THE NATION'S URANIUM PROCESSING FACILITY

UPF JOB HAZARD ANALYSIS

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JHA NO.:	**JHA-00752**	**REV:**	**4**	**ISSUE DATE:**	**2-27-25**
JHA TITLE:	**Structural Steel Installation and Misc. Metal Work**	**WORK PACKAGE NUMBER:**	**N/A**	**SPECIFIC LOCATION:**	**N/A**

Activity	**Sub-Activity**	**Hazard**	**Control**
Hand & Power Tools	Hand, Air and Electrical Tools	Improper Use of Tools/Equipment Laceration/Grinding Wheel Failure Fire Electric Shock Inhalation of Carbon Monoxide, Nitrogen Dioxide, and/or Other Combustion Gases, Chemical Asphyxiation Struck-by Abrasion	Review the applicable work activities and implement the associated work controls listed in **JHA-00721,** *Hand and Power Tools*
Grinding Activities	Grinding Activities on Uncoated Metal	Flying Particles (Debris) Grinding Wheel Failure Loss of Tool Control - Laceration (Grinding Activities) Burn Fire (Hot Work)	· Reference ML-SH-801768-A002, UPF Eye and Face Protection List.
			· Ensure the grinding wheel is rated for higher revolutions per minute (RPM) than the grinder. Ensure the guard is on the grinder.
			· Use the tool handle(s) to maneuver the grinder
			· Hand-held grinders shall be equipped with a constant pressure switch
			· Wear a shirt, jacket (or equivalent) made from heavier materials (e.g., heavy cotton, denim) that overlap footwear to prevent spatter from entering
			· Wear pants/trousers made from heavier materials (e.g., heavy cotton, denim) that overlap footwear to prevent spatter from entering
			· Wear clothing that is free from pockets, hoods, or cuffs that can trap sparks or slag. Keep sleeves and collars buttoned
			· Ensure the material being cut is secured via approved methods (i.e., bench vise, c-clamp)

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			NOTE: *Never hold the material that is being cut!*
			NOTE: *Pockets that are covered or equipped with closeable flaps are acceptable. If not in a Designated Hot Work Area, contact the Permit Authorizing Individual (PAI) for a Hot Work Permit and follow the permit requirements.*
Portable Band Saws	Portable Band Saws	Laceration	All portions of band saw blades will be enclosed or guarded, except for the working portion of the blade between the bottom of the guide rolls and the table Band saw wheels shall be fully encased.
			Always adhere to the following requirements:
			· Keep hands away from cutting area and blade.
			· Always keep both hands on the tool handles.
			· Always keep your hands out of the line of the band saw blade.
			· Ensure the material being cut is secured via approved methods (i.e., bench vise, c-clamp).
			NOTE: Never hold the material that is being cut!
			· Always wait until the motor has reached full speed before starting a cut.
			· Prevent unintentional starting. Ensure the switch is in the off position before connecting to power source and/ or battery pack, picking up or carrying the tool.
			· Remove any adjusting key or wrench before turning the power tool on.
			· Do not overreach. Keep proper footing and balance at all times.
			· Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.
			· Do not force the power tool. Use the correct power tool for your application.
Portable Circular Saws	Portable Circular Saws	Laceration	· Portable, power-driven circular saws shall be equipped with guards above and below the base plate or shoe

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			· The lower guard will cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work
			· The lower guard will automatically return to the covering position when the blade is removed from the work
Powder-Actuated Tools	Powder-Actuated Tool Use	Improper Use of Tool/Equipment Line of Fire Struck-by, Flying Particles Fire	· Only those workers who have received training for the particular tool being used are allowed to operate a powder-actuated tool
			· Test powder-actuated tools each day before loading to Ensure safety devices are in proper working condition and use the manufacturer's recommended procedure to perform the required tests
			· When powder-actuated tools are not in proper working order or when such tools develop a defect during use, tag them immediately "out-of-service" and remove them from the worksite. Faulty tools shall not return to the work area until properly repaired
			· DO NOT load powder-actuated tools until just prior to the intended firing time
			· DO NOT point loaded or empty tools at any workers, and keep hands clear of the open barrel end
			· DO NOT leave loaded tools unattended
			· Avoid driving fasteners into very hard or brittle materials, including cast iron, glazed tile, surface-hardened steel, glass block, live rock, face brick, or hollow tile
			· Avoid driving fasteners into materials that are easily penetrated unless such materials are backed by a substance capable of preventing the pin or fastener from passing completely through and creating a flying missile hazard on the other side
			· DO NOT drive fasteners into a spalled area caused by an unsatisfactory fastening
			· DO NOT use powder-actuated tools in an explosive or flammable atmosphere
			· Use powder-actuated tools with the correct shield, guard, or attachment recommended by the manufacturer

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			· Establish a danger barricade and signage in areas where powder-actuated tools are in use in accordance with UPF-CP-214
			· Store powder-actuated tools and fasteners in accordance with manufacturers' recommendations when not in use
			· DO NOT dispose unspent rounds in domestic trash. Contact Superintendent, Site Technical Representative, and/or ES&H
			· Dispose misfired rounds in accordance with the manufacturers' instructions
			· Ensure the tool operator wears safety glasses and a face shield during operation
			· Powder-actuated tools and powder charges shall be controlled so as to prevent unauthorized possession at any time while not in use (i.e., tools are stored in locked containers and powder charges in a locked flammable cabinet). The operators shall not carry cartridges in their pockets
			· Only powder-actuated charges, studs, pins, or fasteners designed and recommended by the manufacturer for use in a specific tool shall be used. Cross-use of accessories with tool is prohibited
			· In the event of a misfire, hold the tool in the operating position against the working surface for no less than one full minute. If it is uncertain that the tool is defective, then unload the tool and place it in its container and return it to the tool room with a tag that reads "Danger. Defective Tool/Equipment. Do Not Use."
			· When making a thorough and complete study of the job, Ensure the type of material to be worked on is included, as well as its thickness and general condition
			· Ensure occupied areas behind the firing location are cleared prior to task start
			· Avoid the use of powder-actuated tools on materials or surfaces that may be completely penetrated by the fastening stud

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			· DO NOT drive fasteners directly into materials such as brick or concrete that are closer than three inches from the edge or corner or into steel surfaces closer than 1/2-inch from the edge or corner UNLESS a special guard or fixture is used
			· Ensure the operator knows what is behind the surface or between the surfaces or walls into which the stud is being driven (e.g., electrical wires, fluid lines, gas lines, personnel)
			· DO NOT carry a tool from one job to another while it is loaded
			· DO NOT fire the tool when there is an obstruction in the barrel
			· DO NOT fire a tool into a pre-drilled hole
			· DO NOT test a powder-actuated tool with the breech plug still in the barrel
			· DO NOT use a fastener without a cap or guide
			· Avoid using a long-breech plug charge in a short-breech barrel
Dropped Object Prevention	General Requirements	Dropped Objects	Review the applicable work activities and implement the associated work controls listed in **JHA-00715,** *Dropped Object Prevention*
Barricades and Signs (Life Critical Activity)	General Requirements	Improper Hazard Communication	Review the applicable work activities and implement the associated work controls listed in **JHA-00712,** *Barricades, PPE, FLHA.*
Compressed Gas Cylinder; Liquefied Petroleum Gas; and Liquefied Inert Gas Use	General Requirements	Spills Asphyxiation Muscle Strain Ergonomic Cryogenic Burn Fire	Review the applicable work activities and implement the associated work controls listed in **JHA-00713,** *Compressed Gas, LPG, and Inert Gas.*
Jacks--Lever, Screw, Hydraulic, and Ratchet	Jacks--Lever, Screw, Hydraulic, and Ratchet	Potential Energy Release (Mechanical)	When using jacks, perform the following:
			· Verify the manufacturer's rated capacity is marked legibly on each unit
			· Verify the presence of a positive stop to prevent over-travel on all jacks

