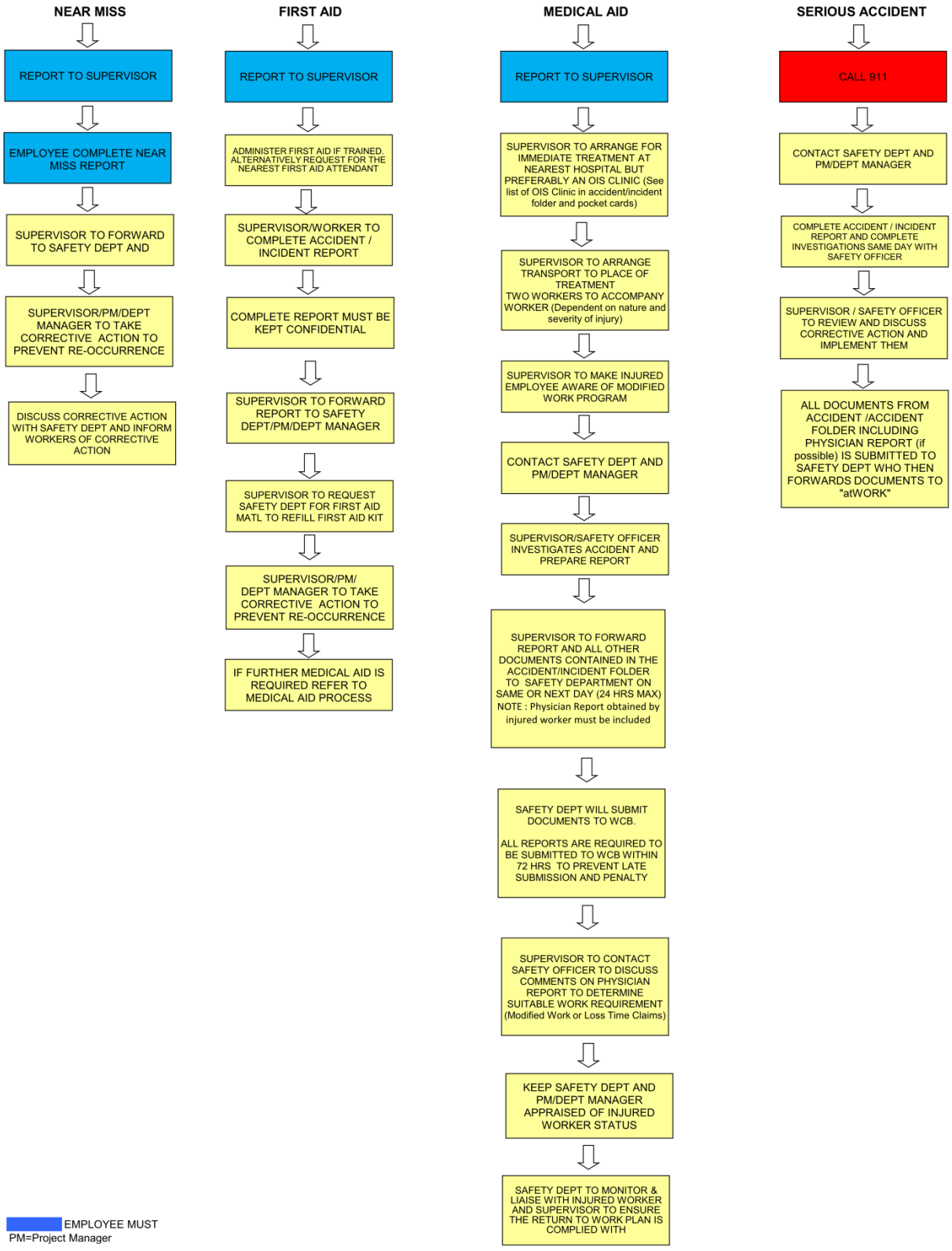
Once the note is received the department manager will determine if the worker is eligible to continue work at full duties or modified duties. If the department manager determines that the worker poses too high a risk to themselves and/or other workers to remain in the workplace during their recovery than the worker will be sent home for the duration of their recovery. A layoff for illness/injury will be given as an option to the worker to assist with their income during their recovery.

If a worker is put on modified work or removed from work for the duration of their recovery they will only be allowed to return to full regular duties once a medical note is received clearly stating that they are fully recovered and capable of returning to regular duties.

SUMMARY OF ACCIDENT REPORTING PROCEDURES

To be certain all accidents are properly dealt with, it is necessary to formalize the reporting procedure and complete the appropriate forms in the necessary order at the time of the accident. When an accident occurs, it is mandatory to provide medical aid to the injured employee and return him to the job as soon as possible. This includes all types of accidents; from that requiring minor first aid treatment to the most severe injuries requiring both hospitalization and doctor's treatment.

10.5 INCIDENT REPORTING PROCESS



10.6 AUTO ACCIDENT REPORT

The Insured	**ARPI'S INDUSTRIES LTD** 6815 40 Street SE Calgary, AB T2C 2W7 **Unit #**
The Vehicle	Year & Make: _____Type: _____ Serial #:_____ Estimate: $_____ License # : _____Province: _____ Mileage: _____ Purpose Car used for at time of accident: _____ Parts Damaged: _____ Where was car taken after accident? _____
The Driver	Name: _____Age: _____Phone: _____ Is driver impaired?_____ Address:_____ Driver license # :_____ Was permission to drive granted?_____ What is relationship of driver to insured_____
Time and Place of Accident	Date of Accident:_____Time:_____Did police investigate?_____ Report #: _____ Location: _____
Other Party	Owner's Name: _____ Address: _____ Phone #: _____ Driver's Name: _____ Address: _____Year & Make:_____ License #: _____ Estimate: $ _____ Kind of property damage: _____Is person insured? _____ Insurance Co. _____Policy #_____Phone:_____

Persons Injured	Name(s):_____ Address (es): _____ Age: ____ Sex: ____ Dependants: ____ Occupation: _____Phone: _____ Age: ____ Sex: ____ Dependants: ____ Occupation: _____Phone: _____ Employer: _____ Employer: _____ Nature of injuries: _____ If attended by doctor give name and address:_____				
Important **Passengers & Other Witnesses Name & Address**	**Name**	**Address**	**Phone**	**State if occupant of your car or other car**	**Independent**

NAME _____ NAME _____ NAME _____

ADDRESS _____ ADDRESS _____ ADDRESS _____

PHONE _____ PHONE _____ PHONE _____

In which car? (circle one) In which car? (circle one) In which car? (circle one)

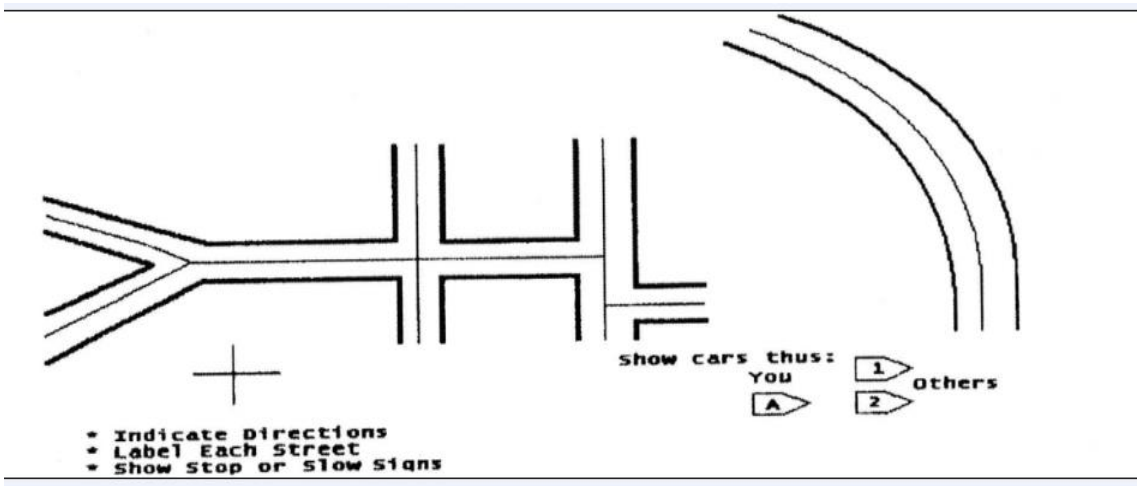
Your car Other Car#___ Your car Other Car#___ Your car Other Car#___

DESCRIPTION OF ACCIDENT

Illustrate position

Illustrate position of cars at time of collision. Show skid marks.

