THE NATION'S URANIUM PROCESSING FACILITY

UPF JOB HAZARD ANALYSIS

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JHA NO.:	**JHA-00746**	**REV:**	**1**	**ISSUE DATE:**	**5-12-25**
JHA TITLE:	**Civil Concrete Placement, Formwork, Penetration, PIA's and Embeds**	**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*
General Site Activities	Electrical Extension Cords	Electrical Shock	· Follow the requirements of UPF-MANUAL-CM-001
			· An item found with defects shall be tagged "Danger. Defective Tool/Equipment. Do Not Use" and returned to a controlled area
			· Tagged items that are returned shall be checked by an authorized worker to be repaired, returned to the manufacturer, or destroyed as determined by Construction Supervision
			· No taping of extension cords shall be permitted as repair.
General Site Activities	Emergency Eyewash/Showers	Exposure to Hazardous Chemical	· Construction Supervision will consult with IH to evaluate and pre-plan the need for emergency flushing stations where workers may be exposed to chemical or other material hazards
			· The Responsible Supervisor, or Designee, will perform weekly eyewash inspections using form UCN-23381, *UPF Weekly Eyewash Inspection Checklist*, and records will be submitted to UPF DMC and stored in InfoWorks

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Activity	Sub-Activity	Hazard	Control
			· Any obstructions, damage, improper flow, or any other potential problems are to be reported immediately to supervision for resolution
			· Supervision will contact a Subject Matter Expert (SME) to address any obstructions, damage, improper flow, or any other potential problems
			· SMEs will perform initial, six-month, and intermittent maintenance or repair inspections using form UCN-23382, Eyewash Station Change-out Inspection Log, and return to a designated record storage 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*
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.*
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*
General Site Activities	Use of Temporary Outdoor Heating Devices	Fire Inadequate Ventilation	· Fresh air shall be supplied in sufficient quantities to maintain the health and safety of workers
			· Use of kerosene or diesel fueled heaters inside buildings or on scaffolds is prohibited
			· Portable gas heaters shall be equipped with an approved automatic device to shut off the flow of gas if the flame goes out
			· Personnel shall Ensure all flammable and combustible materials have been removed from the immediate vicinity of all temporary heaters prior to using such equipment
Concrete and Masonry	Concrete and Masonry	Loss of Load Struck-by Impalement	· Formwork shall be designed, fabricated, erected, supported, braced, and maintained so that it is capable of supporting all vertical and lateral loads that may reasonably be anticipated without failure

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Activity	Sub-Activity	Hazard	Control
		Dropped Objects Inhalation of Particulates (Silica)	· No construction loads shall be placed on a concrete structure or portion of a concrete structure unless the supervisor determines that the structure or portion of the structure is capable of supporting the loads
			· No worker shall work under concrete buckets while buckets are being elevated or lowered into position. Similarly, no employee shall be permitted under precast concrete members being lifted or tilted into position except those employees required for the erection of those members
			· To the extent practical, elevated concrete buckets shall be routed so that the fewest workers are exposed to the hazards associated with falling concrete buckets
			· Follow requirements of Y72-95-003, *Silica Exposure Control Procedure for Construction of the Uranium Processing Facility Project*
			· Forms and shores (except those used for slabs on grade and slip forms) shall not be removed until the Supervisor determines that the concrete has gained sufficient strength to support its weight and superimposed loads. Such determination shall be based on compliance with one of the following:
			o The Plans, Specifications, Procedures, Guides, and Lift Drawings stipulate conditions for removal of forms and shores, and such conditions have been followed
			o The concrete has been properly tested with an appropriate standard test method designed by American Society for Testing and Materials (ASTM) to indicate the concrete compressive strength, and the test results indicate that the concrete has gained sufficient strength to support its weight and superimposed loads
			· A limited access zone is established whenever a masonry wall is being constructed
			· Establish limited access zones prior to the start of construction of the wall
			· Verify limited access zones are equal to the height of the wall to be constructed plus four feet and run the entire length of the wall