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			· When the potential exists for slippage from the metal cap of the jack, establish a firm foundation during a lift by setting in place blocking and cribbing at the base of the jack and a wood block between the cap and the load
			· Crib, block, or otherwise secure a load immediately after it has been raised
			· Lubricate jacks at regular intervals and inspect them frequently, but not less frequently than the following:
			o Once every six months for constant or intermittent use
			o When jacks are sent out of shop for special work or when returned
			o When a jack is subjected to abnormal load or shock, immediately inspect before and after use
			· Examine repaired jacks and associated replacement parts for possible defects
			Tag defective jacks and take out of service until repaired
Manual Material Handling	Pallet Jack Use	Muscle Strain/Sprain Ergonomics Pinch Points Crushed By Struck By Caught Between	· Do not overload the machine. Be aware of dynamic loading! Sudden load movement may briefly create excess load causing product failure
			· Use as intended only. Do not use machine to support personnel
			· Always load the machine evenly and centrally
			· Keep clear of fork and load while raised
			· Only use on flat, level surface able to withstand weight of machine and load
			· Never leave a loaded machine unattended the load must always be lowered when not in use
			· Inspect before every use do not use if parts are loose or damaged.
Manual Material Handling	Manual Material Handling	Muscle Strain/Sprain Ergonomics	· Supervisors will be trained in the basics of manual material handling, hazards and basic controls, and conducting basic risk assessments for material handling work

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		Pinch Points	· Where manual handling is unavoidable, the supervisor will conduct an informal risk assessment as part of the FLHA process and follow up with employees before work starts
			· Inspect for shifted loads, stored energy, or loose items prior to unloading
			· Keep hands and arms clear when stacking material
			· Remove/protect sharp edges with “softeners” prior to lifting
			· To understand safe lifting limits during manual material handling, refer to OT-SH-801768-A128, *UPF Ergonomics Lifting Guidelines*
Personal Protective Equipment (PPE)	Hot Work	Burn	Clothing shall be selected to minimize the potential for ignition, burning, entrapment of hot sparks, or electric shock. Personnel performing welding and associated hot work activities shall:
			· Wear a shirt, jacket, or equivalent that meets the requirements of hazard risk category 2 (in accordance with NFPA 2112, *Standard on Flame-Resistant Clothing for Protection of Industrial Personnel Against Short-Duration Thermal Exposures from Fire*)
			· Wear pants/trousers made from heavier materials (e.g., heavy cotton, denim) that overlap footwear to prevent spatter from entering
			· Keep sleeves and collars buttoned
			· Wear clothing that is free from pockets, hoods, or cuffs that can trap sparks or slag
			· For heavy work (e.g., Carbon Arc Cutting over 500Amps, Oxyfuel Gas Weld over 1/2" plate), flame-resistant leggings or other equivalent means shall be used to give added protection to the legs, when necessary
			· Cape sleeves or shoulder covers with bibs made of leather or other flame-resistant material shall be worn during overhead welding, cutting, or other operations, when necessary
			· Additional evaluation of hot work PPE will be performed during the hot work permit process and pre-job/FLHA card briefing
	Welding	Arc Flash	· Personnel performing welding activities shall wear a welding helmet (hood) that meets the requirements of ANSI Z87.1 to protect themselves from welding arc, sparks, and spatter

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Personal Protective Equipment (PPE)			· Filter lenses shall be selected for the specific welding operation in accordance with ANSI Z49.1, *American National Standard for Safety in Welding, Cutting, and Allied Processes*, Table 1 – "Guide for Shade Numbers." Refer to Appendix B, *Guide for Shade Numbers in Welding*
			NOTE: *Minimum shade requirements for welding operations are identified in the JHA for the activity.*
			· Safety glasses or goggles must be worn in addition to the welding helmet
			· Support personnel in the immediate welding area must wear a similar level of eye and face protection
Personal Protective Equipment (PPE)	Task Specific Eye/Face Protection	Flying Particles	· Refer to ML-SH-801768-A002, *UPF Eye and Face Protection List*, for task-specific eye and face protection directives
			· Goggles and sealed eyewear (e.g., spoggles) may be required to provide protection from impact, dust, mists, and splashes that are generated by work activities
			· Face shields are required when workers are exposed to flying objects, molten metal, liquid chemicals, or potentially hazardous light radiation. Face shields shall be worn in conjunction with primary eye protection (safety glasses or goggles)
Personal Protective Equipment (PPE)	Hearing Protection - Noise Levels Between Eighty-Five (85) and Ninety-Nine (99) dBA.	Noise	· Refer to ML-SH-801768-A011, *Sound Levels of Common Construction Power Tools*
			· Wear approved single hearing protection devices with a minimum NRR of 21
			· Barricade and Signage:
			o Install caution sign, or caution barricade tape with caution signs or tags requiring hearing protection on the barricade to establish the eighty-five (85) dBA boundary around the work area
			o Contact Industrial Hygiene to evaluate noise levels for new/changed work activities or when working in enclosed areas.
		Noise	· Reference ML-SH-801768-A011 Sound Levels of Common Construction Power Tools

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Personal Protective Equipment (PPE)	Hearing Protection - Noise Levels over One-Hundred (100) dBA		· At a minimum, wear single hearing protection devices with NRR of 33 (i.e. red, white and blue foam earbuds) AND ear muffs
			· Contact IH or ES&H Representative if the anticipated noise levels are greater than 114dBA prior to engaging in the activity
			· Use employee and or job rotation to reduce the time of exposure. When performing activities in enclosed spaces such as enclosed cells, pits, vaults or other similar spaces that may adversely affect noise levels or where multiple noise sources are present contact ES&H for further evaluation
			· Barricade and Signage:
			o Install danger barricade tape with danger signs or tags to identify the one hundred (100) dBA boundary area
			o Identify area outside of danger barricade with caution single hearing protection required signs. Contact IH to evaluate size of these boundaries
			o Contact IH to evaluate noise levels for new/changed work activities or when working in enclosed areas.
Hot Work	General Requirements	Fire	Review the applicable work activities and implement the associated work controls listed in **JHA-00719,** *Fire Prevention, Protection, Hot Work and Welding*
Fire Prevention and Protection	Fire Occurrence	Fire	In the event of a fire, personnel are primarily responsible for evacuating themselves and others safely from the fire area. The discoverer of the fire shall perform or direct the following three immediate actions:
			Step 1 – Yell "FIRE" to notify those in the immediate vicinity.
			Step 2 – Notify the Y-12 Operations Center (OC) by:
			o Activating a fire alarm (pull box), if available
			o Calling 911 from a Y-12 landline

