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REVISION LOG

Revision 6

☐ Intent ☒ Non-Intent Implements PRMS Requirements: ☒ Yes ☐ No

- Added bullet point to Section 2.3, *Environmental Safety and Health Representative*
- Removed Note from Section 3.3.3.
- Updated bullet 3 under "When using a ladder" in Section 7.3, *Ladder Use* to remove straight/extension
- Other changes include:
  - Updated references and acronyms
  - Editorial changes

Revision 5

☒ Intent ☐ Non-Intent Implements PRMS Requirements: ☒ Yes ☐ No

- These changes are in response to Action 01 of Condition Report 25774-000-GCA-GAM-04948, *OFI - Implement Permitting Process When Exiting MEWPs at Elevation (2024 BESH)*
- The following form has been revised as a result of this document:
  - CFN-1323, *Elevated Work Risk Assessment Permit* to include exiting MEWPs at elevation activities
- The following forms have been obsoleted as a result of this document:
  - UCN-23556, *Cable Tray Access Work Request*
  - UCN-26359, *Alternate Fall Protection Plan*
- Revised section 3.3.4 Fall Protection Risk Assessment
- Revised section 3.4 Alternate Fall Protection Plan title to Primary Fall Prevention System
- Revised Section 3.6.4 Working from Cable Trays
- CFN-1323 was revised to include activities previously controlled by UCN-23556, *Cable Tray Access Work Request* and UCN-26359, *Alternate Fall Protection Plan*
- Other changes include:
  - Updated sections referencing UCN-23556 and UCN-26359
  - Updated references and acronyms
  - Editorial changes

Previous revisions on record

CONTENTS

1.0 INTRODUCTION

1.1 Purpose

This Manual establishes the minimum requirements and guidance for performing elevated work at the Uranium Processing Facility (UPF) construction sites and managed facilities, including requirements for personnel, protective equipment, and access equipment.

This Manual contains elevated work requirements that include Fall Prevention and Protection; Floor and Wall Openings; Dropped Object Prevention; Aerial/Scissor Lift Operations; Ladders; Scaffold; Roofing Work; and Suspended Personnel Platforms (SPPs).

1.2 Scope

This Manual applies to all UPF and subcontractor personnel who perform elevated work. Subcontractor personnel shall conform to applicable UPF and/or other specific occupational safety and health rules and procedures, as delineated in their respective contract documents.

2.0 RESPONSIBILITIES

2.1 Site Manager

The Site Manager is responsible for:

- Ensuring the implementation of this Manual and ensuring all Project personnel actively participate
- Providing worker support, facilities, and other resources necessary to carry out the requirements of this Manual in an effective manner

2.2 Environmental, Safety, and Health Manager, BNI

The Environmental, Safety, and Health (ES&H) Manager, Bechtel National, Inc. (BNI), is responsible for:

- Interpreting the regulations associated with this Procedure
- Interpreting the procedural requirements as to intent and application
- Implementing and administering the requirements of this Manual
- Providing oversight of elevated work practices
- Recommending mitigation measures for elevated work hazards
- Assisting in interpreting regulations associated with the Manual
- Interpretation of the Manual as to intent and applications

2.3 Environmental, Safety, and Health Representative

The ES&H Representative is responsible for:

- Supplying technical guidance and oversight of elevated work practices through planning activities and field observations

- Approving Fall Protection Risk Assessments
- Fulfilling Fall Protection Competent Person responsibilities outlined in Section **3.2.1**

2.4 Project Field Engineer

The Project Field Engineer (PFE) is responsible for: supplying technical support to perform calculations and review plans or permits as needed.