If any street is more than two-lane or is one way only, please indicate.



_____

_____

_____

_____

Date:_____ Signature of Driver: _____

TO BE COMPLETED BY POLICY HOLDER

Who is the principle Driver of your Vehicle? _____

What is driver's relationship to you? _____

Was vehicle being used with your consent? _____

Lien or mortgage on vehicle ?

FINAL RELEASE

Date: _____ Signature of Policy Hold:_____

This release is in respect of damages for: _____

Vehicle Damages

Personal Injury

In consideration of the payment for the sum of:

_____$ _____

And which is directed by the undersigned to be paid as follows:

_____ $ _____

The undersigned hereby for themselves, their heirs, executors, administrators, successors, and assigns:

1. Release and forever discharge ARPI'S INDUSTRIES LTD, (herein referred to as the "Releasee") from any action, cause of action, or claim for damages specified above where the injury or, as the case may be, the damage, has been sustained as at the date hereof or may be sustained thereafter, as a result of an incident taken place in _____on or about the ____ day of _____, 20__.
2. Agree not to make any claim or take proceeding against any person or corporation who might claim contribution or indemnity under provisions of any statute or otherwise.
3. Agree that the said payment does not constitute an admission of liability on the part of the Releasee; and
4. Declare that the terms of this settlement are fully understood, that the amount stated herein is the sole consideration of this release and that such amount is accepted voluntarily as a full and final settlement of the claim for damages specified above.

Signed at_____ this ____ day of _____ 20____.

SIGNATURE: _____

PRINT NAME: _____

10.7 INCIDENT REPORT

Employee Name: _____ **Telephone:** _____

Occupation: _____ **Department:** _____

Location: _____ **Employer's Name:** ARPI'S INDUSTRIES LTD

Address: 6815 40th St. SE, Calgary, Ab. T2C 2W7 **Telephone:** 403-236-2444

Supervisor: _____ **Contact Number:** _____

Date of Incident: _____ **Time of Incident:** _____

Description of Event: (Please attach a sketch of how this incident occurred) _____

What was the direct cause of this incident? _____

What were the indirect causes of this incident?

What corrective actions must be taken to prevent a similar incident from occurring?

Date of next toolbox meeting? (All incidents must be reviewed in toolbox meetings to prevent similar incidents from occurring. Please note that this incident was reviewed on your toolbox meeting report)

Supervisor's Signature

Employee's Signature

Date

Date

Reviewed By(Name, Position, Signature, Date):

Note: **This Report must be filled out by a supervisor and signed by both the supervisor and the employee. All sections must be completed. Any incomplete reports will be returned for correction.**

Please draw a sketch of the incident.

10.8 INJURY REPORT

Employee Name: _____ **Telephone:** _____

Occupation: _____ **Department:** _____

Location: _____ **Employer's Name:** ARPI'S INDUSTRIES LTD

Address: 6815 40th St. SE, Calgary, Ab. T2C 2W7 **Telephone:** 403-236-2444

Supervisor: _____

Contact Number: _____

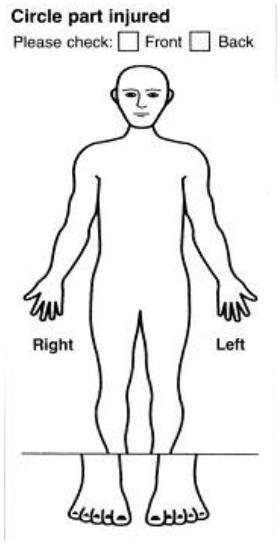
Date of Injury: _____

Time of Injury: _____ **am** ☐ **pm** ☐

Nature of Injury

- ☐ **Open Wound**
- ☐ **Sprain/Strain**
- ☐ **Dislocation**
- ☐ **Burn**
- ☐ **Puncture**
- ☐ **Fracture**
- ☐ **Bruise**
- ☐ **Pinch**
- ☐ **Foreign Object in Eye**
- ☐ **Other (Please Specify)**

Area of Injury (Indicate area of injury on the drawing to the right)



Description of injury (Please only describe the nature of the injury in this section):

_____

_____

_____

_____

_____

_____

_____

_____

Treatment Administered

	Yes	No	
First Aid	☐	☐	**If YES, administered by:** _____

Nature of First Aid: _____

_____

Referred for further medical attention: Yes ☐ NO ☐

Description of Event: **(Please attach a sketch of how this incident occurred)** _____

What was the direct cause of this incident? _____

What were the indirect causes of this incident? _____

What corrective actions must be taken to prevent a similar injury from occurring? _____

Date of next toolbox meeting? **(All incidents must be reviewed in toolbox meetings to prevent similar incidents from occurring. Please note that this incident was reviewed on your toolbox meeting report)**

_____

Supervisor's Signature	Employee's Signature
Date	Date

Reviewed By(Name, Position, Signature, Date)**:** _____

Note: **This Report must be filled out by a supervisor and signed by both the supervisor and the employee. All sections must be completed. Any incomplete reports will be returned for correction.**

Please draw a sketch of the incident.

10.9 NEAR MISS REPORT

Employee Name:_____ **Telephone:**_____

Occupation:_____ **Department:**_____

Location: _____ **Employer's Name:** ARPI'S INDUSTRIES LTD

Address: 6815 40th St. SE, Calgary, Ab. T2C 2W7 **Telephone:** 403-236-2444

Supervisor:_____ **Contact Number:**_____

Date:_____ **Time:**_____

Reported To:_____

Description of Near Miss:_____

What was the direct cause of this incident?_____

What were the indirect causes of this incident?_____

What corrective actions must be taken to prevent a similar injury from occurring?_____

Date of next toolbox meeting? **(All incidents must be reviewed in toolbox meetings to prevent similar incidents from occurring. Please note that this incident was reviewed on your toolbox meeting report)**

_____ _____

Supervisor's Signature Employee's Signature

_____ _____

Date Date

Reviewed By(Name, Position, Signature, Date):_____

10.10 WITNESS STATEMENT

Employee Name: _____ **Telephone:** _____

Occupation: _____ **Department:** _____

Location: _____ **Employer's Name:** ARPI'S INDUSTRIES LTD

Address: 6815 40th St. SE, Calgary, Ab. T2C 2W7 **Telephone:** 403-236-2444

Supervisor: _____ **Contact Number:** _____

Date of Incident: _____ **Time of Incident:** _____

Account of Incident: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____ _____

Signature of Witness Date

Reviewed By(Name, Position, Signature, Date): _____

Note: **This Report must be filled out and signed by the witness only. All sections must be completed. Any incomplete reports will be returned for correction.**

SECTION ELEVEN: Injury and WCB Claims

11.1 CLAIM REPORTING INSTRUCTION

When an employee is hurt:

There are some things to remember when an employee gets injured on the job.

1. The worker will get **full pay** for the date of injury providing they were on time for their shift. If the worker shows up late for work, he / she will get compensated for the time they started to the end of their regular shift.

2. **An injured worker will be escorted by a supervisor/foreman to the clinic or hospital.** When critical a second first aider will accompany the injured worker. If the worker is unconscious, unresponsive, or unable to move, an ambulance should be called. Call **911,** then please contact the safety department for further assistance

3. **Modified work must be offered to the injured worker upon approval of the treating physician**. If a worker is unable to do his full regular duties, modified lighter duties will be offered such as blue print reading, paperwork, filing, light clean up, organizing stock etc. It is a requirement of employment that the injured worker and supervisor accompanying the worker make the physician aware of this policy.

4. **All reportable injuries must be reported to the WCB**. A reportable injury is any injury requiring medical aid at a clinic or emergency room. If first aid is sufficient the injury does not have to be reported to the WCB but an Accident/ Incident Report should be filled out and handed in to the Safety Department within 24 hours. It is a requirement that if a worker is injured that the worker must report the incident the day it occurs.

