

## ACTIVITY HAZARD ANALYSIS

Jobsite	Prepared By	Reviewed By
Scope of Work		
Task and Principal Steps	Potential Hazards	Recommended Controls
<p><b>Personnel shall be informed of emergency procedures prior to performing any work on site.</b></p> <p><b>All work to be performed will be done in accordance with the NAC Mechanical &amp; Electrical Services Accident Prevention Plan and applicable Base, State and Federal safety requirements.</b></p>	<p>Worker injuries and exposures</p>	<p>In Case of Emergency, Call <b>911*</b> or go to the nearest <b>Hospital:</b> _____</p> <p>Contact NAC</p> <ol style="list-style-type: none"> <li>1. Jobsite Foreman: _____ phone #: _____</li> <li>2. NAC's Project Manager: _____ phone #: _____</li> <li>3. NAC's Safety Coordinator: <u>Stephanie Hagen</u> cell #: <u>651-280-8265</u></li> <li>4. NAC's main office: 651-490-9868 (24-hours)</li> </ol> <p>Other NAC contacts:</p> <p>Client Site Emergency Contact</p> <ol style="list-style-type: none"> <li>1. Primary contact: _____ phone #: _____</li> <li>2. Other contact: _____ phone #: _____</li> </ol> <p>Site Specific Requirements:</p> <p style="margin-top: 20px;">*Know client site-specific procedures, and ensure someone will meet and guide EMS to the incident. If emergency services are called, NAC foreman must be notified.</p>



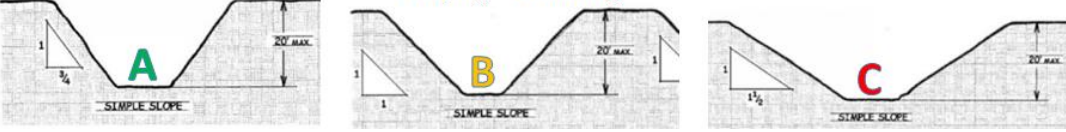
<p>All employees have a right to know the hazards of the chemicals and material they are working with. Employees should read labels to ensure they follow manufacturer instructions, and consult the SDS for more details. Notify employees of chemicals with increased risks.</p>	<p>Burns, Vapor Inhalation, Poisoning, Spills, Contamination</p>	<ul style="list-style-type: none"> <li>• NAC’s SDS Book will be available in the job trailer for reference</li> <li>• Eye wash sinks and wash rooms will be located</li> <li>• SDS book is on the company website. Consult SDS sheets prior to using chemicals</li> </ul> <p>Reference chemical manufacturers Instructions for using and storing chemicals:</p> <ul style="list-style-type: none"> <li>• Wear personal protective equipment when using harsh chemicals</li> <li>• If a chemical is spilled it should be cleaned up promptly according to SDS</li> <li>• Chemicals missing labels should be disposed of or tagged</li> <li>• Expired chemicals should be disposed of</li> </ul>
<p><b>Hand Held Portable Power Tools</b> Used to perform work throughout the jobsite</p>	<p>Eye Injury Eye Injury, Foot Injury Hand Injury, Head Protection Fire, Noise</p>	<ul style="list-style-type: none"> <li>• Use safety glasses with side shields</li> <li>• Wear safety shoes</li> <li>• Machine guards, situational awareness</li> <li>• Face shield</li> <li>• Appropriate placed fire extinguisher, remove all combustibles and fire hazards from machine area.</li> <li>• Hearing protection</li> <li>• Dust masks appropriate for task</li> <li>• Gloves appropriate for task</li> <li>• Proper grounding of frame, manufacturer’s instructions strictly followed</li> </ul>
<p><b>Pipe Stands</b> Used to secure pipes during work.</p>	<p>Foot Injury, Trauma</p>	<ul style="list-style-type: none"> <li>• Situational awareness, wear safety shoes</li> <li>• Follow manufacturer’s instructions. Ensure that rated load is legibly and permanently marked in a prominent location on stand, and rated load capacity is not exceeded.</li> <li>• Make sure stands are placed on a sturdy level platform</li> </ul>
<p><b>Ladders</b> Used throughout the jobsite to access elevated work areas.</p>	<p>Falls Ladder failure</p>	<ul style="list-style-type: none"> <li>• Make sure the correct size ladder is being used for the task</li> <li>• Ladder must be inspected prior to use – damaged / defective ladders shall be tagged and taken out of service</li> <li>• Ladder shall be set up correctly on firm level ground and spreader bars locked</li> <li>• Ladder shall be used in accordance with the manufacturers guidelines and warning labels on the ladder</li> <li>• 3 points of contact shall be maintained while going up or down the ladder and user shall face the ladder while going up or down</li> <li>• Personnel shall not stand on the top two steps of the ladder</li> </ul>