2.5 Training

The Training Department is responsible for:

- Developing and maintaining the required courses related to elevated work
- Maintaining records for personnel who successfully complete the training module(s)

2.6 Discipline Superintendent

The Discipline Superintendent is responsible for:

- Being thoroughly familiar with the requirements of this Manual and having a full understanding of the individual roles and responsibilities
- Allocating time and resources for personnel to receive required training
- Planning work activities to identify and minimize potential hazards created from elevated work through work sequencing and constructability
- Ensuring unsafe conditions or behaviors are corrected/controlled

2.7 Supervisor

The Supervisor is responsible for:

- Being thoroughly familiar with the requirements of this Manual and having a full understanding of the individual roles and responsibilities
- Ensuring personnel performing elevated work have received the required training
- Planning work activities to identify potential hazards created from elevated work and taking the appropriate steps to mitigate those hazards
- Completing Fall Protection Risk Assessments when applicable
- Ensuring unsafe conditions or behaviors are corrected/controlled

2.8 UPF Personnel

UPF Personnel are responsible for:

- Acquiring proficiency and adherence to the requirements specified in this Manual through dedicated training on relevant topics

3.0 FALL PREVENTION AND PROTECTION

3.1 Purpose

This section provides the requirements for protecting personnel from fall hazards through the use of primary fall prevention systems and secondary fall protection systems (i.e., Personal Fall Arrest Systems [PFAS]).

3.2 Responsibilities

3.2.1 Fall Protection Competent Person

The Fall Protection Competent Person is responsible for:

- Identifying predictable fall hazards in the work environment
- Providing guidance on the use of fall protection systems
- Authorizing prompt corrective measures to eliminate those hazards

3.2.2 Fall Protection Qualified Person

The Fall Protection Qualified Person is responsible for calculating and approving job manufactured fall protection system components (i.e., vertical and horizontal lifeline systems, rebar/wall anchorage points).

NOTE: *A designated engineer with knowledge and experience in the dynamics of fall protection can be a qualified person as defined by this Manual.*

3.3 Hazard Identification and Control

3.3.1 Identifying Potential Fall Hazards

When preparing to perform elevated work:

1. Define the work scope in sufficient detail to facilitate the hazard identification process
2. Utilize the Job Hazard Analysis (JHA) process to identify potential fall hazards and work methods prior to the start of work in accordance with Y17-95-64-823, *UPF Field Level Hazard Assessment/Job Hazard Analysis Program (FLHA/JHA) Process.* The UCN-23552, *Field Level Hazard Assessment (FLHA) Card*, should be used to identify daily site conditions and provide controls/work practices to mitigate those hazards
3. Implement appropriate hazard controls using the hierarchy of controls:
    A. Hazard Elimination
    B. Engineering
    C. Administrative
    D. Personnel Protective Equipment (PPE) controls, as appropriate

3.3.2 Minimizing Exposure to Fall Hazards

Minimize exposure to fall hazards using the following method(s), when feasible:

- Modifying the work to eliminate the exposure (e.g., prefabricating at ground level)
- Reducing the number of personnel exposed
- Relocating equipment/work area (e.g., moving heating, ventilating, and air conditioning [HVAC] units from a roof to the ground)
- Choosing different access equipment options (e.g., reducing the exposure, choosing an aerial lift rather than a ladder or scaffold)

3.3.3 Controlling Potential Fall Hazards

Where hazards cannot be eliminated, primary fall prevention systems (Engineering Controls) are the preferred means of controlling potential fall hazards.

When these protective measures are not feasible, fall arrest or other fall protection systems shall be utilized. Supervision and ES&H will provide continued evaluation and oversight of elevated work activities to ensure controls are properly implemented.

3.3.4 Fall Protection Risk Assessment

NOTE 1: *See* **Section 6.5, Exiting Aerial/Scissor Lifts at Elevation***, for additional details on the process.*

NOTE 2: *See* **Section 3.6.4, Working From Cable Trays***, for additional details on the process.*

Where work tasks must be completed outside of primary fall prevention and/or protection systems (e.g., standing on structural steel, working on top of equipment, or exiting MEWP at elevation), or where conventional fall protection equipment/systems are not feasible or create a greater hazard, or additional specialty fall protection is required (e.g., tie-off below the waist, horizontal lifelines) then the Superintendent responsible for the work must evaluate the activity using CFN-1323, *Elevated Work Risk Assessment Permit.*

The risk assessment includes the following information:

- Description of the planned task including detail related to the process that will be used, tools and materials necessary to complete the task, and duration of the task
- Description of the work location and walking-working surface that will be used to execute the task
- Description of how access will be provided to the work location
- Identification of the anchor points and fall protection connectors and required anchorage adapters
- Identification of rescue steps to be performed in the event of an emergency

The completed and approved risk assessment must be posted with the FLHA Card for the task. Following completion of the task, the elevated work risk assessment permit must be returned to ES&H with the applicable FLHA Card for record retention purposes.