5. **Injuries or incidents that are not reported that same work day could be subject to disciplinary measures.**

6. **Accurately report the injured workers disability status at the time of submitting the Employers Report of Injury.** At the top of the employers and workers reports are the check boxes for lost time and modified duties. The employers report is usually filled out by the Safety Department and they will investigate on site or contact the injured workers supervisor for information.

7. **All injuries requiring medical aid must be reported to the WCB within 72 hours.** This means once the supervisor has been informed of the injury that is when the 72 hour clock starts.

8. **During regular work hours and whenever practical the injured worker should report to an OIS clinic.** Refer to the OIS wallet card provided to all workers.

What paperwork must be filled out when reporting an injury?

An **Injury Report** must be filled out first and sent in to the office. This form can be found in this ARPI'S INDUSTRIES LTD Safety Manual, section eleven. The injured workers' supervisor should fill this out.

A **WCB Workers Report must be filled out** immediately and sent in to the Safety Department so the claim can be filed within the 72 hour time period. Please fill out as completely as possible.

The **Medical Release form** should be filled out by the injured worker as soon as possible.

It is critical that this paperwork be sent in to the office within 24 hours to enable the Safety Department to get the claim filed on time.

A physician/doctor reports, notes or any correspondence needs to be provided to the safety department within 24 hours. It is especially critical prior to a weekend, especially a long weekend as the workday following a long weekend would be too late.

Remember, the clock does not start until the injured workers supervisor is informed of the injury.

If an employee gets injured during his regular shift but doesn't feel it's bad enough to go to the doctor, an Accident / Incident report should be filled out and handed in to the Safety Dept. This way, should the injury worsen, we have a record of it.

If an employee who was injured on the job and goes to his own doctor or a clinic / emergency room after hours or over the weekend, the 72 hour clock does not start until the Company is informed.

An injured worker shall provide upon their return to work all physician/doctor notes and reports and provide them directly to the Supervisor.

Report all injuries to your supervisor no matter how small they may be.

11.2 MODIFIED WORK POLICY

The purpose of this policy is to establish a standard for the modified work program. ARPI'S INDUSTRIES LTD is committed to protecting from accidental loss all of its assets including employees and physical assets.

In fulfilling this commitment, ARPI'S INDUSTRIES LTD has developed a modified work program assisting ill and injured employees to return to the workplace

The modified work program allows an injured employee to work their full time hours (if approved) and collect full pay while remaining within the restrictions established by their physician.

A modified work agreement must be filled out and signed by the injured employee before modified work can commence. A copy of the signed agreement must be handed into the Safety Department for their records.

Once an employee is approved for modified work, they must show up for their regular scheduled shift. In the event they are unable to work they must contact their supervisor/foremen before the shift begins and provide medical documentation if they expect to be compensated for that shift. It is the responsibility of the employee's manager/supervisor to provide suitable modified duties that will allow the worker to remain within the prescribed restrictions. Any questions please contact the Safety department.

Should the worker be required to go to any appointments related to the claim, appointments must be scheduled for either before or after the regular work shift whenever possible. If an employee must go to an appointment related to the claim during their regular shift it is expected that the employee will work up to one (1) hour prior to the appointment and return no later than one (1) hour upon completion of the appointment.

A worker on modified duties must report to their supervisor all upcoming appointments.

Julie Berdin

Julie Berdin, President

February 26, 2024

Date

11.3 MODIFIED DUTIES FORM

Date: _____ WCB Claim #:_____

Employee Name: _____

ARPI'S INDUSTRIES LTD is committed to providing transitional work, following a workplace injury; we understand our obligations and agree that providing appropriate work to meet your physical capabilities/demands is the most positive approach to successful rehabilitation, and return to pre-accident duties.
In order to accommodate your requirement of modified work due to the accident, which occurred on _____ we are offering you the following position:

Modified Duties will include:

_____
_____
_____
_____

Expectations:

If you must attend an appointment related to your claim during working hours you will be allowed to leave 1 hour prior to the appointment and are expected to return to work one hour after the completion of your appointment
Prior to being able to leave work for any reason during working hours you must get authorization from your supervisor. Failure to do so may result in pay being withheld as non-claim related hours.

Job Title: _____ Supervisor:_____

Start Date:_____ Alt. Supervisor:_____

Hours of work: _____ Days of Work: _____

Rate of Pay: _____

Supervisor Signature: _____ _____
(Print name)

Fill out the appropriate section below to indicate either acceptance or refusal of modified duties.

I (print name) _____ (the employee) having reviewed the modified work policy am **willing to accept** modified duties, which my employer is offering to me.

Signature:_____ Date:_____

I (print name) _____ (the employee) having reviewed the modified work policy am **refusing to accept** modified duties, which my employer is offering to me.

Signature:_____ Date:_____

11.4 MEDICAL RELEASE FORM

INTRODUCTION

All transactions at ARPI'S INDUSTRIES LTD involving the handling of personal data are regulated by the Alberta Personal Information Protection Act (PIPA) and the Federal Protection of Personal Information and Electronic Documents Act (PIPEDA) both of which govern the collection, use and disclosure of personal data. The company privacy policy can be found in our employee handbook.

We require that you sign this medical release form so that we may receive and review any medical documents related specifically to your most recent workplace injury.

Section 1: Release of Information (To be completed by employee)

I respectfully request and authorize my treating physician, his or her agents and employees and any other medical personnel to furnish to my employer ARPI'S INDUSTRIES LTD its agents or employees, any and all medical reports, and other related information, in his or her custody, possession or control related to any illnesses or injuries that I have incurred while employed by ARPI'S INDUSTRIES LTD which is a workplace injury. I further authorize you, your agents and employees to discuss the contents of such records or reports or other related information and to provide orally, any additional information to be used in processing this workplace injury claim.

Further, I understand that I have a right to receive a copy of this release upon my request and that this release deals with my most recent workplace injuries only.

Name of Employee: _____

Signature of Employee:_____ Date: _____

Home Address: _____

Telephone: _____

Section 2: To be completed by HCS Officer

Name of HCS Officer: _____

Signature of HCS Officer:_____ Date:_____

11.5 WCB WORKERS REPORT

WCB Workers' Compensation Board Alberta

PO BOX 2415
EDMONTON AB
T5J 2S5
Phone: **780-498-3999** (in Edmonton)
1-866-922-9221 (toll free in Alberta)
Fax: **780-427-5863** or **1-800-661-1993**

March 2008

WORKER'S REPORT
of Injury or Occupational Disease C060

Seven Digit Claim #:

Worker Information Past the day of injury: Have you been off work? ☐ Yes ☐ No Have your work duties been modified? ☐ Yes ☐ No

Last Name:	Former Name: (e.g., Maiden Name)	First Name:	Initial:
Address:	Apt #:	Social Insurance #:	
City:	Province: Postal Code:	Health Care #:	Province:
Daytime Phone:	Evening Phone:	Date of Birth: (Year / Month / Day)	Sex: ☐ M ☐ F
Occupation and Job Title at time of injury:		Self employed? ☐ Yes ☐ No → If yes, WCB-Alberta account #:	
E-mail address:		Apprentice? ☐ Yes ☐ No	

Employer Information

Business Name or Government Department:			
Mailing Address:			Fax:
City:	Province:	Postal Code:	Phone:

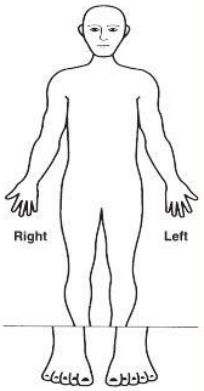
Injury or Occupational Disease Information

1. Date and time of injury: (Year / Month / Day) Time: ☐ a.m. ☐ p.m. **or** ☐ This condition developed over a period of time.
   Scheduled hours of employment on the day of accident: From: To:
2. When was someone at your place of employment notified of your injury? (Year / Month / Day) Time: ☐ a.m. ☐ p.m.
   Name of person and their position: Phone:
   If not reported immediately, give the reason:
3. Did the injury occur on your employer's premises? ☐ Yes ☐ No Did the injury occur in Alberta? ☐ Yes ☐ No
   Location where the accident happened (address or general location):
4. Was the work you were doing for the purpose of your employer's business? ☐ Yes ☐ No If yes, was it part of your usual work? ☐ Yes ☐ No
   Please check the box that best describes the physical demands of your work: ☐ Sedentary ☐ Light ☐ Medium ☐ Heavy ☐ Very Heavy
   (see detailed description on page 20 of the Worker Handbook)
5. What part of your body was injured? (hand, eye, back, lungs, etc.) ☐ Left side ☐ Right side
6. What type of injury is this? (sprain, strain, bruise, etc.)
7. Describe fully what happened to cause this injury or disease. Describe what you were doing and include any tools, equipment, materials, etc. you were using. State any gas, chemicals or extreme temperatures you have been exposed to:

If you have more information or a list of witnesses, please attach a letter. Please check this box if letter attached. ☐

8. Have you had a similar injury before? ☐ Yes ☐ No **If yes, attach a letter with details.**
9. Have you reported or claimed this injury to another WCB? ☐ Yes ☐ No If yes, which Province or Territory?
10. Full name of treating hospital or healthcare professional:
    Address:
    Phone: Date of first medical treatment: (Year / Month / Day)

Circle part injured
Please check: ☐ Front ☐ Back



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Complete all three pages and sign the form before sending.