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			o Calling Y-12 OC at (865) 574-7172 from a cell phone
			o Contacting the OC via Channel 1 from a Project radio
			o Contacting the supervisor/superintendent and providing any information regarding the fire and its location (to be forwarded to the Y-12 OC)
			NOTE: *Use the phonetic alphabet when calling the OC to avoid confusion identifying the building location.*
			Step 3 – Only after reporting the fire, personnel may voluntarily attempt to fight a small, early-stage fire using an available portable fire extinguisher. This voluntary action should be taken only if personnel believe it is within their capability to safely extinguish or contain the fire, a safe escape route is readily available, and there is no immediate danger.
Safety Watch	Process	Emergency	In the event of an emergency, individuals performing Safety Watch duties are to discontinue the assignment and respond to the emergency as required (e.g., Take Cover, Evacuation).
Safety Watch	Fire Watch	Fire Hot Work	A worker assigned as a Fire Watch:
			· Must wear an orange vest in accordance with UPF-CP-205, Personal Protective Equipment and Safe Work Apparel
			· Directly observes Hot Work activities to Ensure fire safe conditions, as specified in the Hot Work permit, are maintained. Such observations will continue while Hot Work is in progress or until such a time that the assigned Fire Watch is relieved by another qualified Fire Watch
			· Will remain at the work area for at least 30 minutes after Hot Work activities have stopped to Ensure no smoldering embers or slag exist. Fire Watches will watch for fires in all exposed areas and notify supervision and other workers in the event of a fire
			· The Fire Watch ensures that the Hot Work area is barricaded, if required by the permit, and keeps other personnel from entering the barricaded work area
			· More than one Fire Watch is required if:

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			o Combustible materials that could be ignited by the Hot Work operation and that cannot be directly observed by the initial Fire Watch are present (e.g., when welding or cutting over grating surfaces adjacent to floor and wall openings)
			o Fire prevention methods are not sufficient to adequately ensure the prevention of fires. The supervisor responsible for the welding and/or cutting activities then requires additional Fire Watches to guard against fires
			o The Fire Watch will have the authority to stop welding and/or cutting work activities if unsafe conditions develop
			In the event of a fire, the Fire Watch:
			· Follow the Fire Occurrence steps outlined above for proper notification
			· May attempt to extinguish the fire
			· The Fire Watch shall notify the ESH-R if any fire extinguishers are discharged so they may be refilled and appropriate clean up and disposal of the material can be completed.
			Upon completion of the job and after it has been determined that no fires or smoldering materials are present, the Fire Watch returns the fire protection equipment to its original location
Safety Watch	Confined Space Watch (Attendant)	Confined Space	· A Confined Space Watch, also referred to as an attendant, is required when personnel must enter a permit-required confined space (e.g., vessel, tank, pit,
			excavation).
			Workers assigned as a Confined Space Watches must wear orange vests in accordance with UPF-CP-205.
Safety Watch	Equipment Watch (Spotter)	Moving Equipment	· The sole purpose of a Spotter is to assist an equipment operator in maintaining adequate clearance between the equipment and hazards. The operator and Spotter(s) will jointly identify and discuss responsibilities, method of communication, location of the Spotter(s), blind spots, and resources needed to execute the task successfully leveraging the Field Level Hazard Assessment (FLHA) process

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			· The following practices should be considered when planning the activity:
			o Achieving eye contact and an acknowledgment from the equipment operator before walking near or around heavy equipment
			o Never having Spotters stand within the blind spot of equipment operators or truckers
			o Never allowing personnel to stand within the swing radius of equipment while it is operating
			o Checking around and underneath trucks and equipment for personnel before operating them
Safety Watch	Overhead Safety Watch	Dropped Objects	An Overhead Safety Watch is utilized to protect personnel from hazards created during elevated work. Examples include:
			· Short duration tasks with low-risk for dropped objects or similar hazards (e.g., inspections, moving cords, layout/measurements)
			· Work activities in remote areas that are not heavily populated or congested with pedestrians/personnel and will not be impacted by concurrent work activities (e.g., parking lots, laydown areas, etc.)
			· In conjunction with a barricade for elevated work/overhead hazards (e.g., when 2:1 ratio of barricade cannot be achieved)
			· Prior to implementing an Overhead Safety Watch, the task/application must be evaluated by the Responsible Superintendent (Discipline Superintendent) and documented on the applicable FLHA for the activity
			· When an Overhead Safety Watch is used, the following will apply:
			o The Overhead Safety Watch must be strategically located to control and restrict all non-essential personnel and vehicular traffic from entering the overhead work area. Multiple Watches may be required for activities with a larger hazard area or work areas with blind spots

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			o The Overhead Safety Watch will notify approaching personnel of the overhead hazard and prevent access to areas below overhead work for the duration of the work
			o The Overhead Safety Watch will perform tasks from a safe location and remain clear of line-of-fire hazards created by the elevated work activities
			o If access to a work area below the elevated work is required, the Overhead Safety Watch shall stop the elevated work and have it placed in a safe configuration before allowing workers in the area.
Work at Heights (Life Critical Activity)	General Requirements	Fall to Elevation Below	Review the applicable work activities and implement the associated work controls listed in **JHA-00717,** *Elevated Work*
Working with Materials Containing Respirable Crystalline Silica (RCS)	Methods of Compliance	Inhalation of Particulates (Silica)	· For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust
			· For tasks performed using wet methods, apply water at flow rates sufficient to minimize release of visible dust
			· For measures implemented that include an enclosed cab or booth, Ensure the enclosed cab or booth is maintained as free as practicable from settled dust, has door seals and closing mechanisms that work properly, has gaskets and seals that are in good condition and working properly, is under positive pressure maintained through continuous delivery of fresh air, has intake air that is filtered through a filter that is 95% efficient in the range between 0.3 and 10.0 micrometers (e.g., Minimum Efficiency Reporting Value rating of 16 or better), and has heating and cooling capabilities
			· If the equipment/task is not listed or does not apply as indicated in Attachment A, then the use of engineering controls and associated work practice controls shall be considered as the primary method for controlling worker exposures to respirable silica dust.
			Typical work practice controls include the following:

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Working with Materials Containing Respirable Crystalline Silica (RCS)	Work Practice Controls	Inhalation of Particulates (Silica)	· Inspect and maintain controls to prevent or fix malfunctions that could result in increased exposures
			· Confirm that nozzles spray water at the point of dust generation for wet method controls
			· Confirm that hoses are not kinked on a tool used with a dust collector
			· Moisten crystalline silica dust before sweeping, shoveling, or vacuuming
			NOTE: *Material must be continuously and thoroughly wetted at all times with no visible dust generation*
			· Schedule work so that tasks that involve high exposures are performed when no other
			applicable project personnel are in the area
			· When necessary, barricades and signs shall be used to control personnel access to areas to limit not only the number of applicable project personnel exposed to respirable crystalline silica but also the levels to which applicable project personnel are exposed
			· Follow the applicable sections of UPF-CP-318, *Respirator Use and Issuance* and UPF-CP-214, *Barricades and Signs*.
Working with Materials Containing Respirable Crystalline Silica (RCS)	Housekeeping	Inhalation of Particulates (Silica)	· Compressed air cleaning of surfaces or clothing is not allowed unless this method is used in conjunction with a ventilation system that effectively captures the dust cloud created by the compressed air. Workers shall use a ventilation system with a high-efficiency particulate air (HEPA) filter or other approved method to clean surfaces or clothing if necessary
			· Dry sweeping or dry brushing is prohibited where such activity could contribute to applicable project personnel exposure to silica. Use wet sweeping or shoveling, or a HEPA-filtered vacuum cleaner
			· Concrete slurry (e.g., from dust control methods or excess water from concrete
			cleaning) shall be removed from work areas by wet vacuuming or other similar methods and placed into appropriate concrete washout bins, containers or other locations to prevent accumulation of silica dust on work surfaces