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Activity	Sub-Activity	Hazard	Control
			· Establish the limited access zone on the side of the wall that will not have a scaffold
			· Verify limited access zones are equal to the height of the wall to be constructed plus four feet and run the entire length of the wall
			· Establish the limited access zone on the side of the wall that will not have a scaffold
			· Permit only those workers actively engaged in constructing the wall into the limited access zone. No other workers are permitted to enter the zone
			· Maintain the limited access zone until the wall is adequately supported to prevent overturning and collapse
			· Adequately brace all masonry walls eight feet high or higher to prevent overturning and collapse unless the wall is adequately supported. Keep bracing in place until permanent supporting elements of the structure are established
			· Design and plan slab lifts through a registered professional engineer who has experience in lift-slab construction
			· Implement such plans and designs through the project/facility, and include detailed instructions and sketches indicating the prescribed method of erection
			· Use jacking equipment capable of supporting at least two-and-one-half times the load being lifted to Ensure jacking operations and the equipment are not overloaded
			· Allow no workers, except those essential to the jacking operation, in the structure when any jacking operation is taking place unless the structure has been reinforced sufficiently to ensure its integrity during erection
			· Use equipment designed and installed so that the lifting rods cannot slip out of position, or institute other measures, such as locking or blocking devices that to provide positive connection between the lifting rods and attachments and prevent components from disengaging during lifting operation

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Activity	Sub-Activity	Hazard	Control
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 Pinch Points	· Supervisors will be trained in the basics of manual material handling, hazards and basic controls, and conducting basic risk assessments for material handling work
			· 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*
Hazardous Material Use	Hazardous Material Storage	Improper Storage of Hazardous Materials Spill Fire	· Hazardous materials must be stored in containers compatible with the material and in a way that protects human health and the environment from unintended exposure to the hazards associated with the materials
			· A "first in, first out" storage strategy must be used to help Ensure material does not expire and become a waste product

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Activity	Sub-Activity	Hazard	Control
			· Storage must be performed in accordance with the completed UCN-23353 and SDS requirements, paying attention to storage temperatures, to prevent product degradation and thus waste generation
			· Storage areas must be kept organized so materials can be properly inspected, inventoried, and segregated considering their compatibility
Hazardous Material Use	Labeling of Hazardous Materials	Inadequate Hazard Communication	· Labeling of hazardous materials shall be in accordance with Appendix B, *Container Labeling Instructions*
			· Labels shall have the Product Identifier and words, pictures, symbols, or a combination thereof that can provide employees with the specific information regarding the physical and health hazards of the hazardous chemical
			· Project Personnel may transfer hazardous materials from a bulk container to a suitable portable container for immediate use during their shift only
			· Individual stationary containers (e.g., storage tanks) must have signs, placards, or other appropriate signage attached to them that contain the same information as a manufacture's original label
Hazardous Material Use	Use and Disposal of Hazardous Materials	Contact with Chemicals (adsorption, inhalation, ingestion, Asphyxiation) Improper Disposal of Hazardous Materials	· Contact IH or ES&H Representative if UCN-23353 SDS Evaluation Form is not completed for the specific chemical/product that you are working with
			· Review UCN-23353 and the Safety Data Sheet (SDS) of the chemical/product prior to starting the work
			· Follow the assigned work controls specified in the SDS Evaluation Form
			· Disposal of hazardous materials shall be in accordance with the completed UCN-23353 for the given product/chemical and in accordance with PL-SH-801768- A002, *Construction Waste Management Plan for the Uranium Processing Facility*
		Flying Particles	· Refer to ML-SH-801768-A002, *UPF Eye and Face Protection List*, for task-specific eye and face protection directives

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Activity	Sub-Activity	Hazard	Control
Personal Protective Equipment (PPE)	Task Specific Eye/Face Protection		· 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 - General	Noise	· Refer to UPF-CP-312, *Hearing Conservation Program*, for the selection and use of hearing protection equipment
			· Care includes discarding disposable earplugs when they possess visible signs of uncleanliness. Reusable earplugs and earmuffs must be cleaned and sanitized. Cleaned and sanitized reusable hearing protection must be kept in a clean, dry area
			· Inspect reusable earplugs and earmuffs for wear and tear. Return damaged earmuffs for repair or disposal.
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.
Personal Protective Equipment (PPE)	Hearing Protection - Noise Levels over One-Hundred (100) dBA	Noise	· Reference ML-SH-801768-A011 Sound Levels of Common Construction Power Tools
			· 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