		<ul style="list-style-type: none"> <li>• If ladder is going to be used in a high traffic area (hall way / corridor) the area around the ladder shall be flagged off or a spotter used to control the area so the ladder is not bumped causing user to fall from the ladder – same thing applies when working near doorways</li> <li>• Extension ladders shall always overlap at least (4) steps at their extension points when extended</li> <li>• non-self-supporting ladders shall be placed on a substantial base, have clear access at top and bottom, and be placed at an angle so the horizontal distance from the top support to the foot of the ladder is approximately one-quarter the working length of the ladder</li> <li>• Portable ladders used for access to an upper landing surface must extend a minimum of 3 feet above the landing surface or where not practical, be provided with grab rails and be secured against movement while in use.</li> </ul>
<p><b>Scaffolding</b> Used throughout the jobsite to access elevated work areas.</p>	<p>Falls, Scaffolding Failure, Personal Injury</p>	<p>When positioning or constructing scaffolding the following principles will be maintained:</p> <ul style="list-style-type: none"> <li>• Scaffolding is placed on a firm footing capable of supporting 4 times the load including materials</li> <li>• Scaffolding must be braced or tied off to a stable structure</li> <li>• Scaffolding should be 20" wide and overlap supports between 6-12"</li> <li>• If the scaffolding is higher than 10' guard rails and toe boards need to be in place</li> <li>• A minimum of 10 feet of clearance should be maintained next to power lines</li> <li>• Do not place unstable blocks or barrels underneath scaffolding to level it, adjust the legs instead</li> <li>• Be certain to lock wheels before using if it is mobile</li> <li>• Do not ride scaffolding while moving it</li> <li>• Be aware of holes in floors and overhead obstructions</li> <li>• Do not allow tools or materials to build up on scaffolding</li> </ul>
<p><b>Fall Protection</b>  Roof Work, warning lines. Hoist area with guardrails and tie-off, Personal Fall Arrest Systems when exposed to falls greater than 6 ft.  Hole covers for chases and holes in the floor.</p>	<p>Falls, Falling Objects, Injuries from falls</p>	<p>Fall protection is required when exposed to falls 6 feet or greater- 3 Options.</p> <ol style="list-style-type: none"> <li>1) Use guardrails that are 42" (+/-3") with midrail and toe-kick, and can withstand 200 lbs downward and outward pressure without failing.</li> <li>2) Warning line system of cones, or stanchions, flagged every 6 feet. Warning lines must be set 15 feet from the unguarded edge/ fall hazard. If going beyond warning line, wear PFAS.</li> <li>3) Wear personal fall arrest system (PFAS) fall harness, shock absorbing lanyard or self-retracting lifeline, and an anchorage point capable of supporting 5000 lbs of force. The equipment used shall be exclusive for fall protection, and employees shall be trained on the inspection and proper use of equipment, and shall always have a rescue plan in the event of a fall while wearing PFAS.</li> </ol> <p>Prevent falling objects: Skylights + Holes: All holes 2" or larger shall be covered, secured and marked hole, and be capable of withstanding 2x the anticipated load. Skylights are not guaranteed to withstand the force of a fall, and shall be treated as open holes. Employees shall use guardrails, covers, warning lines or PFAS around skylights.</p>

<b>Drum Handling</b>	Eye injury, Trauma, and foot injury	<ul style="list-style-type: none"> <li>• Goggles and Glove appropriate for task</li> <li>• Use drum dolly when transporting</li> </ul>
<b>Material Handling and Ergonomics</b>  Moving equipment throughout the jobsite, and installing equipment.	Strain and Sprains, Fractures and Bruises, and Cuts.	<ul style="list-style-type: none"> <li>• Lift items over 50 pounds with a partner, or mechanical lifting aid</li> <li>• When using mechanical lifting devices, always inspect equipment before use and know your load capacity. Never exceed load capacity limits.</li> <li>• Avoid awkward posture, and use good ergonomic work practices. Lift with your legs, not your back.</li> <li>• Avoid twisting the spine, pivot the feet instead. Pushing is better than pulling on the back.</li> <li>• Perform warm-up exercises or stretches prior to heavy work, and stay hydrated to prevent muscle sprains/strains.</li> </ul>