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Hoisting and Rigging/Bull Rigging	General Requirements	Loss of Load	Review the applicable work activities and implement the associated work controls listed in **JHA-00722,** *Hoisting, Rigging, and Material Handling*
Confined Space Entry (Life Critical Activity)	General Requirements	Engulfment/Entrapment Hazardous Atmosphere Limited Access/Egress	· Never enter a confined space unless you are trained and authorized to do so, and an entry evaluation or permit has been completed
			· Never enter a confined space unless atmospheric testing has been performed
			· Never enter a confined space without an approved permit
			· Never enter a confined space without an attendant at the entrance. Even when an attendant is present, do not enter without an effective way to communicate with the attendant from inside the confined space
			· Confined spaces include, but are not limited to, sewers, tunnels, underground utility vaults, water towers, storage tanks, process vessels, bins, boilers, and ductwork
			· These spaces share common characteristics that help us understand what a confined space is.
			· Characteristics of a confined space include the following:
			o it is large enough for a worker or workers to enter
			o it has limited means of entry and exit
			o it is not designed for people to enter and work in on a regular basis, and it can contain some form of hazard
			· Some hazards that can be present in confined spaces are oxygen deficiency, flammable or explosive gases, toxic gases, slips and falls, and electrical and mechanical hazards. Contact ES&H for assistance and evaluation of confined spaces on the construction site
			· IF a suspect space is confined AND you cannot confirm that a confined space classification was conducted, THEN DO NOT enter the space
			· Contact supervision to determine if the space was evaluated and classified

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			· IF supervision cannot provide a confirmation, THEN request that ES&H classify the space
			· Do not enter any confined space prior to contacting ES&H and completing UCN-23273, *Confined Space Entry Evaluation*
Field Level Hazard Assessment (FLHA)	Field Level Hazard Assessment Process	Unidentified and Unmitigated Hazards	· FLHA is a pre-task briefing that must be used daily by crews at the beginning of their work shift or when new tasks are undertaken. It is a process of employee participation to identify and mitigate environmental, safety, and health risks and hazards associated with their planned work that day. The JHA process must not replace, or be a substitute for, the daily FLHA process.
Field Level Hazard Assessment (FLHA)	Implementing Field Level Hazard Assessment	Unidentified and Unmitigated Hazards	Prior to beginning work activities each day or after an extended break or interruption (e.g., shift change, weekend), perform the following:
			· Perform a Walkdown and review the work location with involved personnel
			· Review area hazards to ensure they are identified and hazard controls/mitigations are in place to eliminate/reduce them
			· Ensure there are no new hazards unidentified and uncontrolled by the approved JHA
			Using UCN-23552, perform the following:
			o Conduct a FLHA briefing with the work crew and support disciplines
			o Resolve any issues/concerns with the work crew
			o List and discuss the scope of work, anticipated hazards, and controls/mitigation measures for the work to be performed
			o Ensure personnel document participation in the "Employee" section of UCN-23552
			o Conduct appropriate FLHA briefings when any of the following conditions exist:
			· The work area changes
			· Personnel with different classifications will be working in close proximity
			· Differing types of work are performed in close proximity

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			· The work activity changes
			· The Responsible Superintendent deems it necessary
			· Turn in completed forms (i.e., UCN-23552, UCN-23464, UCN-23544, CFN-1268) as applicable at the end of each shift at the designated collection points. The end of shift review/de-briefing section must be completed before submitting these forms to UPF DMC.
Scaffold Use (Life Critical Activity)	Scaffold User	Unauthorized Use Fall to Elevation Below Slips and Trips	· Never access any scaffold without documented evidence of inspection by a designated Competent Person for scaffolding before each work shift
			· Obey the scaffold requirements at all times
			· Never use any scaffold without a proper tag that displays the current day's date. Scaffold requirements include strict adherence to the color-coded tagging system of red (Danger—Unsafe for Use), yellow (Caution), and green (Safe for Use) tags, as appropriate
			· Never access a red-tagged scaffold. Only authorized scaffold builders are permitted to access a red-tagged scaffold, and they are required to wear fall protection
			· Never access a yellow-tagged scaffold without proper fall protection
			· Consider all scaffolds without tags as red-tagged scaffolds
			· Never alter or modify a scaffold, unless you are a designated Competent Person, who is qualified and authorized to do so
			· Touching-the-tag before each use to ensure a scaffold inspection has been completed for the shift
			· Never access any scaffold without a documented and tagged daily inspection. Inspect the scaffold prior to use, looking for holes in the platform, missing handrails and other potential hazards
			· Never access a red-tagged scaffold. Only authorized scaffold builders are permitted, and they must wear required fall protection
			· Never access a yellow-tagged scaffold without 100% tie-off or fall protection

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			· Indicating on the scaffold request when intended use will require scaffold capacity greater than light duty (i.e., 25 pounds per square foot [psf])
			· Ensuring scaffold is not loaded in excess of its duty rating
			· Maintaining housekeeping and accumulation of materials to prevent dropped objects
			· Notifying scaffold erectors when pearlweave, toe board, or other dropped object prevention controls need repair
			· Utilizing barricading, as required, when scaffold dropped object controls (e.g., mesh, toe boards) are incomplete OR when hoisting material outside of the dropped object confines of the scaffold
Scaffold Use (Life Critical Activity)	Scaffold Safety	Unauthorized Use Fall to Elevation Below Slips and Trips	· Climbing on scaffolding components (e.g., cups, rings, diagonal members) is not allowed
			· Free Climbing scaffold structures in any direction above a height greater than 6 ft without using a Personal Fall Arrest System (e.g., harness and retractable lifeline) tied off to an acceptable anchor point is not allowed
			· Ensure an adequate working surface during erection/dismantlement activities
Creating Floor and Wall Openings	Walking/Working Surface Modification	Fall to Elevation Below Dropped Objects	Activities performed by personnel creating a floor hole or modifying existing walking/working surfaces (deemed safe for use via primary fall prevention measures) shall be controlled through a UCN-23432, *Walking/Working Surface Modification Permit*.
			The requirements of the permit include:
			· Only those Crafts who are specifically trained to perform such work (e.g., structural steel ironworkers, carpenters) will be allowed to remove/replace the cover/grating/floor plate/handrail
			· A standard guardrail system shall be installed around any potential opening that presents a fall hazard. All access points to the area shall be equipped with a swing gate or equivalent and properly marked, "(Danger – Fall Protection Required beyond This Point)"
			· Fall protection must be provided and used by those working inside the barricaded area

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			· Walking/working surfaces below the work area shall be evaluated for dropped objects or other hazards to personnel below. As necessary, the area(s) below the work area shall be barricaded to prevent access, protecting personnel from exposure to dropped objects
			· Illumination needs shall be evaluated prior to the start of work and additional lighting shall be provided, where required. The remaining grating/floor plate/handrail bordering the removed grate(s)/floor plates(s) sections must be protected from movement or slippage by securing with wire, clips or other means capable of preventing displacement
			· Removed material must be set in an area so as not to create a tripping hazard or interfere with other work activities. Stacks or bundles of removed material must be organized and stored in accordance with floor-loading limits
			· When reinstalling covers/grating/floor plate/handrail, the Supervisor shall verify all material has been completely re-installed, correctly positioned, and properly fastened/secured
			· When all items have been reinstalled and properly secured, the area shall be inspected by the Supervisor and authorized BNI ES&H Representative for completeness, the barricade can be removed, and the area released for general use
			· If covers must be altered or cut to accept piping, conduit, etc., the personnel performing the work must contact the responsible Supervisor and area Carpenter Supervisor for authorization prior to making any modifications.
Mobile Elevated Work Platforms (MEWPs) (Life Critical Activity)	General Requirements	Contact with Surrounding Structure, Equipment, or Commodities Fire Entrapment Limited Access/Egress Dropped Objects	· Never operate any mechanical elevated work platform without documented training
			· Never stand on the toe board, mid-rail, or top rail of the basket
			· Never work from the basket without being tied off to the manufacturer's designated anchor point, even during ground positioning
			· Never exit the basket at height unless prior, documented approval for the deviation has been obtained from Project ES&H personnel

