THE NATION'S URANIUM PROCESSING FACILITY

UPF JOB HAZARD ANALYSIS

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JHA NO.:	**JHA-00724**	**REV:**	**0**	**ISSUE DATE:**	**11-22-23**
JHA TITLE:	**Industrial Hygiene and Environmental Protection**	**WORK PACKAGE NUMBER:**	**N/A**	**SPECIFIC LOCATION:**	**N/A**

Activity	Sub-Activity	Hazard	Control
Hazardous Material Use	Hazardous Material Storage	Improper Storage of Hazardous Materials	· 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
		Spill	· A "first in, first out" storage strategy must be used to help Ensure material does not expire and become a waste product
		Fire	· 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)	· 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
		Improper Disposal of Hazardous Materials	· Review UCN-23353 and the Safety Data Sheet (SDS) of the chemical/product prior to starting the work

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Activity	**Sub-Activity**	**Hazard**	**Control**
			· 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*
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	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.
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.
Environmental Conditions	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**
(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

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			· 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
			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.
Respiratory Protection	Respirator Issuance	Improper use of Respiratory Protection	The process used during issuance of respirators from the issue point is as follows:
			· User must be clean shaven for tight-fitting face-piece respirators and hooded PAPR with a seal along the face. User will meet requirements for being clean shaven at time of use
			· User must provide a current respirator qualification card to the Respirator Issuer indicating the user is qualified to wear a respirator (make, model, and size), and respiratory training is current

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Activity	Sub-Activity	Hazard	Control
			· User checks the plastic bag containing the respirator to ensure it is sealed
			· User verifies the correct make, model, and size of the respirator has been issued by the Respirator Issuer
			· User checks cartridges/canisters provided by the respirator issuer to verify the appropriate cartridges/canisters were provided and the expiration date has not been exceeded
			· User completes and signs the UCN-23309, *UPF Air Purifying Respirator and Cartridge Issuing*, at the time of initial issuance of a respirator
			· Users will be issued a respirator, filters/cartridges, a storage bag, and respirator wipes. The user wipes and will install cartridges/canisters on the respirator, if applicable, prior to use
Respiratory Protection	Respirator Inspections	Improper use of Respiratory Protection	The Respirator User shall adhere to Occupational Safety and Health Administration (OSHA) inspection check procedures and/or manufacturer's recommendations prior to each use.
			The user inspects the following items before donning respirator:
			· Tightness of connection
			· Condition of face-piece
			· Cleanliness of face-piece/visor
			· Head straps
			· Valve and connecting tube
			· Cartridge/canister
			· Elastic parts (for pliability)
			· Respirator function
Respiratory Protection	Respirator Seal Checks	Improper use of Respiratory Protection	The Respirator User shall follow the OSHA seal check procedure or manufacturer's recommendations prior to each use.
			The following are the procedures identified by OSHA:

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Activity	Sub-Activity	Hazard	Control
			· The user shall conduct negative-pressure seal check on tight-fitting respirators each time they don the respirator and prior to entering the hazardous atmosphere, using the following procedures:
			o Close off inlet openings of the respirator, canister(s), cartridge(s), or filter(s) by covering with palm of hands by replacing the inlet seal on the canister(s) or by squeezing a breathing tube or blocking its inlet to stop the passage of air
			o Inhale gently and hold breath for ten seconds
			o A satisfactory fit is achieved if the face-piece collapses slightly and no inward leakage of air into face-piece is detected
			· The user shall conduct positive-pressure seal check on tight-fitting respirators each time they put on the respirator and prior to entering the hazardous atmosphere using the following procedures:
			o Close exhalation valve or breathing tube, or both, then exhale gently
			o A satisfactory fit is achieved if a slight buildup of positive pressure is generated on the inside of the face-piece and no outward leakage between the sealing surface and the face is detected
			o If outward leakage is detected, reposition the face seal and/or straps and repeat this sequence until a satisfactory seal check is obtained
Respiratory Protection	General Use Requirements	Improper use of Respiratory Protection	The Respirator User Requirements during general use are as follows:
			· Users may make adjustments to respirators (e.g., head straps), but Respirator Users are not allowed to make modifications or interchange parts from other respirators
			· Users don respirator in clean areas
			· Users shall not remove their respirator while in a hazardous atmosphere