<b>Temporary Power-Generator</b>  Used to provide temporary power throughout the jobsite.	Electrical shock, gas inhalation, Burns, Fire Hazard	<ul style="list-style-type: none"> <li>• Have gas monitor in place to monitor carbon monoxide in the area, and ensure adequate ventilation for combustion to prevent oxygen depletion.</li> <li>• Use temporary power generator as required to complete work</li> <li>• Must use G.F.C.I. at generator</li> <li>• Provide fire extinguisher and utilize OSHA approved fuel container</li> <li>• Generator must be shut down prior to fueling</li> <li>• Use caution as generator may be hot</li> </ul>
<b>Compressed Gas Cylinders</b>  Used for many things on the jobsite, including welding and hot work.	Inhalation, Eye Injury, Trauma Foot Injury, Fire, Explosion	<ul style="list-style-type: none"> <li>• Store secured, upright with caps on, in well-ventilated area with flammables stored 20 feet apart, or by 30 min fire wall, from oxygen. May be kept on cart during use.</li> <li>• Always have regulators in place or caps on.</li> <li>• Be aware of your surroundings, and ensure damage does not occur.</li> <li>• Wear safety shoes, gloves, and other required PPE according to SDS when handling</li> <li>• Only use a cylinder wrench on acetylene</li> <li>• Never travel with cylinder in the cab of a vehicle for risk of oxygen depletion</li> <li>• Appropriate placed fire extinguisher, remove all combustibles and fire hazards from area</li> </ul>
<b>Air Compressor, Portable, Electric</b>  Used throughout the jobsite for a variety of tasks	Electric Shock, Noise Trauma Eye Injury	<ul style="list-style-type: none"> <li>• Unplug electrical cord and retain control of plug during repair/maintenance</li> <li>• Use hearing protection and eye protection.</li> <li>• Use appropriate nozzle for specific work activity, situational awareness</li> <li>• Goggles or safety glasses with side shields</li> <li>• NEVER point compressed air at another person or your skin. Do not clean your clothing with compressed air. It can create an air bubble under the skin and may be fatal.</li> </ul>
<b>Cutting &amp; Core Drilling</b>	Property Damage, Personal	<ul style="list-style-type: none"> <li>• The area where cutting or core drilling will take place will be surveyed first to make sure no structural or utilities will be crossing path</li> </ul>

<p>Used throughout the jobsite to create holes in floors, walls or ceilings.</p>	<p>Injury, Electrical Shock, Water Damage, Silica, Falling Debris, Safety Work Zones, Pinch Points</p>	<ul style="list-style-type: none"> <li>• Cutting &amp; coring sites will be secured from loss debris by any of the following methods: Cones/ warning barrier around cutting site and beneath drop zone</li> <li>• A spotter will be located below to prevent unauthorized access in barricade and prevent injuries from falling debris</li> <li>• Net, canvas, wood or other device may be placed under drop zone to cushion impact, but should not pose risk to others.</li> <li>• While cutting, dust or debris will be minimized by using wet cutting methods, local exhaust ventilations, vacuums, and isolating the area.</li> <li>• Any open holes will be covered with secured plywood to support twice the possible load and marked "HOLE"</li> <li>• Employees shall use fall protection if cutting a hole large enough to fall through.</li> <li>• After work is complete debris will be removed from the site</li> <li>• Any open permits will be closed, facilities will be notified if work is complete or ongoing, and location will be reopen to the public accordingly</li> </ul>
<p><b>Demolition</b></p> <p>Performed to remove old material and/or equipment to prepare for installation of new equipment. Demolition plan should be discussed with employees to prevent injuries.</p>	<p>Structural integrity, falls, falling objects, environmental hazard exposure, utility hits, muscle strains, cuts, debris in eye, etc.