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		Electrical Shock Fall to Elevation Below	· Follow the operating requirements defined in UPF-CP-224, *UPF Aerial/Scissor Lift Operations*, which apply to all construction site and support area personnel, including subcontractors
			· Never operate an aerial/scissor lift that has not been inspected by a trained operator, in accordance with the requirements specified in UPF-CP-224. At the beginning of each shift or before each use, a trained operator will visually inspect and functionally test the lift and document the results on an approved form
			· Ensure the lift style in use is appropriate for the work task and location (e.g., indoors versus outdoors)
			· Follow all directions related to adverse weather conditions, including lightning and high wind speeds
			· The operator/safety manual(s) are to be maintained with the equipment provided they can be protected from the elements. If this cannot be accomplished, a hard copy may be stored in a central location as determined by the Project Distributable Superintendent
			· All controls must be plainly marked as to their function
			· All capacity and warning decals will be in place, secure, and legible, at both the platform/basket and ground stations
			· All aerial/scissor lifts must be equipped with an ABC-rated fire extinguisher in the platform/basket. The fire extinguisher shall be secured in a manner as to prevent displacement of the extinguisher. Scissor lifts must be equipped with a fire extinguisher 2.5 lbs. or greater. Aerial (boom) lifts must be equipped with a fire extinguisher 10 lbs. or greater
			· Boom-type aerial lifts must be equipped with anti-entrapment devices
			· Aerial/scissor lifts are to be inspected daily before use or at crew/shift change and documented on a UCN-23248, *Aerial/Scissor Lift Daily Checklist*
Mobile Elevated Work Platforms	Operating Requirements	Contact with Surrounding Structure,	Only trained and qualified personnel shall operate aerial or scissor lift devices in accordance with the following:

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(MEWPs) (Life Critical Activity)		Equipment, or Commodities Fire Entrapment Limited Access/Egress Dropped Objects Electrical Shock Fall to Elevation Below	· All personnel must wear an approved PFAS in accordance with the requirements of Section 3.0, *Fall Prevention and Protection*
			· The basket or platform of the aerial/scissor lift will not be loaded in excess of the design lifting load capacity. The weight of personnel, tools, and materials in aerial/scissor lift baskets or platforms will be included as part of the total load capacity. If material cannot be contained inside the aerial/scissor lift basket or platform, obtain approval from the Responsible Supervisor and an ES&H Representative, and document on the FLHA Card before lifting the material
			· Aerial/scissor lift platform or basket will not be secured to any structure for any reason nor be allowed to rest on any structure
			· When aerial/scissor lift equipment is used with outriggers, outriggers shall be positioned on a solid surface
			· Personnel shall stand firmly on the floor of the basket/platform and shall not sit or climb on the edge of the basket/platform or use planks, ladders, or other unapproved devices for work positioning
			· Personnel riding in the equipment should keep their hands off the handrail when raising or lowering the basket use interior grab rail for balance when provided
			· Do not tie electrical cords, welding leads, or hoses to an aerial/scissor lift when operated (traveling horizontally or vertically)
			· When at the work location, the operator should engage the emergency stop function and close the platform mounted control panel cover (if equipped) to prevent accidental movement

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Mobile Elevated Work Platforms (MEWPs) (Life Critical Activity)	Exiting Aerial/Scissor Lifts at Elevation	Limited Access/Egress Dropped Objects Electrical Shock Fall to Elevation Below	Aerial/scissor lifts may be used to access elevated work areas or structures by exiting or entering the lift platform under the following requirements: • There is no other established safe access to the work area (e.g., stairs) • The job must be evaluated to ensure the use of an aerial lift is the safest means to access the elevated area or structure • The Responsible Supervisor for the work and an ES&H Representative must approve the activity and document the approval on CFN-1323 • Personnel must use the lift manufacturer's access point (e.g., gate, slide bar) when entering or exiting the lift Personnel must ensure 100% tie-off is maintained throughout the transition from the lift to the elevated area or structure, from the elevated area or structure to the lift, and while performing work on the elevated area or structure
Ladders	General Requirements	Fall to Elevation Below Dropped Objects	All portable ladders purchased or used on the Project shall meet minimum specifications, including: · Ladders must be vendor-certified as American National Standards Institute (ANSI) Type 1A or greater · Only nonmetallic ladders will be purchased and used on the site (fiberglass ladders are recommended) · Tripod ladders (ladders with three legs) are prohibited · Straight ladders longer than 20 feet are prohibited · Extension ladders longer than 36 feet are prohibited · Stepladders and platform ladders longer than 12 feet are prohibited · All portable ladders will be equipped with nonskid feet
Ladders	Ladder Use	Fall to Elevation Below Dropped Objects	Inspect ladders prior to use to verify: · All hardware and fittings are securely attached and the movable parts operate freely without binding or undue play · Ladder rungs are free from grease, oil, mud, and other materials

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			· Ladder safety feet and other auxiliary equipment are in good condition
			· Ladder does not have any broken or missing steps, rungs, cleats, broken side rails, or any other faulty equipment
			When using a ladder: - Do not use ladders in any manner other than their intended purpose - Two or more people will not work from the same ladder unless it is specifically designed for two people - Place portable ladders on a level and stable surface and secure them or have them held by another person to prevent slipping - Personnel shall face the ladder when ascending or descending and use both hands to grasp the ladder - Do not carry materials or tools in hands while ascending or descending ladders - If working from portable ladders, then remain within the confines (side rails) of the ladder - Prevent unauthorized entry in the area below the ladder with barricades or flagging when overhead hazards are present during ladder use - Do not stand on the platform or top step of a stepladder (i.e., top two steps) - Do not sit on or straddle a stepladder to perform work - When accessing another elevation, extend the top of the ladder 36 inches beyond the upper landing surface. If this is not possible because of the ladder's configuration, install a grab rail(s) 36 inches above the landing to help personnel mount and dismount the ladder
Ladders	Job-Made Ladders	Fall to Elevation Below Dropped Objects	· In instances where manufactured ladders are infeasible, wooden job-made ladders can be constructed and used. Job-made ladders must comply with the requirements of 29 CFR 1926, Subpart X, *Stairways and Ladders*
Ladders	Ladder Inspection	Fall to Elevation Below Dropped Objects	· Ladders that do not have the current quarterly color code marking shall be tagged out of service at the point of discovery using a “Do Not Use” tag until inspected and color coded

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			· Ladders that are damaged or defective shall be immediately tagged out of service at the point of discovery using a "Do Not Use" tag and returned to the Tool Crib
Ladders	Ladder Storage	Fall to Elevation Below Dropped Objects	· When not in use, store portable ladders to protect them from the elements and direct sunlight store ladders away from excessive heat and in areas with good ventilation
			· Other materials are not to be stored on ladders
Orbital Sanding on Coated Metals	General Requirements	Ingestion Inhalation of Particulates	· Employ good personal hygiene techniques such as washing your hands before drinking, eating, or smoking
			· Use an orbital sander with vacuum attachment with HEPA filtration OR when ventilation is not feasible, at a minimum a half-face Air Purifying Respirator (APF 10) with a HEPA/P 100 filter is required
			· If local exhaust ventilation requirement cannot be met, install danger barricade tape with completed danger signs or tags around the coatings removal activity to adequately protect adjacent personnel
Compressed Gas Cylinder; Liquefied Petroleum Gas; and Liquefied Inert Gas Use	General Requirements	Spills Asphyxiation Muscle Strain Ergonomic Cryogenic Burn Fire	Review the applicable work activities and implement the associated work controls listed in **JHA-00713,** *Compressed Gas, LPG, and Inert Gas.*
Welding, Cutting, and Brazing	General Requirements	Inhalation of Coating Fume Burns Flying Particles Arc Flash Shock Fire (Hot Work) Ingestion	Review the applicable work activities and implement the associated work controls listed in **JHA-00719,** *Fire Prevention, Protection, Hot Work and Welding*.