NOTE 3: *Scaffold assembly and disassembly does not require the completion of CFN-1323 when fall protection is achieved in accordance with the scaffold manufacturer requirements.*

3.4 Primary Fall Prevention Systems

Primary fall prevention systems provide walking and working surfaces in elevated areas through the use of standard handrails, guardrails, hole covers, and/or other appropriate physical barriers.

3.4.1 Guardrail Systems

Guardrail systems for fall prevention/protection shall be in accordance with the requirements of UPF-CP-214, *Barricades and Signs*.

3.4.2 Floor and Wall Opening/Hole Covers

Floor and wall opening/hole covers are used to close openings and holes in floors, platforms, and walkways. These covers must meet the requirements of **Section 4.0, *Floor and Wall Openings***.

3.5 Secondary Fall Protection Systems

These systems must be worn and used in the absence of primary fall prevention systems. When secondary fall protection systems are utilized, 100% tie-off to an appropriate anchorage point (including travel/transitioning) is required when personnel are exposed to the potential fall hazard.

Secondary fall protection systems include, but are not limited to:

- Anchorage points
- Anchorage connectors/adapters
- Safety harness/lanyard system
- Horizontal life lines
- Self-retracting life lines
- Fall restraint

3.5.1 Anchorage Points

Anchorages utilized in fall arrest systems must be independent from all other uses and capable of supporting 5,000 lbs. per person attached; or it must be designed, installed, and used under the supervision of a Fall Protection Qualified Person as part of a complete PFAS that maintains a safety factor of at least two.

3.5.2 Anchorage Adapters/Connectors

Anchorage adapters provide the capability to connect a full-body harness and lanyard system to an anchorage point when connector compatibility is not achievable directly to the anchorage point with the lanyard system.

Anchorage adapters must be capable of supporting 5,000 lbs. per person attached; or designed, installed, and used under the supervision of a Fall Protection Qualified Person as part of a complete PFAS that maintains a safety factor of at least two.

Anchorage adapters shall be manufactured and designed for the intended purpose, and must be used in accordance with manufacturer’s instructions.

3.5.3 Personal Fall Arrest Systems

Fall protection in the form of full-body harnesses and lanyards must be used in situations where it is impracticable to provide primary fall prevention systems.

NOTE: *Only company/contractor-furnished harnesses and lanyard systems are allowed on site.*

3.5.4 Harnesses

When using harnesses:

- Only full-body harnesses shall be utilized in fall arrest systems; body/waist belts are prohibited
- Full body safety harnesses must be secured via UPF/Subcontractor-supplied lanyard to a secure anchorage point
- The dorsal (back) D-ring of the harness shall be utilized in fall arrest and restraint systems
- Full-body harnesses must be properly fit to the user and the rated capacity shall not be exceeded
- Field modifications to any part of a full-body harness is prohibited

3.5.5 Lanyards

Fall arrest lanyards must be provided with the harness system in order to reduce the shock loading in the event of a fall. The lanyard and anchorage point should limit the maximum free fall to 6 feet or less.

Requirements for using fall arrest lanyards include:

- Tie-off to an anchor point should occur at waist height or above
- User-rated capacities of fall arrest lanyards shall not be exceeded
- Only one lanyard connector can be attached to the dorsal (back) D-ring of the full-body harness at a time
- The attachment of multiple lanyard connectors to a D-ring is prohibited, as it presents a potential for connectors to interact in the event of a fall, which could cause a failure or detachment of the connector from the D-ring
- Connectors (i.e., snap hook, pelican hook, carabineer) utilized in fall arrest systems shall be double action, at a minimum
- Fixed-length, 6-foot, shock-absorbing lanyards shall not be utilized when total fall distance (measured from the anchor point) is less than 18.5 feet
- Only safety harness/lanyard systems furnished by the UPF (or subcontractor employer) are to be used