If your injury is the result of a motor vehicle accident, complete the Motor Vehicle Accident Report (L-054).

WORKER'S REPORT

Page 2 of 3

Your Last Name: First Name: Initial:

Social Insurance #: Date of Birth: (Year / Month / Day) Phone:

Time Lost / Return to Work Information

PLEASE COMPLETE ALL THAT APPLY

11 a. Date and time you first missed work: (Year / Month / Day) Time: ☐ a.m. ☐ p.m.

b. Will/did your employer pay you while off work? ☐ No ☐ Yes, pre-accident wages ☐ Yes, but revised rate: $ per

c. Is there any other work you can do until you are medically fit to return to your regular job? ☐ Yes ☐ No

If yes, who can we call to discuss alternate work on your behalf? Phone:

d. If you have not returned to work give the expected return to work date: (Year / Month / Day)

e. If you have returned to work, indicate the date: (Year / Month / Day) Time ☐ a.m. ☐ p.m. ☐ Regular work, or ☐ Modified work

f. If back on modified work, are you: Being paid your pre-accident rate of pay? ☐ Yes ☐ No – provide rate: $ per

Working pre-accident hours? ☐ Yes ☐ No – provide hours: per

Type of Employment

(Complete A or B or C)

12 A Permanent position employed 12 months of the year: ☐ Permanent full-time ☐ Permanent part-time

or **B** Non-permanent position employed only part of the year (subject to seasonal or lack of work layoffs):

☐ Seasonal worker ☐ Temporary position ☐ Casual as needed ☐ Summer student ☐ Volunteer

Had this injury not occurred, your last day of employment would have been: (Year / Month / Day) ☐ Estimated or ☐ Actual

Did you have any other earnings, or income from any other employers, during the last 12 months? ☐ Yes - Please attach copies of pay stubs and/or T4 slips

or **C** Special employment circumstance:

☐ Contractor/sub contractor ☐ Vehicle owner/operator ☐ Welder owner/operator ☐ Commission ☐ Piece work ☐ Other/self-employed

Do you incur expenses to perform the work (materials, tools, etc.)? ☐ Yes ☐ No Will you receive a T4? ☐ Yes ☐ No

Note: If you have checked any box in 12C please submit a detailed income and expense statement.

Wage Information

Date you were hired: (Year / Month / Day)

13 a. Your rate of pay at time of accident: $ ☐ Hourly ☐ Weekly ☐ Bi-weekly ☐ Semi-monthly ☐ Monthly ☐ Other

b. Additional taxable benefits:

Vacation Pay	☐ Included in rate of pay	%: ☐	OR	☐ Taken as time off with pay
Stat Holiday Pay	☐ Included in rate of pay	%: ☐	OR	☐ Taken as time off with pay
Shift Premium #1	☐ Amount: $ ☐	→ Paid per:		
Shift Premium #2	☐ Amount: $ ☐	→ Paid per:		
Regular Overtime	☐ Rate: $ ☐	→ Number of hours:	per ☐ Week ☐ Month	☐ Shift cycle
Other	☐ Explain:	→ Amount:	per ☐ Week ☐ Month	☐ Shift cycle

c. Do you have a second job? ☐ Yes ☐ No If yes – Employer's Name: Phone:
(Second employer may be contacted.)

d. Did you miss time from this second job? ☐ Yes ☐ No If yes, please attach earning information and time missed details.

Hours of Work

14 a. Number of hours (not including overtime): ☐ per ☐ Day ☐ Week ☐ Shift cycle ☐ Other

b. Does the work schedule repeat? ☐ No ☐ Yes → Mark hours worked for one complete work schedule (use zero for days off)

Average hours worked per week: ☐

	Sun	Mon	Tues	Wed	Thur	Fri	Sat
Hours per day							
Hours per day							
Hours per day							

IMPORTANT
Circle day of injury.
See instructions

c. Date shift cycle commenced (Year / Month / Day)

or if your schedule is more than 21 days, attach a copy of the schedule.

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Complete all three pages and sign the form before sending.

WORKER'S REPORT

Your Last Name:	First Name:	Initial:
Social Insurance #:	Date of Birth: (Year / Month / Day)	Phone:

Declaration and Consent

I declare that the information in the *Worker's Report of Injury or Occupational Disease* form will be true and correct.

I understand that:

- While I am receiving any benefits from WCB-Alberta, it is my obligation to inform WCB-Alberta immediately if I return to work of any kind, become capable of working or if there is any other change in my employment status. Work includes but is not limited to any activity in which labour or services are provided, whether or not payment of any kind is received.
- Criminal prosecution may result from any attempt on my part to collect benefits by providing false information, failing to provide information regarding my ability to work, or other fraudulent means.
- My employer may request a review or appeal of any decisions made on my claim and may therefore examine my claim file. My claim file may also be examined by anyone with a direct interest, as determined by WCB-Alberta, or a person or company I have authorized to review my claim file. (To provide authorization, use the *Worker's Information Release* form in this booklet).
- My social insurance number may be used for reporting to Canada Revenue Agency.
- WCB-Alberta may collect information that it considers relevant to determine benefit entitlement, including information pre-dating my accident, from any source including physicians, other health care providers, employer(s) and vocational rehabilitation service providers. This information is collected to determine my entitlement to compensation under the *Workers' Compensation Act*.

WCB-Alberta may use and disclose the information collected to determine entitlement, to provide services and benefits and, as required or authorized by law. This information may be used and disclosed pursuant to the *Workers' Compensation Act* and the *Freedom of Information and Protection of Privacy Act*.

Date: (Year / Month / Day) _____ Name (please print): _____

Signature: _____

Signing the above consent enables the Workers' Compensation Board to process your claim.

NOTE: The information required in the *Worker's Report of Injury or Occupational Disease* is collected under sections 33(a) and (c) of the *Freedom of Information and Protection of Privacy Act* for the purpose of determining entitlement to compensation and for determining employers' premium rates. Questions may be directed to the Claims Contact Centre as noted on the front of this form and on the back of the Worker Handbook. The information provided to the Workers' Compensation Board is protected by the provisions of the *Freedom of Information and Protection of Privacy Act*.

This report form is part of a booklet of information intended to help workers with completing the necessary WCB-Alberta forms and understanding the process. Keep the booklet for your reference.

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SECTION TWELVE: Emergency Preparedness

12.1 EMERGENCY PREPAREDNESS POLICY

FIRST AID

First aid supplies, services and equipment as outlined in the appropriate regulations shall be available at the worksite and shall be checked weekly by the site safety designates to ensure availability and adequacy. Contact the Safety Department for supplies.

All workers shall be informed of the requirements to report all injuries to their Supervisor immediately and to report for first aid treatment immediately. Should medical attention be required, a Medical Treatment/ Modified Work Form are to be taken by the worker for the doctor to fill out and is to be returned to the Supervisor immediately. When appropriate, modified duties will be made available.

The Supervisor shall ensure that adequate and qualified first aid records are maintained, including a current list of qualified first-aiders on the site at all times while work is going on.

The sub-trades are to be advised that they must provide an adequate number of qualified first-aiders in accordance with provincial requirements, and that they must comply with ARPI'S INDUSTRIES LTD. reporting, investigating and documenting procedures.