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Welding, Cutting, and Brazing	Material Fit-up/Tack Weld Activities	Arc – Flash Burns	Support personnel in the immediate area assisting with the weld/hotwork activities (i.e., tacking supports) must wear PPE appropriate to the hazard (e.g., gloves, category 2 weld shirt/jacket, shaded glasses, face shield, etc.)
			NOTE: *The "immediate area" consists of the direct work face, weld screened area, aerial lift platform/basket, etc.*
			· The assigned PPE is to protect workers from secondary hazards created by the activity (e.g., sparks, slag, weld arc, flying debris) and is not intended to protect personnel directly watching the weld process.
Welding, Cutting, and Brazing	Shielded Metal Arc Welding (SMAW) on Carbon Steel (Stick Welding)	Inhalation of Welding Fume Arc Flash	**Outdoors**: Provide local exhaust ventilation with a capacity of 100 linear feet per minute per welder/operator with an inline high efficiency particulate air (HEPA) filter (i.e., fume extractor) OR discharge exhaust air outdoors to a location that does not affect other workers or allow exhaust air to be drawn back into the work area.
			When ventilation is not feasible, at a minimum, a half-face Air Purifying Respirator (APF 10) with a HEPA/P 100 filter is required.
			Indoors or Enclosed Areas: Provide local exhaust ventilation with a capacity of 100 linear feet per minute per welder/operator with an inline high efficiency particulate air (HEPA) filter (i.e., fume extractor) OR discharge exhaust air outdoors to a location that does not affect other workers or allow exhaust air to be drawn back into the work area.
			When local exhaust ventilation is not feasible, establish means of adequate general/mechanical ventilation AND at a minimum, use a half-face Air Purifying Respirator (APF 10) with a HEPA/P 100 filter is required.
			Barricade and Signage: If local exhaust ventilation requirement cannot be met, install danger barricade tape with completed danger signs or tags around the welding activity to adequately protect adjacent personnel.

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<table>
<tr><td></td><td></td><td></td><td>Wear safety glasses and a welding hood with a lens shade as follows:
<table>
<tr><th>Electrode Size - in. (mm)</th><th>Arc Current (Amperes)</th><th>Minimum Protective Shade</th><th>Suggested* Shade No. (Comfort)</th></tr>
<tr><td>Less than 3/32 (2.4)</td><td>Less than 60</td><td>7</td><td>10 (*)</td></tr>
<tr><td>3/32 - 5/32 (2.4 - 4.0)</td><td>60 - 160</td><td>8</td><td>10</td></tr>
<tr><td>5/32 - 1/4 (4.0 - 6.4)</td><td>160 - 250</td><td>10</td><td>12</td></tr>
<tr><td>More than 1/4 (6.4)</td><td>250 - 550</td><td>11</td><td>14</td></tr>
</table></td></tr>
<tr><td rowspan="4">Welding, Cutting, and Brazing</td><td rowspan="4">Gas Tungsten Arc Welding (GTAW)/Tungsten Inert Gas (TIG) on Carbon Steel</td><td rowspan="4">Arc Flash
Inhalation of Welding Fume</td><td>Wear safety glasses and a welding hood with a lens shade as follows:
<table>
<tr><th>Arc Current (Amperes)</th><th>Minimum Protective Shade</th><th>Suggested* Shade No. (Comfort)</th></tr>
<tr><td>Less than 50</td><td>8</td><td>10</td></tr>
<tr><td>50 - 150</td><td>8</td><td>12</td></tr>
<tr><td>150 - 500</td><td>10</td><td>14</td></tr>
</table></td></tr>
<tr><td>· Outdoors: Ensure adequate natural ventilation, no additional controls.</td></tr>
<tr><td>Indoors: Ensure adequate general/mechanical ventilation, no additional controls required.</td></tr>
<tr><td>Enclosed/Confined Areas: Contact IH for additional and specific controls for the conditions at hand.</td></tr>
<tr><td>Welding, Cutting, and Brazing</td><td>Welding or Thermal Cutting</td><td>Fume Generation</td><td>All galvanized coatings shall be stripped back to the extent possible from the area of heat application and the following controls shall apply:</td></tr>
</table>

	of Galvanized Coated Steel		Where possible, use non-heat generating cutting methods (e.g., portaband).
			Outdoors: Provide local exhaust ventilation with a capacity of 100 linear feet per minute per welder/operator with an inline high efficiency particulate air (HEPA) filter (i.e., fume extractor) OR discharge exhaust air outdoors to a location that does not affect other workers or allow exhaust air to be drawn back into the work area OR provide adequate general/mechanical ventilation.
			When ventilation is not feasible, at a minimum a half-face Air Purifying Respirator (APF 10) with a HEPA/P 100 filter is required.
			Barricade and Signage: If local exhaust ventilation requirement cannot be met, install danger barricade tape with completed danger signs or tags around the welding activity to adequately protect adjacent personnel.
			· **Indoors or Enclosed Areas**: Provide local exhaust ventilation with a capacity of 100 linear feet per minute per welder/operator with an inline high efficiency particulate air (HEPA) filter (i.e., fume extractor) OR discharge exhaust air outdoors to a location that does not affect other workers or allow exhaust air to be drawn back into the work area.
Welding, Cutting, and Brazing	Gas Tungsten Arc Welding (GTAW) / Orbital Welding on Stainless Steel, Hastelloys and Inconels	Hexavalent Chromium Inhalation of Welding Fume Arc Flash	Remove welding residue and debris from work clothing using a HEPA filtered vacuum prior to leaving the work area for scheduled breaks and at the end of the work shift.
			Clean the welding work area using a HEPA vacuum or a method to minimize dust generation (e.g., wet the debris or use floor sweep) at the termination of the welding activity.
			Outdoors: Ensure adequate natural ventilation, no additional controls.
			Indoors: Ensure adequate general/mechanical ventilation, no additional controls.
			Enclosed/Confined Areas: Contact IH for additional and specific controls for the conditions at hand.