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			· Users shall leave the work area to wash face and respirator face piece as necessary to prevent eye or skin irritation associated with respirator use
			· Users shall leave the hazardous atmosphere immediately if they smell, taste, or otherwise detect vapors inside an air-purifying mask, or if breathing difficulty occurs
			· When using respirators during a work shift, users are to store and protect their assigned respirators when the respirators are not being worn. The respirators are to be kept clean (e.g., place them back in the bag they came in) and out of the elements, including direct sunlight (e.g., kept in job boxes, in shaded areas, or returned to a drop off location, if no longer required for task). If using for longer than one shift, then respirator shall be cleaned after each shift and stored appropriately (e.g., a cabinet in a temperature-controlled area)
			· Users are responsible for knowing and following the change-out schedule for cartridges/canisters used
			· Users' filter/chemical cartridge change out schedule is provided in the JHA
			· Users contact the supervisor and/or Industrial Hygiene after experiencing respirator mechanical failure, and shall leave the work area immediately
Respiratory Protection	Voluntary Respirator Use	Improper use of Respiratory Protection	Employees approved for voluntary dust mask use shall be provided the information contained in UCN-23310, *UPF Filtering Facepiece Approval/Issue for Voluntary Use*
Respiratory Protection	Respirator Malfunction	Improper use of Respiratory Protection	If a respirator malfunctions at any time during the shift:
			· Immediately leave the area
			· Report the malfunction to the supervisor and to BNI-IH and BNI RRPA
Respiratory Protection	Respirator Cleaning and Sanitation	Improper use of Respiratory Protection	Respirator users are responsible for the daily cleaning and proper storage of respirators issued to them, including the following:
			· Thoroughly inspect the respirator for damage and replace as needed
			· Store the clean respirator in a storage bag and keep separate from used P100 filters

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Activity	**Sub-Activity**	**Hazard**	**Control**
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.
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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			· 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	· Reference ML-SH-801768-A002, UPF Eye and Face Protection List
		Inhalation of Particulates (Silica)	· 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
		Environmental Waste	· 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.
Confined Space Entry (Life Critical Activity)	General Requirements	Engulfment/Entrapment	· Never enter a confined space unless you are trained and authorized to do so, and an entry evaluation or permit has been completed
		Hazardous Atmosphere	· Never enter a confined space unless atmospheric testing has been performed
		Limited Access/Egress	· 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

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			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
			· 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*
Orbital Sanding on Coated Metals	General Requirements	Ingestion	· Employ good personal hygiene techniques such as washing your hands before drinking, eating, or smoking
		Inhalation of Particulates	· 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
Removal of Fireproofing	Cementitious Fireproofing (via non-powered tools)	Environmental Waste	· 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)
		Inhalation	o Wet the cementitious fireproofing with water to reduce the generation of dust

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Removal of Fireproofing	Intumescent Fireproofing (via powered tools)	Environmental Waste	· 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
		Inhalation	· 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
			· 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
			· 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

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			· Encourage good blood circulation by:
			o Keeping warm and dry by dressing appropriately
			· Massaging and exercising the fingers during work breaks.
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
			· 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

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JHA TITLE:	**Industrial Hygiene and Environmental Protection**	**WORK PACKAGE NUMBER:**	**N/A**	**SPECIFIC LOCATION:**	**N/A**

Activity	**Sub-Activity**	**Hazard**	**Control**
Environmental Protection Practices and Requirements	Unexpected Conditions and Sensitive Area Protection	Unwanted Environmental Impact	· Project personnel must be knowledgeable about and comply with environmental rules and regulations applicable to their work tasks, including rules and regulations relating to hazardous substances and wastes. Review work packages and other work control documents to understand environmental requirements for a specific work task
			· If you encounter any of the following during the course of your work, stop and notify your supervisor and/or ES&H representative:
			o Artifacts (archeological or production related)
			o Chemically (smelly, shiny, or sticky) or radiologically contaminated soils
			o Buried drums, pipes, tanks, and other debris
			· Sensitive areas include wetlands, riparian zones (areas near creeks, streams, or similarly flowing water), archeological sites, greenfield sites, and sensitive habitat areas
			· Review applicable environmental practices and regulations before starting or performing construction work in or near a sensitive area:
			o Ensure the area has been assessed for compliance and cleared for work to start by a competent person
			o Ensure boundary limits are established and understood
			o Sensitive areas and buffer zones are often marked on the Project footprint.
Environmental Protection Practices and Requirements	Disposal of Waste	Improper Disposal of Waste	**General waste segregation guidelines for any coatings or fireproofing**
			· Brushes and naps (applicators) are to be put in dedicated 6ml plastic bag for specific application.
			· Liners are to be put in a dedicated 6ml plastic bag.
			NOTE: E100 Liners may be put into bags with mixed material at the end of shift for disposal (current process).
			· All excess paint is to be poured back into the original paint can and sealed.