</p>	<p>Demolition Plan: _____</p> <ol style="list-style-type: none"> <li>1. Engineering Survey: Will any framing, floors or walls, or any other adjacent structures be affected by demolition that could affect the structural integrity of the space? YES _____ NO _____ <ul style="list-style-type: none"> <li>• Method of demolition: hand removal, mechanical equipment, heavy equipment, blasting</li> <li>• Hazardous Material Removal: (Asbestos, Lead, Silica exposure control)</li> </ul> </li> <li>2. Locate utilities: (Call 811), Notify utility companies <ul style="list-style-type: none"> <li>• Private locate method/company used: _____</li> </ul> </li> <li>3. Employee Training Required: <ul style="list-style-type: none"> <li>• Asbestos, Lead, Silica awareness, Fall protection, Confined Spaces, Scaffolding, HotWork/Fire protection, PPE</li> </ul> </li> <li>4. Emergency Action Plans and Fire Prevention: <ul style="list-style-type: none"> <li>• Barricade work areas to protect the general public</li> <li>• Know client site hot work requirements, have extinguishers on-site</li> </ul> </li> <li>5. Other Demolition Hazards: <ul style="list-style-type: none"> <li>• Confined space, contaminated soils, unknown hazardous material, muscle strains, cuts + abrasions.</li> </ul> </li> </ol>
<p><b>Welding &amp; Cutting</b></p> <p>Performed on job-sites to join or disjoin materials as a means to accomplish the tasks.</p>	<p>Fires, Electrical Shock, Burns, Personal Injury</p>	<p>When welding and cutting the following procedures should be followed:</p> <ul style="list-style-type: none"> <li>• A suitable fire extinguisher should be available</li> <li>• Clear the area below cutting or welding operations so hot slag will not burn things below</li> <li>• Always wear required eye protection to guard against slag while chipping, grinding, and dressing of welds.</li> <li>• Always wear a welding hood to protect eyes from flash burn</li> </ul>

		<ul style="list-style-type: none"> <li>Do not cut or weld around gasoline tanks or attempt to weld or cut a container that contains a flammable or combustible liquid</li> <li>When electrode holders are left unattended, electrodes should be removed and the holder should be placed or protected so it cannot make electrical contact</li> <li>All arc welding and cutting cables should be completely insulated</li> </ul>
<p><b>Hot work</b></p> <p>Performed on job-sites. Employees shall follow site requirements, ensuring they n</p>	<p>Burns, Fires, Ventilation</p>	<p>Hazards while doing hot work will be minimized by:</p> <ul style="list-style-type: none"> <li>Complete hot work permits as required by site, and provide trained fire watch with extinguishing system during and for 30 mins after work. Firewatch should also watch below if holes in floor/walls.</li> <li>Hot work equipment shall be inspected before use, and be in good condition</li> <li>Multi-purpose fire extinguisher or water source is readily available nearby.</li> <li>Dust, lint, debris, flammable liquids and oily deposits removed.</li> <li>Remove flammable and combustibles and wet down combustible floors, or covered with damp sand or fire blankets. Cover openings or unmovable combustibles with fire blankets, and have firewatch below.</li> <li>Ensure any risk of explosive atmosphere in the area is eliminated.</li> <li>Confined spaces are cleaned of all combustibles such as grease, oil, flammable vapors, and have continuous mechanical ventilation.</li> </ul>
<p><b>Fleet Vehicle Safety</b></p> <p>May be required for getting between jobsites, but is a privilege.</p>	<p>Vehicle Accidents, Personal Injury, Property Damage</p>	<p>Anyone who operates a licensed vehicle owned or controlled by NAC Mechanical &amp; Electrical Services must maintain a current driver's license and follow these policies:</p> <ul style="list-style-type: none"> <li>Vehicles shall be inspected daily</li> <li>All occupants must wear seatbelts at all times</li> <li>Obey all traffic laws. No cell phone use while driving.</li> <li>Unattended vehicles should have keys removed, doors locks and windows rolled up.</li> <li>All incidences involving damage to company property or personnel shall be reported</li> <li>Courtesy should be extended to other motorists (company vehicles are rolling billboards)</li> </ul>