EMERGENCY PREPAREDNESS

All sites over 5000 man hours will have a copy of the Emergency Contact List with the telephone numbers of the Emergency Response Agencies of jurisdiction in the locality of the job site.

The form shall be posted visibly in a conspicuous area on jobsite or within job shack or lunch room.

The existence of the Emergency Numbers form and its locations will be made known to all employees during their site orientations.

TRAINING

Training in emergency response is provided during the initial hire orientation for all workers and is re-trained through annual safety meeting discussions. In addition to initial training and annual refresher training at least one emergency response drill will be conducted annually.

Julie Berdin, President

February 26, 2024

Date

12.2 EMERGENCY CONTACT LIST

Date:_____

Ambulance:_____ Municipal:_____

Police:_____ R.C.M.P.:_____

Fire Department:_____ Municipal:_____

Municipal Water Department:_____ Municipal Electrical Department:_____

Occupational Health & Safety Inspector: **Edmonton 780-427-8848**

Emergency Response Team
Safety Department: **403-236-2444**

In Case of Emergency, Call: **403-236-2444 A 24 hour answering service will call a Supervisor**

Site Address:_____

ARPI'S INDUSTRIES LTD First Aiders on Site are:

1._____

2._____

3._____

When calling Emergency Services give them the following information:

- My name is:_____.
- I am working for ARPI'S INDUSTRIES LTD at (name of Job-Site)_____
- My specific location is (describe where you require help). _____
- My phone number is (describe where you are calling from.)_____
  _____
- I have a (medical/fire/police) emergency._____
- I have ____ number of injuries (type of injuries if known).
- Someone will meet emergency vehicle at _____.

Prime Contractor:_____Office:_____ Mobile:_____

Mechanical Contractor:_____Office:_____Mobile:_____

Electrical Contractor:_____Office:_____Mobile:_____

12.3 EMERGENCY RESPONSE PLANS

I. Emergencies on Job Sites
II. Confined Space Emergencies
III. Motor Vehicle Accidents
IV. Medical Emergency
V. Pandemic
VI. Fire
VII. Gas Leak
VIII. Hazardous Substance Release or Spill
IX. Extreme Weather
X. Bomb Threat
XI. Active Shooter

NOTE: In event of any emergency resulting in a fatality, management and the relevant emergency or rescue agency will liaise and communicate to family members of the victim and the media.

I. EMERGENCIES ON JOB SITES

Emergency response and evacuation procedures will vary for each different jobsite. Plans for emergencies will be developed by the Prime contractor at each jobsite and communicated to the company. Project Managers and site supervisors will ensure that employees and company sub-contractors know and understand the site emergency plan during orientations and tool box meetings. Whenever there is a change to the layout of the work site that affects the emergency plan the Prime contractor will update the plan and all changes must be communicated to all workers.

In the event of an evacuation a roll call will be conducted to ensure all personnel have vacated the jobsite. If an employee is un-accounted for, it must be immediately reported to the Prime contractor so that search and rescue measures can be coordinated.

II. CONFINED SPACE EMERGENCIES

Where an employee is trapped in a confined space, colleagues should alert a supervisor immediately and enact the rescue plan that was developed as part of the permitting requirement.
Where a person is trapped a colleague must remain on location and communicate with the person to remain calm and reassure them that help is on the way. Operative(s) with confined space rescue training onsite will be contacted to conduct the rescue as it is laid out in the rescue plan for that confined space entry.

If required the supervisor will contact emergency services 911 and go to the location to ensure employees are calm and reassured. They will ensure that the area is safe for the arrival of emergency services. When on a commercial site, the supervisor will contact the prime contractor's safety officer and inform them of the situation.

III. MOTOR VEHICLE ACCIDENT

The driver of the vehicle will remain at the scene of accident and contact their manager, supervisor or safety officer.

The supervisor and/or safety officer will be dispatched if required to the scene of the accident to investigate and assist in securing the area.

The driver will have to fill out an automotive accident report located in the glove compartment of your vehicle. The report must be submitted to safety department within 24 hours.

If any injury is sustained, the driver may use the first aid kit in truck to administer first aid if possible or wait until a supervisor arrives to render first aid treatment. If the driver is injured beyond first aid the supervisor will transport them to an OIS clinic for assessment and treatment. If the injury is severe, **911** will be contacted and the driver will be taken by ambulance to the nearest hospital.

If an injury to a person(s) in the other vehicle has occurred and the driver is trained in first aid they can administer first aid if safe and possible to do so with the permission of the injured person(s). If required the driver should contact **911** before beginning first aid.

The driver will take pictures, with camera in vehicle or with their cell phone of any damage to any vehicles, the surrounding scene, and any element that may have contributed to the accident. The driver must exchange and obtain relevant details with the persons involved prior to the arrival of any law enforcement.

Where an accident results in severe damage of vehicles and/or persons, the driver will contact emergency services **911 immediately.**

Where an accident results in a fire the driver may use the fire extinguisher in vehicle to extinguish fire only if it is safe to do so**.** If the extinguisher finishes and the fire is still burning then all persons must evacuate the area, contact the fire department and wait for assistance.

TRANSPORTATION OF GOODS

All loads are the responsibility of the driver or operator of the vehicle. It is mandatory that each operator inspects their load and that it is secure prior to vehicle operation.

Should a load become unsecure and/or fall off the vehicle, cease operation of the vehicle immediately when safe to do so and re-secure load.

Should a load come off the vehicle and cause damage or injury, the driver must remain at the scene and contact their supervisor and the safety department.

Where an injury is sustained the driver will contact emergency services at **911** and administer first aid if possible and if permitted by the injured person.

The driver will take pictures, with camera in vehicle or with their cell phone of any damage to any vehicles, the surrounding scene, and any element that may have contributed to the accident. The driver must exchange and obtain relevant details with the persons involved prior to the arrival of any law enforcement.

IV. MEDICAL EMERGENCY

In the event an employee at work falls ill, contact the nearest available first aider who will administer first aid. If the medical emergency occurs at the Arpi's main office facility an AED is located in the residential shop at the base to the stairs leading from the residential warehousing area to the second floor offices.

After first aid is administered by first aider and the person is stable, the person will be transported to hospital by supervisor and another employee for further medical attention.

Where the condition is severe or there is no response from first aid administered contact emergency services **911**. In cases where is appears that the person may have had a heart attack, stroke, seizure, or sustained a spinal injury ensure that **911** is contacted immediately

Where an employee with a known medical condition or disability falls ill contact a first aider, who can if possible administer to the person medication only if instructed and permitted by the person. The first aider will stabilize person emergency services **911** will be contacted if required.

On jobsites the prime contractor must be notified anytime that **911** is called so they can initiate their procedures and ensure easy egress onto the site for emergency personnel.

V. PANDEMIC

Where an incident is not directly a threat to our operations and employees, we shall provide information for all employees via newsletter, pay stubs and notice boards alerting them of such a situation. Thus creating awareness on what is required and recommended by governmental agencies.

Health Canada: - phone-1-866-234-2345; fax 1-866-678-6789

Government of Alberta: Employment & Immigration phone- 1-866-415-8690 within Alberta

Government of Alberta: Health and Wellness-780-427-7164 or 780-427-2711.

Where on a job site location pandemic issue is identified, the project manager, site supervisor and superintendent shall ensure that our operations are stopped immediately and employees taken off the work site or isolated away from the area.

Where any employee is infected on the job site, the supervisor and superintendent shall contact the project manager and safety department and immediately refer the person(s) to get medical attention. The Project Manager will communicate the situation to prime contractor's safety representative on

site. The Project Manager and Safety Department will assist to address any issues as required by providing any information requested by governmental agencies and and/or the prime contractor.

Where a person(s) is affected in an office area senior management in conjunction with the safety department will take action to isolate that specific work area (without any discrimination and while maintaining confidentiality) and refer the employee to the nearest hospital for medical attention. Management will contact the relevant health and/or governmental agency to report the incident. Further decision will be based on hospital and governmental reports and recommendations.

To prevent further spread of infection the isolated area will be contained and fumigated/sanitized by a company licensed and designated for such operations.

If the company recruits a person(s) from an area where pandemic health issue are present, a medical examination will be required to confirm the health of the person(s) as a condition for employment.