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Activity	Sub-Activity	Hazard	Control
			· Any rags used need to be put in a dedicated 6ml plastic bag for specific applications.
			· All bags are to be clear bags.
			· Any cans containing thinner are not to be placed in plastic bag.
			· Material stored in metal buckets to be sealed with lid, picked up by Distribs (tech support), and taken to waste connex for sorting/labeling.
			· All bags shall be labeled with name, contents, date, and time. Must be legible.
			o Use of Tag or "tape flag" acceptable.
			· All contents in bags should weight no more the 35 lbs.
			· Material cans must be verified (by RCRA trained person) prior to stacking or disposing in metal recycling.
			· Ensure all containers are free of any residual liquid or moisture by visual inspection. Clean out with rag.
			· Ensure all waste streams are segregated into dedicated bags. (I.e. PPE, applicators, rags, etc.)
			o All PPE (i.e. Tyvek, gloves, glasses, respirator cartridges) should be placed in dedicated back for the specific application.
			· All employees have the right to STOP work when unsure.
			· In the event of an emergency (i.e. Suspect bag or drum expanding) Follow the proper communication (set forth in separate communication chart) for proper notification.
			o In case of emergency contact the Y-12 Operations Center: 865-574-7172.
			KEY NOTES:
			· Do not put empty paint cans into the bags with the poured-up paint.
			· Do not stack buckets or cans inside each other.

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Activity	Sub-Activity	Hazard	Control
			· Do not place Part A and Part B in the same bag.
			· Do not bag any buckets or liners with any "residual" paint or thinners.
			· Do not open bagged waste once it has been sealed.
			· THE GUIDELINE ABOVE ARE TO BE USED FOR THE FOLLOWING PAINTS (any materials not listed in this should be added to next revision as applicable)
			o Phenoline 1205 (all colors)
			o Phenoline 187
			o Acrolon 218 hs
			o Macropoxy 646
			o Carboguard 60
			o Carboguard 890
			o Carboguard 501
			o Carbomas□c 94
			o Carbothane 133
			o Carbomas□c 15
			o Themolag 3000
			o Phenoline 1205 (all colors)
			o Carbozinc 859
			o Euco Diamond Hard
			o Pel Seal
			o Loxon Caulking

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Activity	Sub-Activity	Hazard	Control
			o E100
			o Primer 67 LV
			o Polymer Alloy 2000 LE
			o Scratch Coat 200
			o Sealer 200WB
			Latex/Acrylic Materials
			· Flush material out of pump with the use of water.
			· Spent material and water rinsate to be pumped into buckets sealed.
			· All bags/buckets shall be labeled with name, contents, date, and time. Must be legible.
			· Use of Tag or "tape flag" acceptable.
			Guidelines applicable to the following coatings (any materials not listed in this should be added to next revision as applicable):
			· Pro Industrial Waterbased Alkyd
			· Urethane Promar 200
			· Promar 200 VOC
			· Loxon - Acrylic
			· Solo -Acrylic
			· Devguard 4306 - Alkyd Seal Grip - Acrylic
			· Latex Permacrete 4-603 - Acrylic
			· Speedhide - Acrylic Latex Sealer 200WB -
			· Urethane
			Solvent Based Materials