<p><b>Forklift Operation</b></p> <p>Used to move material around the jobsite.</p>	<p>Vehicle Accidents, Personal Injury, Property Damage</p>	<p>Operator of power industrial trucks must be trained and authorized to operate equipment, and be competent in its use and safety guidelines:</p> <ul style="list-style-type: none"> <li>Examine forklift truck for defects before using. Remove unsafe or defective forklift trucks form service. Ensure safety and reverse signal alarms are audible above the surrounding noise level.</li> <li>Drive safely and never exceed 5 mph and slowdown in congested or slippery areas.</li> <li>Do not handle loads that are heavier than the capacity of the industrial truck. Avoid traveling with loads elevated. Operators shall always wear seatbelts.</li> <li>Hoist areas must have appropriate fall protection if guardrails are removed causing fall risk.</li> </ul>
<p><b>Man Lifts/ Scissor Lifts</b></p> <p>Used throughout the jobsite to access</p>	<p>Property Damage, Personal Injury, falls,</p>	<p>Lifts designed to elevate personnel should be used with caution. Always review the manual and familiarize yourself with new lifts. While inside lifts make sure:</p> <ul style="list-style-type: none"> <li>To set brakes and extending outriggers before using as required by the manual</li> <li>Do not exceed boom and basket load limits, and be aware of severe weather and wind.</li> </ul>

<p>elevated areas to perform work safely.</p>	<p>falling equipment</p>	<ul style="list-style-type: none"> <li>• Use personal fall restraint in man-baskets and aerial lifts. In Scissor lifts, use personal fall arrest for additional means of fall protection. Always latch the chain.</li> <li>• Keep feet on platform, do not use ladders, stilts, or step stools to elevate above work platform.</li> <li>• Be aware of environments where caught between or struck by risks are present, and inspect ground and overhead obstructions. Stay clear of moving and rotating objects.</li> <li>• Stay at least 10 feet away from overhead powerlines.</li> <li>• If working outside of the lift fall protection must be utilized</li> </ul>
<p><b>Cranes</b></p> <p>Whenever lifting items by crane on jobsites, caution must be taken to prevent injuries.</p>	<p>Property Damage, Personal Injury, Uneven Surfaces, Electric Shock, Caught Between, Stuck By, Falling Debris, Failure to Secure</p>	<ul style="list-style-type: none"> <li>• Watch for overhead electric power lines and maintain at least 10-foot safe working clearance from the lines</li> <li>• Inspect all rigging prior to use, do not wrap hoist lines around the load</li> <li>• Do not exceed the load chart capacity while making lifts</li> <li>• Raise load a few inches, hold, verify capacity/ balance and test brake before delivering load</li> <li>• Only qualified signal persons shall be assigned as the dedicated signal person for a crane or other material lift.</li> <li>• Utilize NAC's Crane Lift Form, and/or review the crane company's pick plan.</li> <li>• Use fall protection on the roof to prevent falls through holes, and off the roof.</li> </ul>
<p><b>Trenching &amp; Excavation</b></p> <p>Whenever digging in the ground, there is a risk of hitting utilities or being injured.</p>	<p>Cave ins, Trench Collapse, Falls, Trips, Caught Between, Struck By, Asphyxiation</p>	<p>Before digging any trenches/ excavation, or before clearing an unknown obstruction inside a sewer pipe, all underground utilities must be located by contacting local state "one-call" 811.</p> <ul style="list-style-type: none"> <li>• A competent person must inspect trenches and excavations at least daily for hazards. Hazards shall be eliminated prior to any work in excavations.</li> <li>• Protective means, such as sloping is required when excavation is 5 feet or more deep.</li> <li>• Sloping is angled according to soil type. Sandy soils are type C, and require a 1.5 : 1 slope.</li> </ul> <p style="text-align: center;"><b>Sloping + Benching</b></p>  <ul style="list-style-type: none"> <li>• Keep excavated materials a minimum of two feet from the edge of the trench.</li> <li>• In trenches more than four feet deep, locate adequate means of exit. Such as ladders, or steps, so they can be reached in no more than 25 feet of travel from anywhere in the trench.</li> <li>• Keep heavy loads of all kinds as far from the trench as possible.</li> <li>• Do not allow water, rain, ground water, or surface water to accumulate in a trench, water reduces soil stability. It must be pumped out prior to entering the trench.</li> <li>• Trenches greater than 20 feet require design by an engineer.</li> </ul>