When an employee is returning to work from a pandemic area, the employee will be asked in confidentiality by the Safety Department about any health concerns. Where there is any suspicion of infection, the person will be referred to get medical attention. Further decision on return to work will be based on the doctor's recommendation.

Arpi's Industries Ltd. encourages all employees to participate in any governmental vaccination program when available.

VI. FIRE

WHEN YOU SEE A FIRE

- Shout "FIRE! FIRE!"
- Pull the lever on the nearest Pull Station and activate the fire alarm or initiate the jobsites emergency response plan (ie. Blow the air horn)
- Head directly to your muster point and remain there until a head count has been completed, you have signed the attendance sheet, and the all clear has been given.

WHEN YOU HEAR THE FIRE ALARM

- Stay calm, do not panic
- 911 will be contacted by the safety department or appropriate site personnel if required.
- Leave the building immediately via the nearest exit and follow fire escape routes
- **ARPI'S Main Office Only.** Leave your office or work area keeping lights **ON** and doors **OPEN**. The Evacuation Captains will turn lights **OFF** but leave doors **OPEN** after ensuring the areas are clear.
- Head directly to your muster point and remain there until a head count has been completed, you have signed the attendance sheet, and the all clear has been given.
- Evacuation Captains and Site Supervisors must bring pre-printed attendance sheets with you when evacuating in order to conduct the roll call.

VII. GAS LEAK

A strong odorant is added to natural gas which is otherwise a colourless and odorless gas so leaks can be detected easily.

In the event of a gas leak cease all operations immediately and turn off the source of the gas if it is safe to do so.

In the event of an uncontrolled gas leak evacuation of the building must commence immediately with workers reporting to the appropriate mustering locations. Evacuate to the nearest exit and do not use elevators. Refrain from operating any electrical devices as they must create an ignition source. Adjoining building occupants must be notified of the leak.
Workers are not to re-enter the building until approval has been given by the local utility company.

On a Jobsite
The project superintendent must be notified immediately. The superintendent will immediately notify the prime contractor who will be responsible for contacting the local gas utility company to shut off the gas service and coordinate the evacuation of the jobsite

At the Main Office
The Safety Department or Department Manager must be notified immediately. The manager will contact the local gas utility company to shut off the gas service and ensure the building evacuation plan has been initiated.

VIII. HAZARDOUS SUBSTANCE RELEASE OR SPILL

Emergency Spill kits must be kept on hand in any area where a hazardous substance is being used or stored.

Refer to the safety data sheets for detailed procedures to follow.

Secure the area. If it is an airborne vapor spill or large uncontrollable spill of liquid – Call 911. They will mobilize assistance and commence public evacuation in the immediate vicinity.

In most cases, clean up procedures must start as soon as possible to prevent further spread of the substance into flowing water or ground water.
The initial responses by persons working in the immediate area of the spill or those who discover the spill are to evacuate the area immediately and inform the immediate work area supervisor. An initial assessment of the spill and the hazards involved must take place as well as the implementation of containment actions as appropriate.

Hazards to persons must be minimized and controlled. Cover drains and block drainage paths, construct soil berms and deploy booms and sorbents where necessary.

Clean-up, as appropriate:
- Transfer spilled substance to tanks or drums
- Transfer contaminated soil / water to drums
- Transfer used absorbents to drums

In the case of minor spills of a non-reportable nature, the spilled substance and any contaminant materials or soils will be placed in a drum or other suitable container (with lid) for subsequent disposal.

The immediate work supervisor (or the person discovering the spill) will inform the HSE Manager.

Primary Response and Notification:

The work supervisor whose material has spilled will take charge and direct the spill response. The HSE Manager must be contacted immediately in the event of a spill. On jobsites the prime contractor must also be notified. The prime contractor may have spill plans for the jobsite that supersede this plan. Before any work with a hazardous substance is carried out it must be clarified which plan will be utilized and all workers affected must be informed.

Regardless of prime contractor requirements the notification requirements of this plan must always be adhered to for any spill related to or effecting Arpi's Industries Ltd. operations.

The HSE Manager of another member of management will make an assessment of the spill as well as activate the spill containment and clean-up measures necessary including: mobilizing the work force. External notifications will be made through the HSE Manager as appropriate. The work supervisor will commence documentation of the spill and call in external help for containment, clean-up and disposal of material.

Remediation:

Disposal of recovered spill substance and clean-up materials will require adherence to all applicable laws. Restore the site of the spill. In restoring the spill site, care will be taken not to import soil containing seeds, etc., foreign to the job site area. Any planting will utilize plants consistent with the area.

Reporting:

Each reportable spill will be documented on incident report form and submitted to Safety Department.
This report will include information on the cause of the spill and events leading up to it. The type and volume of the substance spilled will be noted.

Details of the containment, clean-up, disposal and restoration operations will be provided. Photographs will be included as a part of the report together with records of notifications, decisions made, and their rationale and information on any required sampling and sample analysis.

IX. EXTREME WEATHER

Weather Watch vs. Weather Warning

Environment Canada issues special weather statements, weather watches or weather warnings, should severe weather be imminent. The following is the difference between the three alerts:

- *Special Weather Statements*: are issued to let people know that weather conditions are unusual and could cause concern. This is the least urgent type of alert issued by Environment Canada.
- *Weather Watches:* are issued to alert people about weather conditions that are favourable for a storm or severe weather, which could cause safety concerns.
- *Weather Warnings:* are issued to alert people that severe weather is either occurring or will occur. These are issued when the certainty of the path and strength of a storm system is determined by Environment Canada.

Natural Disaster / Severe Weather

The primary purpose of the Natural Disaster / Severe Weather Procedure is to inform employees and visitors of any serious weather conditions that warrant their attention. Should Environment Canada issue a Weather Watch, management of Arpi's Industries Ltd will monitor the weather situation. Should Environment Canada increase the Weather Watch to a Weather Warning, management will inform employees of the steps to be taken.

When a weather warning is issued, the following procedures are to be followed:

- Account for all employees and visitors, ensuring that everyone is inside the facility.
- Close all windows and close all curtains and / or blinds.
- Instruct all employees and visitors to move away from windows.
- If necessary, gather employees and visitors into central enclosed areas on the lower level. The residential office lunchroom is the designated area to muster during an extreme weather event.
- Listen to all weather reports for updates. Do not leave the enclosed area until the weather warning has been lifted.
- Stay calm. Encourage others to stay calm also.
- Have portable radios available, along with extra batteries.
- Be prepared for isolation at the premises.
- Ensure that emergency equipment and supplies are available, or can be readily obtained.

- If the weather extreme weather occurs while on a jobsite refer the prime contractor's emergency response plan for details of how to best protect yourself. In the absence of the prime contractor's emergency response plan adapt and utilize the information above and take every precaution to ensure your safety.

Arpi's Industries Ltd Closure Procedures

In the event of extreme inclement weather conditions Arpi's Industries Ltd may elect to close operations for the day, and re-open when it is deemed safe to do so. In the event of a closure due to weather conditions, Arpi's Industries Ltd employees will be contacted to inform them of the decision to close and this will be done with as much advanced notice as is possible. Employees will be contacted at the phone number(s) that they have provided.

In the event of a closure due to weather conditions, employees will be expected to arrive at work the following day, unless notified otherwise.

Unless notified otherwise, or pending a police ordered road-closure, employees of Arpi's Industries Ltd are expected to arrive, on-time, for regularly scheduled work.

In the event that road conditions, or weather conditions create a situation where the employee deems it unsafe to report to work for their regularly scheduled shift, the employee should use his/her own judgment. In this event, the employee will be expected to contact his/her immediate supervisor to inform them of their absence due to weather conditions. The employee will be required to use a vacation or sick day, a day away from work without pay, work from home, or make up the time / hours lost.