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			· 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.
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	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
			· 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

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Activity	**Sub-Activity**	**Hazard**	**Control**
			o Checking around and underneath trucks and equipment for personnel before operating them
Working On/Near Roadways	General Requirements	Struck By Vehicle Collision	· Safety barriers and DOT traffic signs will be installed to protect workers and warn vehicles of worker presence
			· Substantial physical protection measures capable of withstanding vehicle impact (e.g., concrete barriers, earthen barriers) for personnel who are involved with directing/guiding vehicles on roadways with posted speed limits in excess of 20 miles per hour
			· All road closures will be coordinated with Y12 OC and follow the UPF Traffic Plan for the site
Environmental Conditions (Heat & Cold Stress)	Heat Stress Communications	Heat Stress	When heat is combined with physical activity, loss of fluids, fatigue, and other conditions, then heat-related occupational illnesses and injuries may occur. Be alert to conditions that could cause heat stress and take precautions to prevent it. Check with your ES&H representative for details on how to address extremely hot and/or humid conditions.
			Heat stress can be reduced by taking the following precautions:
			· Drink plenty of cool water
			· Follow a work-and-rest regime developed by the ES&H representative in coordination with your supervisor
			· Make sure you understand the signs and symptoms of heat stress, which include the following:
			o Heat cramps - painful muscle cramps caused by a loss of body salt through excessive sweating

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Activity	Sub-Activity	Hazard	Control
			o Heat exhaustion - indicates the body's cooling system is not working properly. The victim will sweat heavily the victim's skin will be cool and moist and the victim will seem tired, confused, clumsy, irritable, or upset. Victims of heat exhaustion may tell you that they are all right, even when they are exhibiting obvious symptoms, because heat exhaustion affects their ability to exercise good judgment
			o Heat stroke - the deadliest of all heat stress conditions. The victim's body temperature will rise the victim's skin may be hot, red, and dry and the victim may complain of headache or dizziness. The victim will probably be weak, confused, or upset
			o If you feel any of these symptoms, seek first aid immediately. Know the location of the nearest first-aid station and the on-site Occupational Health Services location
			· Heat stress communications include:
			o When heat stress conditions are anticipated, ES&H will post advisories for heat stress (Daily Information Sheet and Safely Speaking). Supervisors flow down this information and advice employees when they are at increased risk of developing heat-related illness
			o When a work/rest regimen is in effect, ES&H will communicate the work/rest regimen via radio announcements and text messages
			o Supervisors and STRs are responsible for flow down of work/rest announcements and for understanding in what areas their employees/subcontractors are working
			o A repeat radio notification will be sent out five minutes after the first one to ensure all workers affected by the work/rest regimen are notified and have enough time to take their rest period, if applicable
			o Work/rest regimens are mandatory. Cool-down areas must be utilized during the rest period.
	Hot Weather Preparation	Heat Stress	When heat stress conditions are expected in upcoming activities, supervision shall begin planning for hot weather by taking the following steps:

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Activity	**Sub-Activity**	**Hazard**	**Control**		
Environmental Conditions (Heat & Cold Stress)			· Establishing cooling stations (e.g., vehicles, shade structures, cool rooms) for areas that may implement a work/rest cycle		
			· Setting up air-moving equipment (e.g., fans, air-conditioners)		
			· Preparing other materials and equipment, as necessary		
			· Briefing workers on heat-related hazards, symptoms, and work controls, encouraging the practice of self-determination		
			· Beginning the evaluation of potential heat-related conditions/tasks		
			· Identifying preventative measures in daily and weekly planning meetings		
			· Briefing supervisors on acclimatization		
Environmental Conditions (Heat & Cold Stress)	Cold Weather Preparation	Cold Stress	Cold stress, or hypothermia, can occur at any time of the year. To prevent cold stress, observe the following:		
			· Dress warmly, in layers. Protect the feet, hands, head, and face. These parts of the body are farthest from the heart and are the hardest to keep warm		
			· Keep dry. Feet are especially susceptible to frostbite and should be kept dry		
			· Avoid body fatigue. If you become fatigued, your body will lose its ability to retain heat. Be sure to replace lost fluids and calories during breaks		
			· Work with another person. Use the buddy system, and look out for the symptoms of cold stress in each other		
			· Learn what to look out for. The symptoms of cold stress may not be apparent to the victim. The first symptoms of hypothermia are uncontrollable shivering and the sensation of cold. The victim may also have slurred speech, memory lapses, and drowsiness. Frostbite can occur without accompanying hypothermia. The most vulnerable parts of the body are the nose, cheeks, ears, fingers, and toes. Symptoms include coldness and tingling in the affected part, followed by numbness and change in skin color to white or grayish-yellow. Frostbite can cause irreversible tissue damage and requires immediate medical attention		

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Activity	**Sub-Activity**	**Hazard**	**Control**		
			When cold stress conditions are expected in the upcoming monthly activities, supervisors shall:		
			· Begin holding discussions regarding the implications of cold stress conditions		
			· Brief personnel regarding the signs and symptoms of cold stress (described in detail in Appendix C, *Symptoms of Cold Exposure*), the factors associated with cold stress, and the applicable work controls to prevent cold stress		
			· Be aware of work conditions (e.g., weather forecast) and the physical condition of potentially affected workers		
			· Refer to DI-SH-801768-A007, *Cold Stress Communication Guidance*, when project workers are exposed to temperatures 20 degrees Fahrenheit or less		
Environmental Conditions (Heat & Cold Stress)	Work/Rest Cycle	Cold Stress	When the air temperature drops to -15°F (providing consideration for wind chill factor), contact Industrial Hygiene to assist in the implementation of work/warming schedules as outlined in the ACGIH TLVs and BEIs.		
Working with Materials Containing Respirable Crystalline Silica (RCS)	Work Practice Controls	Inhalation of Particulates (Silica)	Typical work practice controls include the following:		
			· 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		

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Activity	Sub-Activity	Hazard	Control
			· 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
Working with Materials Containing Respirable Crystalline Silica (RCS)	Concrete Prep.	Flying Particles Inhalation of Particulates (Silica) Environmental Waste	· Reference ML-SH-801768-A002, UPF Eye and Face Protection List
			· Fully and properly implement the engineering controls, work practices, and respiratory protection requirements specified for the equipment/tasks in ML-SH-801768-A010. For tasks performed using wet methods, apply water at sufficient flow rates determined by Industrial Hygiene. For tasks using local exhaust ventilation, use the tool and any attachments according to the manufacturer's recommendations
			· For tasks performed indoors or in enclosed areas, provide a means of exhaust as needed to minimize the accumulation of visible airborne dust. If a respirator is required per Table 2, then a minimum of a half face respirator (APF 10) with P100/HEPA cartridges shall be worn

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			· When conducting periodic maintenance of the HEPA vacuums (i.e., changing the bags, filters, etc.) at a minimum wear a half-face respirator (APF 10). Handle parts and components of the vacuum with care not to suspend the material accumulated on the surfaces
			· Barricade and Signage:
			o Install danger barricade tape with completed danger signs or tags around the activity that requires respiratory protection to adequately protect adjacent personnel
			o Transfer silica dust contained by HEPA vacuum or other removal processes to identified "Special Waste" staging area for disposal (posted area next to the BNI concrete washout area)
			o Slurry material generated by wet control methods should be collected with other solid concrete debris and transported/deposited in the BNI concrete wash-out area.
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

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JHA NO.:	**JHA-00746**	**REV:**	**1**	**ISSUE DATE:**	**5-12-25**
JHA TITLE:	**Civil Concrete Placement, Formwork, Penetration, PIA's and Embeds**	**WORK PACKAGE NUMBER:**	**N/A**	**SPECIFIC LOCATION:**	**N/A**