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			Wear safety glasses and a welding hood with a lens shade as follows: **Arc Current (Amperes)** / **Minimum Protective Shade** / **Suggested* Shade No. (Comfort)** Less than 50 / 8 / 10 50 - 150 / 8 / 12 150 - 500 / 10 / 14
Mobile Elevated Work Platforms (MEWPs) (Life Critical Activity)	General Requirements	Contact with Surrounding Structure, Equipment, or Commodities Falls Inadvertent Movement Electrical Shock	· The operator is to ensure adequate clearance is obtained between the lift and structures, equipment, and/or commodities
			· The operator and/or supervisor to perform a pre-work walkdown and determine the need for a spotter(s) when conditions similar to those listed below are encountered
			· Area blind spots exist OR
			· Obstructions exist in the path of planned travel (e.g., clutter, other equipment, other activities) OR
			· Obstructions exist when raising or lowering the lift OR
			· Aerial lift tip over potential. Contact supervision and ES&H prior to operating an aerial lift on uneven surface OR
			· Other (e.g., abrupt edges, holes, tight spots, soft surfaces)
			· Employees riding or working from any aerial lift must wear an approved safety harness securely connected with a personal fall limiter (6ft SRL) to the lift anchorage point at all times
			· To prevent inadvertent lift/platform control activation, engage the Emergency Stop switch when the lift is not in motion

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			· Always treat electrical equipment/cables and components as if they are energized. Any electrical components obstructing the operation of an aerial lift must be removed, properly protected, or managed with the use of a spotter
			· Standard 120-volt extension cords and 208-volt (single-phase twist lock) extension cords are a tool of the trade and craft persons can plug or unplug these cords after shedding the load (e.g., turning off the welder, tool, or heater)
			· Only Temporary Power Electricians can plug in, unplug, or route 480-volt cord sets
			o Only Temporary Power Electricians can operate or reset any breakers in temporary electrical equipment such as panel boards.
Rebar Embed and Commodities Installation	Rebar Mat Fabrication (Horizontal)	Trip Fall Pinch Points Impalement/ Puncture	· When rebar spacing is greater than eight (8) inches install plywood walkways or wire mesh (or equivalent) in the work area
			· Only Ironworker crew members and essential personnel (e.g., Superintendent, QC, FE) that are required to support rebar assembly and installation, as directed by the Responsible Superintendent, are allowed to walk rebar prior to the installation of walk platforms
			· Keep fingers and hands away from pinch points. Use sleever bars (or similar) to separate material and be aware of hand positioning
			· Place approved caps or equivalent over exposed ends of rebar
			· Bend over sharp wire tie ends
			· When working around or reaching into areas with sharp/exposed edges wear durable long sleeve shirts or use cut/puncture resistant sleeves for added protection.
Installation of Structural Steel	General Requirements	Pinch Points Fall to Elevation Below Structure Instability	· Be aware of hand and body placement
			· Use sleever bars or spud wrenches to align steel members
			· Whenever possible, steel erection will be performed with an aerial lift (boom/scissor)

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			· Employees shall not climb structural steel, nor slide columns for access/egress. Vertical travel in structural steel structures shall consist of properly placed and secured access ladders or aerial lifts (boom/scissor)
			· If an overhead (traditional) anchor point locations cannot be achieved, an Alternate Fall Protection Plan (UCN-26359) shall be developed and implemented for the scope of work
			· At least two bolts (wrench tight) are required per connection prior to releasing the crane and rigging. Each connection should be evaluated by the connector to determine if additional bolts (or other support) are warranted or needed due to the size of the structural member, site conditions, or weather conditions. Contact Field Engineering for additional guidance
			· Only authorized personnel shall be allowed to work within suspended load fall zones
Installation of Structural Steel	Installation of Structural Steel - Connecting Steel Members	Suspended Structural Steel	· Routes for suspended loads shall be pre-planned to ensure no employee is required to work directly below a suspended load. When required, employees engaged in the initial connection of the steel (Structural Steel Connectors) shall use tooling (e.g., sleever bar, bullpin) where feasible to temporarily align and support members while working to place and secure the required bolts
			· Only authorized personnel shall be allowed to work within suspended load fall zones
Installation of Structural Steel	Q-Deck Installation Activities	Falling Material Noise	· All decking shall be wind tacked or wind screwed down prior to the end of the task or the end of the shift
			· All excess sheets and bundles of Q-deck shall be secured prior to the end of the task or end of the shift
			· Double hearing protection required, use approved ear plugs and muffs when using powder actuated or pneumatic fasteners to secure Q-decking due to impact noise
			· There is no requirement to install a 100 dBA boundary danger barricading.

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Removal of Fireproofing	Cementitious Fireproofing (via non-powered tools)	Environmental Waste Inhalation	· Collect removed fireproofing chips, dust or filings by appropriate means (i.e., vacuum, etc.). Place debris in clear bags and seal with zip tie, duct tape, or knots and transport to the appropriate Special Waste Staging Area (for silica containing waste)
			o Wet the cementitious fireproofing with water to reduce the generation of dust
Removal of Fireproofing	Intumescent Fireproofing (via powered tools)	Environmental Waste Inhalation	· Collect removed fireproofing chips, dust or filings by appropriate means (i.e., vacuum, etc.). Place debris in clear bags and seal with zip tie, duct tape, or knots and transport to the appropriate Waste Staging Area
			· Where intumescent fireproofing is being removed for the purposes of planned welding, all intumescent fireproof coatings shall be stripped back a distance of four (4) inches from the area of heat application. The area of heat application means the surface area that the flame or arc contacts and any adjacent surface whose surface temperature may be appreciably raised by heat transfer. This also includes the backside of the weld joint when it's accessible.
			· A minimum of a half-face Air Purifying Respirator (APF 10) with a HEPA/P 100 filter is required
			· P100 Particulate filters need to be replaced when:
			o The user has difficulty breathing comfortably or notices an increase of breathing resistance resulting from particle buildup
			o The filter becomes visibly dirty
			o The filter is physically damaged
			· Or at a minimum of every 30 days inclusive of the above requirements.
Vibration Producing Equipment and Activities	General Requirements	Hand/Arm Vibration	· Do not exceed the trigger-time limits listed in ML-SH-801768-A008, *Power Tools Hand-Arm Vibration Levels*. Note that these limits are cumulative over the course of a work shift. Contact IH if you are using several different power tools continuously within the work shift
			· Take breaks from the source of the vibration every hour – perform a different task or rotate with a co-worker

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			· Check tools before using them to Ensure they have been properly maintained and repaired to avoid increased vibration caused by faults or general wear
			· Avoid over-gripping or forcing a tool or work-piece more than is necessary
			· Encourage good blood circulation by:
			o Keeping warm and dry by dressing appropriately
			· Massaging and exercising the fingers during work breaks.
Defeating Safety Devices (Life Critical Activity)	Guards / Safety Protection Devices	Unsafe Conditions	Never Disable, bypass, modify, or remove any safety protection devices without written authorization from the Site Manager and ES&H Manager. This includes, but it's not limited to:
			· Disconnect load indicators
			· Remove Guards or handles from rotating equipment or tools
			· Fix or lock triggers and power switches to keep them in the "on" position
			· Hardwire electrical wires into outlets
			· Use damaged or defective equipment and/or tools
			· Skip or bypass required inspections before using equipment and/or tools
			· Operate equipment without deploying outrigger pads when they are required
Post-Installed Concrete Anchors	General Requirements	Release of Hazardous Energy Electrical Hazard Property Damage	· Personnel shall be trained and qualified (as required by the Project specifications) to perform PICA installations.
			· PICA activities shall be documented on CFN-1081.
			· Regarding embedded item reviews:
			· Reviews are required for the following concrete excavations:
			· Depths greater than 1-inch from the concrete surface when non-carbide tooling is used
			· Depths greater than 4-inches from the concrete surface when carbide tooling is used