		<ul style="list-style-type: none"> <li>• Unattended excavations must be well lit and barricaded. Keep non-workers away from the trench, particularly at night.</li> <li>• When excavating near traffic areas, class 2 high-vis vests shall be worn by all employees involved.</li> </ul>
<p><b>Shut Offs / Line Breaking</b></p> <p>Exposure risk when breaking lines, pressure testing, or any other means where you have to cut into an existing line.</p>	<p>Property Damage, Personal Injury, Pressurized Parts, Water Damage, Failure to Make Secure.</p>	<ol style="list-style-type: none"> <li>1. A line trace will be done to verify that all valves leading to the line break source have been shut closed and locked out/ tagged out.</li> <li>2. The area near the line break will be set up with drop cloths, poly, drain off buckets, hoses or other means to contain fluids.</li> <li>3. Pressure from the line will be relieved and fluids will be drained from the line.</li> <li>4. If necessary a clean flush will be performed to cleanse the line.</li> <li>5. Sections of the lines will be removed by disassembling or cutting the lines into manageable sections.</li> <li>6. Lines which are removed will be trucked out of the area by means which contain fluid runoff such as by stacking in fluid tight carts or by capping open ends to pieces which are removed.</li> <li>7. After the lines are removed any open ends should be repaired, sealed, or capped closed to prevent fluids from leaking on a daily basis.</li> <li>8. A preliminary inspection should be carried out once work is complete to maintain that all fluids are concealed. Periodic inspections should be performed to ensure that fluids have not leaked from the line.</li> <li>9. A final Inspection will be performed daily. Any tools, materials, and equipment will be removed.</li> <li>10. Any open permits will be closed, facilities will be notified if work is complete or ongoing, valves will be opened and mechanical systems will be reenergized accordingly.</li> </ol>
<p><b>Lockout/Tagout</b></p> <p>Prevent the hazardous release of energy while working on equipment. Follow lockout/tagout written procedures.</p>	<p>Personal Injury, Property Damage, Caught between, Electrical Shock, Moving Parts, Personal Injury</p>	<p>Before servicing or working near equipment which has the potential to release energy or motion of its parts or systems a lock out tag out should be performed. The following procedures detail this process:</p> <p>De-energizing:</p> <ol style="list-style-type: none"> <li>1. Notify all "affected employees" that the equipment will be shut down.</li> <li>2. Shut down the equipment by normal stopping procedures.</li> <li>3. "Isolate" all the equipment's energy sources.</li> <li>4. Lock out and/or tag out the energy isolating devices with assigned, individual locks.</li> <li>5. Release or restrain any stored energy by grounding, blocking, bleeding down, etc.</li> <li>6. Assure that no personnel are exposed, and then test the equipment to assure that it will not operate.</li> </ol> <p>Restoring Equipment:</p> <ol style="list-style-type: none"> <li>1. Check to assure that all employees have been safely positioned or removed from the area.</li> <li>2. Verify that equipment controls are in neutral.</li> <li>3. Remove lockout devices and/or tags and re-energize the machine or equipment.</li> <li>4. Notify affected employees that servicing is complete and the equipment is ready for use.</li> </ol>
<p><b>Electrical Safety</b></p>	<p>Electrical Shock,</p>	<p>General electrical safety procedures shall be followed:</p>

<p>Risk throughout jobsites wherever electricity is in use.</p>	<p>Power Disruption, Critical System Failure, Personal Injury</p>	<ul style="list-style-type: none"> <li>• Assume that all overhead wires are energized at lethal voltages. Never assume that a wire is safe to touch even if it is down or appears to be insulated.</li> <li>• Never operate electrical equipment while you are standing in the water.</li> <li>• Any live parts of electrical equipment operating at 50 Volts or more must be guarded against accidental contact by cabinets or other forms of enclosures. It should also be secured tightly, and be elevated above the floor or work space a minimum of 8' in height</li> <li>• Extension cords shall have grounded conductors/ insulation in good condition without splices.</li> <li>• GFCIs shall be inspected weekly and documented</li> <li>• No employees shall enter spaces containing exposed energized parts unless illumination is provided that enables work to be conducted safely</li> <li>• All temporary lighting shall be placed above 8 feet if assembled with wire nuts. Temporary lighting is below 8 feet shall have connections placed inside a junction box. All temporary wiring shall be separated from any metal parts by insulated shielding or plastic clips</li> </ul>