Activity	Sub-Activity	Hazard	Control
			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
			· 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.
Formwork for Concrete Pour	Assemble and Dismantle Concrete Form Panels	Impalement Pinch Points	· Protect all whaler rods, coil rods, and other impalement hazards with approved caps or equivalent
			· Keep extremities out of the line of fire. Inspect work locations and materials for potential pinch points and identify on the FLHA Card. Use tools (e.g., sleever bars) as needed
			· Whalers worked on a vertical wall shall be worked by a minimum of two people. If two people cannot work the whaler due to space constraints, a tether with positive upward tension on the whaler must be attached before the whaler is loosened and worked
Formwork for Concrete Pour	Installing StayForm	Lacerations Abrasions	· Bend back or otherwise protect sharp/exposed edges of stayform
			· 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

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Activity	Sub-Activity	Hazard	Control
Formwork for Concrete Pour	Handling Gang Forms/Formwork (Hoisting and Rigging)	Loss of Load/Rigging Failure	· Use CFN-1301, *Pre-Lift Checklist*, to determine the correct assembly of the forms prior to lifting (pre and post placement). Inspection form to be signed by two Carpenter General Foreman or a Superintendent/MEVA representative and a Carpenter General Foreman.
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.
Concrete Placement Activities	General Requirements	Skin Irritation Chemical Burns Foreign Body to Eye	· Prevent prolonged skin contact with wet concrete. Remove concrete from skin immediately
			· When performing placement and finishing tasks requiring direct hand contact with wet concrete wear chemical resistant gloves (e.g., PVC, Neoprene, or Nitrile)
			· Wear coveralls, long-sleeve shirts or over-sleeves when performing placement and finishing tasks that may result in significant and or prolonged skin contact with wet concrete
			· When a task or activity requires standing in wet concrete, wear rubber boots high enough to prevent concrete from entering the boot
			· To the extent feasible, use tools with extended handles when placing or finishing concrete to reduce or eliminate skin contact with wet cement

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Activity	Sub-Activity	Hazard	Control
			· Wear safety glasses and a face shield (Reference ML-SH-801768-A002, UPF Eye and Face Protection List) where a splash hazard exists (i.e., concrete discharge or vibrating activities)
			o Ensure eyewash station is in the immediate work area of the concrete pour
Concrete Placement Activities	Set-up of Concrete Pump Truck and/or Priming Slick-Line	Equipment Failure/ Malfunction Line of Fire	· Conduct daily pre-use equipment inspection to include hydraulic lines. If deficiencies are observed, contact Job Supervisor and tag the equipment out of service until repairs have been made
			· Only qualified personnel are to operate equipment
			· Place machine on firm, level ground: outriggers shall be fully extended and lowered on pads before operation tires shall clear the ground
			· Ensure area is clear of all overhead obstructions prior to unfolding boom
			· Ensure slick line is properly flagged/marked or guarded to prevent personnel from tripping
			· Ensure all slick line sections are properly pinned with the correct pins
			· Protect joints/elbows with protective fabric/cover in the immediate vicinity of personnel in case of a failure (e.g., hopper discharge)
Concrete Placement Activities	Operating Pump	Line of Fire Equipment Failure/ Malfunction Environmental Spills	· Inspect connections before use. Keep clear of the discharge hose during hose priming operations
			· Discharge hose must be outfitted with a safety lanyard
			· Prime pump or slick line using water or grout into wheel loader
			· Place plastic/tarp or other spill containment under the pump truck to collect potential leaks/spills
			· Spill kit must be in immediate vicinity of concrete pump truck operations
	Cleanup (Concrete Pump)	Flying Debris/ Line of Fire	· The slick line system must be securely anchored before it is cleaned out
			· The flexible discharge hose must be removed