X. Bomb Threat

In general, Arpi's Industries Ltd employees must report an emergency event immediately to their supervisor, a manager, or other appropriate authority.
In the unlikely event of a bomb threat, it is impossible to discern valid threats from hoaxes immediately. Therefore, all threats will be treated as real in order to protect lives and property. Arpi's Industries Ltd premises shall be evacuated immediately.
Bomb threats can be received by a number of different ways including telephone, letter, email, instant message, etc. In the event that someone receives a bomb threat, any clues can be helpful to authorities. If the threat is received by telephone, the individual receiving the threat must pay close attention to background noises, gender of the caller, vocal characteristics, etc. If an employee receives a bomb threat, they shall:

- Remain calm, do not panic
- Do not use telephones, including cell phones, radios, computers, etc.
- Notify (the HSE Manager) immediately

Management shall:

- Notify the police by an external phone source

- Initiate the evacuation of Arpi's Industries Ltd premises immediately
- Ensure the premises are evacuated fully – this includes all staff, visitors, and customers
- Should anything out of the ordinary be found, ensure it is not touched. If this is a bomb, touching the item may increase the risk of detonation
- Allow the police to conduct a thorough investigation of the premises – ensure that no bomb is present and the authorities have declared the area "all clear" prior to reopening Arpi's Industries Ltd premises
- In the event that a bomb is found, close Arpi's Industries Ltd until the police have rectified the situation

Employee/Visitor Evacuation Procedure

In the event that Arpi's Industries Ltd receives a bomb threat, an evacuation of the premises shall be initiated immediately. All employees and visitors are required to follow the steps below:

1. Stop working and shut down any equipment in use
2. Proceed to posted emergency exit,
4. Proceed to designated muster points (unless otherwise instructed)

If the bomb threat is received in relation to a jobsite all information must be passed on to the prime contractor. The prime contractor should have plans in place to handle such situations and they will direct the jobsite to ensure the safety of all personnel. In the absence of a prime contractor plan the above procedure is to be adapted to the jobsite and every precaution must be taken to ensure the safety of all site personnel.

XI. ACTIVE SHOOTER

Active shooter situations are unpredictable and evolve quickly. Workers must be prepared both mentally and physically to deal with a shooter situation. Workers must:

- Evacuate the premises and leave belongings behind. **Do not proceed to Muster Points. These are easily identifiable areas and going to them could make you an easy target for the shooter.**
- Proceed to a safe area away from the building that is not in direct line of sight of any window or door of the building. Where possible take shelter behind a substantial object or another building.
- Stop other workers from entering the building.
- If evacuation is not possible, find a place to hide. To prevent a shooter from entering your hiding place, ensure that the door is locked or otherwise secured.
- Silence cell phones and radios. Call 9-1-1 as soon as possible.
- When police officers arrive on site, remain calm and follow instructions.

- Arpi's management will correspond directly with law enforcement on all matters related to the situation. Emergency response team members will stand by for direction from management.
- On jobsites the responsibility to coordinate with law enforcement will be handled by the prime contractor.

12.4 MAIN OFFICE EVACUATION PLAN

GENERAL

MUSTER POINTS

- **#1 – All Office/Admin Staff**: Front Parking Lot
- **#2– Sheet Metal/Residential Shops:** South Side of Building
- **#3– Plumbing / Welding Shop, Mechanic, and Commercial Service**: Rear of Building at North Gate

- Activation of the alarm system automatically notifies emergency services and sounds the alarm bells
- Do not re-enter the building until an "All Clear" has been given by the Safety Department.
- In the event that a head count is conducted and an employee is not accounted for, advise the Safety Representative immediately. When it is deemed safe, the Safety Representative will authorize two people to enter the building and search possible locations where the employee might be found. If it is an unsafe situation no one will be authorized to enter the building. The fire department will assess and investigate the situation.
- If someone is injured during an evacuation, first aid will be administered by a first aider present. If needed, the injured party will be transported for further medical attention.
- The Safety Representative will liaise with the fire department upon arrival and provide any information or assistance that is required.
- Evacuation Captains and Driveway Attendants will be issued radios to use for communication during the evacuation. Cell phone usage during the evacuation is prohibited except when required to contact emergency response services and where noted in the evacuation procedure.
- **No Smoking is permitted at any time during an evacuation.**

EVACUATION PROCEDURE

- When the alarm sounds (Loud Ringing Bells), all employees are to evacuate the building via the nearest safe exit and proceed to their designated Muster Point. Machine operators are required to hit the **"emergency stop"** button before evacuating.
- The Commercial Shop Foreman will appoint one of his employees to stand guard at the South driveway to prevent any vehicles from leaving or entering into the front parking lot.
- The Residential Shop Foreman will appoint one of his employees to stand guard at the Middle driveway to prevent any vehicles from leaving or entering into the front parking lot.
- The Plumbing or Welding Shop Foreman will appoint one of his employees to stand guard at the North driveway to prevent any vehicles from leaving or entering into the front parking lot.
- All Driveway Attendants must be noted on the appropriate attendance sheet.
- The Evacuation Captains will check all rooms and areas in their department (if it is safe to do so). i.e.: compressor room, computer room, storage room, office etc. turning lights off but leaving doors **OPEN** as each room is cleared. Fire rated doors must remain closed.
- The Evacuation Captains will then proceed outside to their designated Muster Point and take a head count for their respective staff.

- If a delivery driver is returning to the shop and sees the driveway attendant blocking the driveway they are to head to the Staples parking lot until the all clear has been given for the evacuation. The driver's absence must be noted on the attendance sheet for their respective department.
- If a delivery attempts to enter the yard, the driveway attendant must notify them that an evacuation is ongoing and direct them to park on one of the side streets and wait for the all clear to be given.
- If a customer, supplier, or other non-Arpi's person is on the premises when an evacuation is in effect they are required to go to the Muster Point with the person or department they are visiting and will only be allowed to leave the property once clearance is given by the Safety Representative or in the event of a hazardous situation the clearance must be given by Emergency Services.
- All employees will wait at the muster point until a Safety Representative gives the all clear.

NOTE: No employee shall take any unnecessary risks to extinguish a fire. Do not attempt to fight a fire if you will endanger yourself or others.

EMERGENCY EQUIPMENT/FIRE PROTECTION

- Pull Stations are located at all exterior doors
- Fire Extinguishers/Hoses are located in all areas of the building and marked with signs

TRAINING

- All personnel are trained in Emergency Response during new hire orientations and refresher training is completed annually through structured toolbox talks
- Annual drills will be conducted at the Main Office/Shop facility
- All Emergency Response Personnel will participate in the Company Evacuation Captain Program

EMERGENCY FACILITIES

- Police, Fire, Ambulance – Call 911 – During an emergency the Safety Representative will communicate with EMS
- Closest Hospital – South Health Campus - 4448 Front St. SE

FIRST AID

- All lunchrooms have #1 First Aid Kits
- Safety Department has a #3 First Aid Kit and Blankets
- First Aider Lists are posted on all Safety Boards

PERSONS RESPONSIBLE FOR EMERGENCY RESPONSE

Sheet Metal Shop:	**Rudy Petryna** – Co-Captain	(403)312-8502
	Middle Driveway Attendant	Radio Channel 88
	Chris Ohem – Co-Captain	(403)828-5045
	South Driveway Attendant	Radio Channel 88
	Anita Karpinsky – Deputy Captain	(403)720-7695
Plumbing/Welding Shop/	**Brett Clarke** – Captain	(403)803-7346
Mechanic	**Justin Lucas** – Deputy Captain	(403)465-0453
	North Driveway Attendant	Radio Channel 88
Commercial Service:	**Chad Brazil** – Captain	(403)888-4418
	Olivier Bergeron-Gelinas – Deputy Captain	(403)200-5922
Main Office:	**Duane Sylvester** – Captain	(403)875-3435
	Marie Vastagh – Deputy Captain	(403)720-7678
Residential Office – Main Floor	**Jaime Eschyshyn** – Captain	(403)236-2444;124
	Sarah Segura – Deputy Captain	(403)236-2444;215
Residential Office – 2nd Floor	**Codie Burgess** –Captain	(403)236-2444;201
	Rose Richter – Deputy Captain	(403)312-8507
Safety Department:	**Troy Booth** – Fire Marshal	(403)862-4059
	Cindy Duke – Deputy Fire Marshal	(403)203-7153
	Safety (alternate)	Radio Channel 88

SECTION THIRTEEN: Records and Statistics

13.1 RECORDS AND STATISTICS PROCEDURES

INSPECTION OF VEHICLES AND MACHINERY

- Records shall be kept for maintenance and repair of each unit.
- Maintenance and repair records shall be kept on file by the Supervisor in charge of such equipment. Such records shall be readily available up request to Provincial O.H. & S. officers or other authorized persons.