<p><b>Arc Flash</b> Electrical work or work on live equipment.</p>	<p>Electrical Shock, Power Disruption, Critical System Failure, Personal Injury</p>	<p>Take these preventions to help prevent arc flash burns:</p> <ul style="list-style-type: none"> <li>• Read and observe all warning signs of “arc flash protection boundaries”</li> <li>• Wear appropriate PPE when working within the arc flash protection boundary. The type of PPE depends on the electric work being done. (Use NFPA 70E charts to identify PPE needs)</li> <li>• If you need to work in the arc flash boundary use barriers such as insulated blankets to protect against accidental contact</li> </ul>
<p><b>Confined Spaces</b>  Any space that is large enough to enter, not meant for continuous occupancy, and has limited means of entry and exit.  When hazards are present, introduced, are have a potential to exist that could seriously harm or kill</p>	<p>Hazardous atmosphere, engulfing, entrapment, asphyxiation, health hazard</p>	<p><u>Non-permit confined space:</u> Confirm + document that it is safe prior to initial entry. If hazards arise or are introduced, exit space, suspend entry, and reassess hazards. You may need to treat as a permit-required space.</p> <p><u>Permit Required confined space:</u> Always use a permit to document entry procedures.</p> <p><b>3 Options for Permit Required Confined Spaces in Construction:</b></p> <ol style="list-style-type: none"> <li>1. <u>Reclassify:</u> When you can fully Eliminate and/or Isolate (Lockout/Tagout) hazards and confirm <u>no potential</u> for hazardous atmosphere. This must be approved of by Host, Controlling, and Entry Contractors.             <ol style="list-style-type: none"> <li>a. Competent person evaluates hazards, documents on permit and determines steps needed to eliminate or isolate all hazards. Steps are completed, and then the competent person can re-classify the space as not being permit required. Leave permit at space entrance.</li> </ol> </li> <li>2. <u>Modified Entry:</u> When you can Eliminate and/or Isolate (Lockout/Tagout) hazards, and you can control atmospheric hazards, but not eliminate the potential 100%.</li> </ol>

<p>someone, it becomes a permit required space.</p> <p>Follow procedures to ensure safe entry.</p>		<ol style="list-style-type: none"> <li>a. Competent person evaluates hazards, documents on permit, and determines steps to eliminate or isolate hazards. Proceed with entry after testing air, then using continuous mechanical ventilation, and wearing 4-gas monitor during entry. Leave permit at space entrance.</li> </ol> <p>3. <u>Full Permit Entry</u>: When you can't eliminate or isolate hazards. You will need attendant present, rescue plan, and fill out permit every day you enter space.</p> <ol style="list-style-type: none"> <li>a. Each day, competent person evaluates, documents on permit and determines safe entry methods. Test air and wear 4-gas monitor. <i>Attendant and rescue plan</i> must be in place prior to entry.</li> </ol>
<p><b>Asbestos &amp; Lead</b></p> <p>Exposure risk occurs during demolition when hazards are disturbed.</p>	<p>Airborne particles exposing employees to particulates that may cause adverse health effects. Debris on surfaces, dislodged chunks, Sanding or Grinding</p>	<p>If lead or asbestos are encountered on the jobsite, employees shall be made aware of locations, and take appropriate measures to prevent exposure.</p> <p>Foreman shall relay information regarding asbestos abatement to employees. Employees shall be made aware of potential asbestos containing materials, and shall stop work and notify their supervisor if they suspect asbestos. Do not disturb asbestos. Testing and abatement shall be performed prior to performing work that may disturb asbestos.</p> <p>Control Methods</p> <ul style="list-style-type: none"> <li>• Engineering Controls – minimize hazards by isolating and preparing for dangers – (use barricades, ventilation, or saturate surfaces with water so dust is not created)</li> <li>• Administrative Controls – follow abatement procedures – (request NAC abatement forms, contact a qualified professional to perform abatement)</li> <li>• Personal Protective Equipment – PPE may be worn to control exposure to hazards - Use of respirators (follow written respiratory plan), safety glasses, gloves, &amp; covered clothing. Maintain good hygiene, and wash hands, shower after handling, and wash clothes separately to prevent secondary exposure.</li> </ul>