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Activity	Sub-Activity	Hazard	Control
Concrete Placement Activities			· Ensure the compressed air system is equipped with a shutoff valve
			· Ensure blow out caps are equipped with a bleeder valve to relieve air pressure
			· A trap basket must be inspected prior to each use and secured to receive the clean out device (e.g., rabbit)
			· Install shroud or tarp over backhoe bucket or similar prior to cleanup activity
			· Use a backhoe bucket or similar to catch the concrete material left in the slick line
			· Establish spotters to clear area around the end of the slick line and keep all employees back from the cleanup activity
			· Relieve the pressure from the slick line prior to removing clamps and fittings
Grouting/Concrete Repair Activities	Grouting/Concrete Mixing Activities	Inhalation (Silica) Foreign Body to Eye Caustic/Chemical Burn	· Utilize a bucket/container with local exhaust ventilation attachment (e.g., Ardex Dustfree, Hippo mixer, etc.) connected to a vacuum with integrated HEPA filtration
			· When conducting periodic maintenance of the HEPA vacuums (i.e. changing the bags, filters, etc.) at a minimum wear a half-face respirator (APF 10). Handle parts and components of the vacuum with care not to suspend the material accumulated on the surfaces
			· Barricade and Signage: Install danger barricade tape with completed danger signs or tags around the activity that requires respiratory protection to adequately protect adjacent personnel
			· Conduct mixing activities in an area with good natural ventilation away from other workers. Do NOT perform mixing activities in an enclosed or confined area (e.g., trench box)
			· Mix concrete / grout in a manner that minimizes the generation of airborne dust. Minimize drop distance, and if a long drop is unavoidable, use enclosed chutes or slides. Handle empty bags with care not to suspend the residual material
			· Ensure eyewash station is in immediate work area of the grout activities
			· Wear sealed safety glasses or goggles and a face shield when mixing grout using power tools or mechanical mixer or when cleaning the tools or mixer

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Activity	Sub-Activity	Hazard	Control
			· Remove concrete / grout from skin immediately
			· When performing grout tasks requiring direct hand contact with wet grout wear chemical resistant gloves (e.g., PVC, Neoprene, or Nitrile)
			· Disposable coveralls may be worn to keep work clothing free of dust accumulations. After use do not shake coveralls or use compressed air to remove dust from clothing
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)
			· 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

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Activity	Sub-Activity	Hazard	Control
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
Pressure Washing Activities	General Requirements	Laceration Hypothermia Flying Debris Equipment Failure - Pressure Release	· Zero-degree (red) spray tips are not permitted for general pressure washing activities. Keep body parts clear of spray nozzle while in use. Never direct spray towards self or other personnel. Pressure washing activities require the use of metatarsal foot protection (i.e., rubber boots with integrated metatarsal protection)
			· If the ambient temperature falls to thirty-two (32) degrees Fahrenheit (F) or lower and there is potential of back spray that causes the outer layer of clothing to become wet, the following provisions shall be considered:
			o Wear water resistant clothing such as rain gear or TyChem coverall
			o Plan work so it will be performed away from windy, drafty, or unprotected areas as much as possible
			o If the ambient temperature reaches twenty (20) degrees or lower all pressure washing activities shall be evaluated for approval by ES&H and Supervision
			o Wear safety glasses or goggles and a face shield
			o Reference ML-SH-801768-A002, *Eye and Face Protection List*
			· Consider the inclusion of barricade and signage when person is working in the immediate vicinity of pressure washing activities. Install caution barricade tape with caution signs or tags at a sufficient distance around the work activity to prevent inadvertent access by personnel

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Activity	Sub-Activity	Hazard	Control
			· Inspect hoses for possible cuts, leaks, or defects prior to use. Replace defective hose before use to avoid possible injury
			· When adding additional hoses, ensure unit is turned off and system is de-pressurized
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
			· 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.
HDPE Piping - Pipe Fusion Activities	General Requirements	Improper Use of Tools/Equipment Rotating Equipment Burn	· Only trained and authorized personnel shall operate pipe fusion welding machine
			· Remove or secure all loose-fitting clothing, etc. around moving machine parts
			· Wear heat resistant gloves as listed on ML-SH-801768-A003, *UPF Glove Matrix*.
Environmental Protection Practices and Requirements	Spill Prevention and Control	Unwanted Environmental Impact	· Maintain best management practices for spill prevention, such as the following:
			o Store hazardous materials away from drainages, streams, and wetlands
			o Provide weather protection and secondary containment as necessary
			o Ensure spill kits are stocked and available on site