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			NOTE: For non-permanent installations, an Inspection Report (IR) is not required when the Lead Civil Field Engineer (LCFE) has evaluated the scope. Once the evaluation is complete and the concrete excavation approved, a drill stop must be used.
			· A drill stop (or similar device) shall be used to prevent damage to embedded items as follows:
			· Non-carbide tooling and carbide tooling with 4 or more cutter head (including full carbide head) shall utilize a drill stop at all times. Tooling shall be controlled by the FE to prevent unauthorized use
			· 2 Cutter head carbide tooling shall utilize a drill stop for concrete excavation depths > 4-inches from the concrete surface
			· Drill stops may be turned off (for both non-carbide and carbide tooling):
			o When permitted by design
			· After the condition has been evaluated by the FE and verbal authorization has been given to proceed. FE inspection is required prior to installing anything in the excavation
Post-Installed Concrete Anchors	Pre-Drilling	Release of Hazardous Energy	· Craft personnel shall lay out the concrete excavations and anchor locations specified on the design documents using survey controls. For complex installations or installations with tight tolerances, templates are recommended to facilitate the layout.
	Pre-Excavation	Electrical Hazard Property Damage	· If a location device (i.e., rebar scanner or ground penetrating radar) cannot be utilized due to adjacent interferences, 1/4-inch diameter pilot holes may be used.
			· When practical, it is recommended for the RS (or designee) to use a locating device (i.e., rebar scanner or ground penetrating radar) for locating embedded items (i.e., reinforcing, pipe, conduit, etc.) or drill pilot holes to establish a pattern within the area where the PICA(s) is to be installed.
	Drilling	Release of Hazardous Energy	· Ensure that drill stops are obtained and used when required in accordance with the requirements.

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Post-Installed Concrete Anchors	Excavation	Electrical Hazard Property Damage	o If an embedded item is encountered, stop drilling/excavating and notify the FE for resolution prior to continuation.
Construction Blind Penetrations	General Requirements	Release of Hazardous Energy Electrical Hazard Property Damage	This Section applies to any aboveground construction activities, including core drilling of concrete walls and slabs, when the following two conditions exist: · 1. The potential exists for contacting utilities or damaging permanent plant commodities (including drywall studs). · 2. The tool(s) or person(s) involved with the activity will be physically accessing areas where direct visual confirmation of the location of enclosed/hidden hazardous energy sources or permanent plant commodities is not achievable. **Exceptions**: · Penetrations limited to the thickness of the gypsum board sheet(s) without entering the blind cavity do not require a blind penetration permit (BPP). Examples include self-drilling screws or using a drill stop to limit the depth of penetration. · **NOTE**: CFN-1300 must be completed and approved in accordance with Y17-95-64-902, *UPF Construction Blind Penetrations* prior to physically completing blind penetration activities, including core drilling of concrete walls and slabs, to prevent damage or personal injury.
Ergonomic Hazard Activities	Various Activities	Musculoskeletal Disorder Injury	Contact ES&H/IH (Radio: Channel 1) to evaluate your work activity if any of the following risk factors are encountered. *Risk Factors* The risk of musculoskeletal disorder (MSD) injury depends on work positions and postures, how often the task is performed, the level of required effort and how long the task lasts. Risk factors that may lead to the development of MSDs include:

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			· **Exerting excessive force**. Examples include lifting heavy objects or people, pushing or pulling heavy loads, manually pouring materials, or maintaining control of equipment or tools.
			· **Performing the same or similar tasks repetitively**. Performing the same motion or series of motions continually or frequently for an extended period of time.
			· **Working in awkward postures or being in the same posture for long periods of time**. Using positions that place stress on the body, such as prolonged or repetitive reaching above shoulder height, kneeling, squatting, leaning over a counter, using a knife with wrists bent, or twisting the torso while lifting.
			· **Localized pressure into the body part**. Pressing the body or part of the body (such as the hand) against hard or sharp edges, or using the hand as a hammer.
			· **Cold temperatures**. In combination with any one of the above risk factors may also increase the potential for MSDs to develop. For example, many of the operations in meatpacking and poultry processing occur with a chilled product or in a cold environment.
			· **Vibration, both whole body and hand-arm, can cause a number of health effects**. Hand-arm vibration can damage small capillaries that supply nutrients and can make hand tools more difficult to control. Hand-arm vibration may cause a worker to lose feeling in the hands and arms resulting in increased force exertion to control hand-powered tools (e.g., hammer drills, portable grinders, chainsaws) in much the same way gloves limit feeling in the hands. The effects of vibration can damage the body and greatly increase the force which must be exerted for a task.
			· **Combined exposure to several risk factors**. May place workers at a higher risk for MSDs than does exposure to any one risk factor.
Tungsten Grinder (i.e., Sharpie DX, Piranha III)	Sharpening non-thoriated Tungsten Electrodes	Electric Shock Lacerations Caught Between	Visually inspect the grinder to ensure the motor, power cord, grinding head and related components are all in good working condition.
			Ensure the proper collet size is selected for the diameter of tungsten to be ground; two collets are stored in the top of the head assembly.
			Handle the equipment with care especially when cleaning to avoid dispersal and inhalation of grinding dust.

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			Grinder is designed to grind tungsten electrodes only. Do not plug grinder into an electrical outlet if cord is frayed or cut. Do not unscrew grinder head while the machine is in operation. Remove plug from electrical outlet when changing the diamond wheel or cleaning the grinder. Keep hands away from moving parts. Wear protective hair covering to contain long hair. Do not wear loose clothing neckties, rings, bracelets, or other jewelry, which may get caught, in moving parts of the machine.
Remove Existing Razor Wire	Cutting razor wire in individually separate sections prior to being removed	Struck-by, Lacerations, & Line of Fire	• Stand out of the line-of-fire when making cuts on the razor wire. The maximum section of wire to be removed/cut is a 40' section at any one time. • Use specialized PPE for handling razor wire defined as: Kevlar or leather gloves, Kevlar or leather leg chaps, Kevlar or leather cape and sleeves for body core protection including the neck area, hard hat with face shield, safety glasses, vest, safety toed boots. • Use danger barricade for the entire work area to prevent unauthorized personnel from entering. Ensure proper access and warning signage is posted. • Prior to cutting the razor wire, ensure the wire is secured to prevent inadvertent movement during the cutting operation. Specifically, secure the wire from spring-back (example: installing "S" hooks to holding razor wire while making inside cuts) • Once the wire is cut, the individuals making the initial cut are to stand a safe distance out of the line of fire while the razor wire is cut free from the fencing. • Once the razor wire bundle is laying on the ground, an excavator secures it on the ground with its bucket. While the bundle is secured, individuals are then permitted to tie the bundle together to prevent springing. • Once razor wire has been secured to prevent springing, the excavator picks it up and places in its secured shipping crate. When the crate is left unattended during shift, the lid must be placed on top. At the end of each shift the lid must be screwed on or locked. • Once the secure shipping crate is at max capacity, the lid is to be secured and the crate moved to an approved laydown.

THE NATION'S URANIUM PROCESSING FACILITY

UPF JOB HAZARD ANALYSIS

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Ensure a new corresponding CFN-1251, *UPF Construction Attendance Sheet*, is signed and inserted in the CWP to document JHA briefing.					
PREPARER:	Anton Panev (Printed Name/Signature)			02/28/25 (Date)	
APPROVAL:					
ES&H:	Robert Drake (Printed Name/Signature)			02/28/25 (Date)	
SITE MANAGER: (DOA-CM-801768-A214)	John Isenberg (Printed Name/Signature)			4/8/2025 (Date)	