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Activity	**Sub-Activity**	**Hazard**	**Control**
			· Flush material out of pump with approved thinners
			o Inside Building Only
			§ Thinner 229
			§ Thinner 236 E
			o Outside Building
			§ Acetone
			§ Carboline Thinner #2
			· Spent material should be pumped out and poured into the original containers and sealed.
			· Thinner rinsate should be pumped into buckets and sealed.
			· All bags/buckets shall be labeled with name, contents, date, and time. Must be legible.
			o Use of Tag or "tape flag" acceptable.
			KEY NOTES:
			· Do not put empty paint cans into the bags with the poured-up paint.
			· Do not stack buckets or cans inside each other.
			· Do not place Part A and Part B in the same bag.
			· Do not place any buckets or liners with any "residual" paint or thinners inside of a bag.
			Guidelines applicable to the following coatings (any materials not listed in this should be added to next revision as applicable):
			· Carbozinc 859
			· Phenoline 1205
			· Thermolag 3000 SP
			Cementitious Fireproofing (gypsum based)

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Activity	**Sub-Activity**	**Hazard**	**Control**
			· Southwest 5GP is mixed with water.
			· Spent material is to be accumulated in dumpsters and then taken to the Concrete washout basin to be dumped.
			· Removal (dry) cementitious is to be bagged and taken to the waste connex to be labeled and sorted.
			· All contents in bags should weigh no more than 35 lbs
			Silica
			· Bag applicable material in 6ml plastic bag.
			· Label bag as Silica.
			· Place labeled and closed bag within designated silica waste area.
			Aerosol Cans
			· Check Tool Crib flammable cabinets to make sure no other cans could be used before obtaining a new can.
			· Once aerosol cans have been finished, place empty can within designated flammable cabinet.
			NOTE: Ensure waste has been properly labeled.
			If other wastes are generated and not listed in this document, contact BNI Environmental for requirements on disposal.
Compressed Breathing Air	Compressed Breathing Air	Hazardous atmosphere	· The compressed breathing air quality shall meet or exceed the requirements of Grade D breathing air as specified in Compressed Gas Association, CGA G-7.1-2011, *Commodity Specification for Air*.

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Activity	Sub-Activity	Hazard	Control
		Inhalation of Dust	· Compressed gaseous air used with airline respirators shall have a maximum dew point 10°F (5°C) lower than the lowest ambient temperature to which any regulator or control valve on the respirator or air supply system may be exposed. Airline quick disconnect fittings must be incompatible with other fittings used in the workplace to prevent inadvertent supply with non-breathing air or other gas.
		Hazardous Substances	· The breathing air system components shall be inspected and maintained in accordance with the manufacturer's recommendations. Inspectors of breathing air systems shall be trained in accordance with the system component manufacturer's recommendations and frequency. Records of inspection and maintenance shall be kept. Carbon monoxide monitors, if used, shall be calibrated and maintained according to the manufacturer's recommendations.
			· Breathing air systems that utilize an oil lubricated compressor, or air compressors powered by internal combustion engines, shall have a continuous carbon monoxide monitor with alarm detectible by the wearers. If the monitor alarms, the compressor shall be shut down immediately until the source of contamination is abated.
			· The intake of compressors and ambient air pumps shall be located and monitored to prevent entry of contaminated air into the system.
			· To ensure a continued high quality air supply that complies with the requirements of Grade D air, and to account for any distribution system contaminant input, a representative sample shall be taken at air supply points of attachment where the respirator wearer connects to the system. Air quality sampling frequency shall be: a) prior to initial use b) performed periodically (e.g., quarterly), as directed by the program administrator c) following major overhaul, modifications or extensive repairs of any part of the breathing air system d) prior to reuse, if the compressor has been idle for a long period as defined by the program administrator e) whenever inadequate air quality is suspected
			· Compressed breathing air shall be tested as specified in **Table 3**

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Activity	Sub-Activity	Hazard	Control
			Table 3 - Air Sampling for Compressed Breathing Air **Type/Sample** | **Compressor Type: Oil Lubricated** | **Non-Oil Lubricated** | **Combustion Engine Powered** Water Vapor | X | X | X CO | X | — | X Condensed Hydrocarbon | X | — | X CO_2 | — | — | X Odor | X | X | X
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:
			· **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.

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Activity	Sub-Activity	Hazard	Control
			· **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.

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 R. Panev** Printed Name/Signature		**11-22-23** Date	
APPROVAL:					
ES&H:		**Kieran S. Kelly** Printed Name/Signature		**11-22-23** Date	
SITE MANAGER: (COI-CM-801768-A087)		**Matthew W. Schmid** Printed Name/Signature		**11-22-23** Date	