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Activity	Sub-Activity	Hazard	Control
			· Take the following actions if a minor (hydraulic, fuel) spill occurs:
			o Shut down the equipment
			o Isolate the spill and prevent the spilled fluid from entering into drains or waterways
			o Apply absorbent material and remove or containerize the contaminated soil
			· Take the following actions if a major or emergency spill occurs:
			o Evacuate as necessary or as directed by emergency services personnel
			o Notify your supervisor and call OC at (865) 574-7172. The OC will dispatch the Spill Response Coordinator or Fire Department as necessary
			· If safe to do so, then contain the spill to prevent it from spreading.
Environmental Protection Practices and Requirements	Erosion and Sediment Control	Unwanted Environmental Impact	· Install erosion and sediment controls prior to any construction work. Maintain those controls throughout the work. Controls may be temporarily removed during a shift, but must be replaced at the end of the shift
			· Report any damaged or nonfunctioning controls to your supervisor
Blow Wand for Cleaning	General Requirements	Foreign Particles Airline Coupler Failure Inhalation of Silica Dust	· Use a commercially available blow wand
			· Wear sealed safety glasses or goggles and a face shield
			· Use whip restraints and excess flow check valves on air lines
			· 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 or other approved means that eliminate airborne dust generation (i.e., water/wetted surface)
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:

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Activity	Sub-Activity	Hazard	Control
			· 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
			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 Pre-Excavation	Release of Hazardous Energy Electrical Hazard Property Damage	· 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.
			· 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.

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Activity	Sub-Activity	Hazard	Control
			· 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.
Post-Installed Concrete Anchors	Drilling Excavation General Requirements	Release of Hazardous Energy Electrical Hazard Property Damage Release of Hazardous Energy Electrical Hazard Property Damage	· Ensure that drill stops are obtained and used when required in accordance with the requirements.
			o If an embedded item is encountered, stop drilling/excavating and notify the FE for resolution prior to continuation.
Construction Blind Penetrations			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.

UPF JOB HAZARD ANALYSIS

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Activity	Sub-Activity	Hazard	Control
Core Drill	General Requirements	Rotating Parts, Inhalation of Silica, Electrical Shock High Noise, Flying Debris, Dropped Objects, Pinch Points, Line of Fire	- Ensure you have no loose clothing, badge lanyard is secured or tucked away, vest fits properly and zipped up. - Use tool equipped with integrated water delivery system that supplies water to cutting surface. - Use GFCI protected outlet and keep connections elevated away from water. - When working at elevation, always fill out dropped object prevention check list and implement all controls as applicable. - When assembling or disassembling core drill, identify and ensure all body parts are clear of potential pinch points and that the device is powered off. - Ensure concrete slurry is contained and skin contact is avoided. o If the potential for eye contact exists, ensure an eyewash station is located in the immediate work area. - When drilling pilot holes in the floor, ensure work areas below are evaluated for high noise conditions (1st floor if drilling into 2nd floor, etc.) - When drilling vertically, the suction plate must be powered by a separate cord and must be tagged with a Danger – Do not Operate tag with the language "Do not unplug". - Ensure connections are greased to avoid using undue force to dismantle the bit - When placing the feed handle, ensure the orientation of the drill is assessed to avoid reaching over/under any rotating parts
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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Activity	Sub-Activity	Hazard	Control
			· **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.

THE NATION'S URANIUM PROCESSING FACILITY

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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:	Nicholas Prewitt Printed Name/Signature			05/12/25 Date	
APPROVAL:					
ES&H:	Wayne Danekas Printed Name/Signature			05/12/25 Date	
SITE MANAGER: (DOA-CM-801768-A214)	Jimmy Owens Printed Name/Signature			05/12/25 Date	