<p><b>Silica</b></p> <p>Exposure risk during demolition, drilling, hammer drilling, cutting, core-drilling, chipping, and housekeeping</p>	<p>Inhalation of airborne dust containing crystalline silica that, through the use of tools and work practices becomes respirable</p>	<p>If using power tools on material that contains crystalline silica (e.g. concrete, stone, bricks, masonry, hardy board, drywall compound, etc.) you must use engineering controls (wet method or vacuum) to control dust to reduce exposure to below the 8 hr TWA, PEL of 50 micrograms per cubic meter. Follow Table 1 procedures, or work procedures listed in NAC's Silica Exposure Control Program (summarized below). Ensure manufacturer instructions are followed.</p> <ol style="list-style-type: none"> <li>1. Restrict Access + Contain Dust: restrict other employees from entering areas of high potential silica exposure. Use plastic to separate areas if necessary and wear respirators when entering area if required. Ensure adequate ventilation and controls are in place for those in contained area.</li> <li>2. Housekeeping + Sweeping: Use wet sweeping compound, wet sweeping, or HEPA vacuum for cleanup.</li> <li>3. Safe work practices: use general ventilation and local exhaust ventilation to control exposure to dust. Stand upwind to prevent unintended exposure. When vacuum attachments are not feasible, alternative control measures shall be taken to control dust. Controlling visible dust, is likely to also reduce exposure to invisible, respirable dust.</li> <li>4. Hammer Drilling: use a vacuum attachment, local exhaust ventilation to remove dust at the source.</li> </ol>

		<p>5. Core Drilling: Wet Core Drilling-ensure water stream is integrated and delivers effective amount of water directly on the source. Dry Core Drilling-use a vacuum shroud attachment or wet method on dry core drills.</p> <p>6. Concrete Chipping + Demolition, use a vacuum, local exhaust ventilation attachment to remove dust at the source. Wear a respirator during chipping work indoors, or more than 4 hours outdoors.</p> <p>7. Excavation, wet soil down during excavation or have all others removed from area and the operator fully enclosed in cab.</p>
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Equipment To Be Used	Inspection Requirements	Training Requirements
Ladders	Inspect for damage before use	Use ladders properly and safely
Generator	Ensure ventilated properly to prevent CO.	
Air Compressors	Inspect before use	Trained on safe operation. Never point hose at others.
Material Carts	Inspect before use, don't overload	
Hand Held Portable Tools	Inspect before use, ensure guards are in place	Be trained on proper use of tools.
Pipe Stands	Inspect before use.	
Compressed Gasses	Inspect before use, and store properly, separate flammables from oxygen	Be trained on proper use and storage
Cranes	Complete Crane lift form prior to crane lifts	Rigging signal person must be trained.
Man Lifts	Inspect before use.	Be trained on safe use. Aerial lifts require additional training and 100% tie-off.
Fall Protection Equipment	Inspect before use, ensure plan is effective	Be trained to inspect, wear and setup equipment.
Vehicles	Inspect vehicles each day, and lock up	
Chemicals	Inspect for proper storage and damage	Hazcom training, read labels, review SDS, label chemicals properly.
Hot Work Equipment	Inspect before use	Trained on hot work requirements per site.
Silica	Ensure equipment is working properly	Trained to prevent silica exposure using engineering controls, and work practices in plan.
Ladders	Inspect for damage before use	Use ladders properly and safely
Generator	Ensure ventilated properly to prevent CO.	

Competent Person	Activity