INVESTIGATION OF ACCIDENTS/INCIDENTS

- Reports of accidents/incidents involving the company shall be kept on file at the Head Office and made available as per Provincial O.H. & S. regulations. The client may be given a copy (upon request). Safety Representative (s) and/or Safety Committees shall be allowed access to such reports.

SAFETY COMMITTEE

- Minutes from meetings shall be recorded and kept on file at the site and Head Office and made available as per the Provincial O.H. & S. regulations, if required.

REPORT OF ACCIDENT FORMS

- Accident/Incident forms shall be completed in accordance with the company rules and WCB reporting procedures and formats.

TOOL BOX MEETINGS

- A copy of Tool Box Meeting Reports shall be kept in job files, a second copy should be sent in to the Safety Supervisor at the Head Office.
- Clients may require a copy of each meeting. Other on-site authorized representatives may have copies also.

INSPECTION REPORTS

- Inspection reports shall be completed for all Site Inspections and a copy kept on file at the site as well as a copy sent to the Safety Supervisor at the Head Office.

Statistics are obtained from WCB

The information compiled in summaries provides raw numbers. You will need to convert these numbers into standardized indicators for the purpose of measuring safety performance. These indicators can also be used for making comparisons:

- Across sections of a company;
- Over different time periods; and
- With other organizations

Even though statistics are used as a yardstick to measure safety performance, safety evaluations will provide a more accurate picture of a company's overall performance. The injury frequency rate and

injury severity rate, as set in the American National Standards Institute (ANSI) Z16.4 code, are two commonly used indicators. The Injury Frequency Rate is calculated as follows:

# of recordable cases x 200,000 / # of employee-hours of exposure = INJURY FREQUENCY RATE

A recordable case is an injury incident which results in one or more lost work days other than the day of the incident. The Injury severity Rate is calculated as follows:

# of work days lost x 200,000/ # of employee-hours of exposure = INJURY SEVERITY RATE

TERMS AND DEFINITIONS

Lost-Time Claim:

A lost time claim (LTC) is a claim for an occupational injury or disease which disables the worker beyond the day of injury. Included are claims for which wages/compensation are paid, permanent disability claims and facilities.

First Aid:

Any one time treatment and subsequent observation of minor scratches, cuts, burns, splinters and so forth which do not require medical care.

Medical Aid:

Any treatment (other than for first aid) administered by a physician or by a registered professional personnel under the standing orders of a physician. These are not to be confused with First Aid Cases.

Modified Duties:

Any work-related or incurred injury/illness which involves days of restricted work activity.

13.2 SAFETY MANUAL REVISION RECORD

The purpose of this Revision Record is to acknowledge receipt of all changes and to provide a written record that this Safety Manual is up-to-date.

After you have received each revision and have updated your manual, please enter the revision number, the date, and your initials on the Revision Record.

Date	Updated By	Changes/Updates
June 3, 2013	T. Booth	Complete review and update of entire Safety Manual
Feb. 5, 2014	T. Booth	Updated Scissor Lift Inspection Form
Feb. 20, 2014	T. Booth	Corrected Misprint on FLHA Audit Form. Updated Incident Reports in Section 10
Feb. 27, 2014	T. Booth	Added Telehandler Inspection Form to Section 8
March 4, 2014	T. Booth	Added Roust-A-Bout Inspection Form to Section 8
June 13, 2014	T. Booth	Policy Signatures Updated
Sept. 9, 2014	T. Booth	Updated Vehicle Policy to include no smoking of electronic cigarettes
Sept. 9, 2014	T. Booth	Updated Pallet Truck Pre-Use Inspection
Sept. 9, 2014	T. Booth	Updated Vehicle Minor Service Checklist
Sept. 15, 2014	T. Booth	Updated Safety Committee Meeting Policy to Quarterly Frequency.
June 12, 2015	T. Booth	Policy Signatures Updated
June 23, 2015	T. Booth	Updated the Toolbox/Tailgate Safety Meeting Report
Aug. 21, 2015	T. Booth	Updated Section 12.3 Emergency Response Plans
Oct. 9, 2015	T. Booth	Updated Genie Hoist Inspection Form
April 21, 2016	T. Booth	Changed updated SWP-1 to include Asbestos, Lead, and Mould
April 28, 2016	T. Booth	Updated Required Safety Training Policy
May 2, 2016	T. Booth	Updated Safety Orientation and Acknowledgement Form
May 2, 2016	T. Booth	Update Section 10.4 to Include Non-Work Related Illness & Injury
May 17, 2016	T. Booth	Policy Signatures Updated
June 22, 2016	T. Booth	Reviewed and Updated All Safe Work Practices. Added hazard ranking to task specific hazard assessments
June 22, 2016	T. Booth	Reviewed and Updated All Safe Job Procedures. Added hazard ranking to task specific hazard assessments
June 28, 2016	T. Booth	Added Commercial Service Procedures to Section 4
June 28, 2016	T. Booth	Added SWP for Entering a Customer's Property
May 19, 2017	T. Booth	Policy Signatures Updated
April 6, 2018	T. Booth	Policy Signatures Updated
Nov. 6, 2018	T. Booth	Updated SWP-38
Nov. 6, 2018	T. Booth	Added SWP for Load Securement
April 5, 2019	T. Booth	Policy Signatures Updated
June 10, 2019	T. Booth	Updated SJP215 Hydrostatic Testing Procedure
June 12, 2019	T. Booth	Updated SJP401 and Re-titled as Driving Mobile Equipment and Vehicles

April 6, 2020	T. Booth	Policy Signatures Updated
Oct. 15, 2020	JWHSC	JWHSC Approval of 3rd Addition of the Health, Safety, and Environment Manual. Complete Review and Update
Jan. 26, 2021	T. Booth	Updated ERP to include the location of and operational procedures for emergency equipment and emergency response training requirements
Jan. 26, 2021	T. Booth	Updated Hazard Assessment Policy to include when to create, review and revise formal hazard assessments
Jan. 28, 2021	T. Booth	Updated Contractor Evaluation Forms
Jan. 28, 2021	T. Booth	Updated the Violence Prevention Plan and Harassment Prevention Plan to include training requirements for employees
Jan. 28, 2021	T. Booth	Updated the Investigation Policy to include the requirement to investigate all work refusals
Jan. 28, 2021	T. Booth	Updated Inspection Policy to include responsibilities for all employee levels
Jan. 28, 2021	T. Booth	Updated Inspection Report to include completion date for corrective actions
Jan. 29, 2021	T. Booth	Updated the Preventative Maintenance Policy to list all equipment that requires maintenance and provide a schedule for maintenance
Feb. 26, 2021	T. Booth	Policy Signatures Updated
Feb. 8, 2022	T. Booth	Policy Signatures Updated
Jan. 13, 2023	T. Booth	Updated Violence and Harassment Policies
Feb. 7, 2023	T. Booth	Policy Signatures Updated
Feb. 6, 2024	T. Booth	Policy Signatures Updated
Feb. 26, 2024	T. Booth	4th Edition of the Safety Manual Issued The following was completed with the release of the 4th Edition 1. JWHSC Policy and Terms of Reference were updated with the Names of all current members 2. All Formal Hazard Assessments (FHA) were updated to include -FHA Lead and Participants -signature of approval from company president 3. Position Based FHA as re-categorized to better align with COR Audit Employee Levels 4. Office FHA was created 5. Workplace Violence FHA was created 6. All FHAs were reviewed and various updates and revisions made 7. Updated Violence Policy 8. Added Violence procedures as per OHS Code Section 390.2 9. Updated Harassment Policy 10. Added Harassment procedures as per OHS Code Section 390.6 11. Updated Inspection Policy 12. Updated Inspection Form 13. Created a standard template to document emergency drill reports that clearly specifies the following Deficiencies Corrective Action Person Responsible for Action

		Due Date Completion Date This template is stored on the Safety Server Drive and not in the Manual 14. Updated Investigation Policy 15. Updated Safety Meeting Policy 16. Updated the Assignment of Responsibilities document to align with COR Audit employee levels 17. Updated Hazard Assessment Policy 18. Updated External Parties Policy 19. Updated Sub-Contractor Safety Policy 20. Updated all Policy Signatures