Positioning Lanyards

Requirements for using positioning lanyards include:

- Positioning lanyards are to be utilized for work positioning only and are not designed for fall arrest capabilities

- Positioning lanyards shall be attached to an anchorage point capable of supporting 3,000 lbs., at a minimum
- Positioning lanyards are to be attached to D-rings at the harness belt location for work positioning purposes

3.5.6 Horizontal Life Lines

Lifeline systems provide a continuous point of attachment for fall protection lanyards and must be capable of supporting at least 5,000 lbs. per employee.

The following guidelines apply to horizontal life lines:

- Horizontal life lines should be pre-engineered (manufactured), not built or engineered on the Project site
- Application, installation, and maintenance of horizontal lifeline systems must be in accordance with the manufacturer's requirements or the direction of a Fall Protection Competent Person by personnel familiar with these systems
- Horizontal life lines shall be secured above the point of operation to an anchorage or structural member meeting the requirements of the system manufacturer
- Tags or signs indicating the maximum number of persons allowed to be attached to a lifeline shall be affixed to each lifeline. A weekly inspection shall be documented on the tag, indicating it is safe for use, by personnel trained in the installation of these systems
- Horizontal life lines will not be used for any purpose other than providing fall protection (e.g., not as a handrail)

3.5.7 Self-Retracting Life Lines

When using self-retracting life lines, the following guidelines apply:

- Self-retracting life lines shall be secured to an approved anchorage point by means of an anchorage connector in accordance with the manufacturer's recommendations
- Self-retracting lifelines shall be installed in a manner that prevents potential swing fall hazards. Personnel shall not work outside of the 15-degree work radius (below the anchor point) unless the activity is evaluated by a Fall Protection Competent Person and the equipment is designed for the application
- A D-ring extender lanyard (up to 18 inches) can be utilized in conjunction with a self-retracting lifeline. Use of D-ring extenders with shock-absorbing lanyards is prohibited, as it creates a free fall distance of greater than 6 feet
- Do not attach a standard shock absorbing lanyard to a Self-Retracting Lifeline (SRL)
- Users shall conduct a daily pre-use inspection, including physical check for retraction and braking functionality

NOTE: *When self-retracting lifelines are anchored at an elevation that cannot be reached from the working level, a rope tag line will be used to allow the lifeline to extend to the work level and attach to the user's harness; the rope tag line will also be used to allow the lifeline to retract when not in use.*

3.5.8 Fall Restraint

Fall restraint utilizes a full-body harness, lanyard, and anchorage point, but in a manner that attachment to the anchorage point prevents an individual from accessing the fall hazard.

Fall restraint systems shall be installed to allow movement of personnel up to the unprotected side or edge, but must not allow personnel to go over the unprotected side or edge, exposing them to a potential free fall.

Anchor points for fall restraint systems must be capable of supporting at least 1,000 lbs. per person attached or twice the maximum expected force needed to restrain the person from exposure to the fall hazard. In determining this force, consideration should be given to site-specific factors, such as the force generated by a person walking, leaning, or sliding down the work surface.

3.6 Specific Work Requirements

The following sections provide specific requirements for providing fall protection during unique elevated work activities.

3.6.1 Working from Ladders

When working from ladders:

- Personnel working at 6 feet or greater in height shall wear and utilize an approved PFAS
- Personnel utilizing ladders within 6 feet of guardrail systems must evaluate the work for the implementation of PFAS or modifications to the existing guardrail system (e.g., installing a third guardrail level)
- All access ladders (e.g., portable, permanent, scaffold) with a deck height of 14 feet or greater shall be equipped with an SRL or approved ladder-climbing device

3.6.2 Scaffold Systems

Personnel erecting or dismantling scaffold systems and personnel performing work from Yellow Tag scaffolds shall maintain 100% fall protection. The use of scaffold systems as anchor points shall be in accordance with manufacturer's requirements for the scaffold system. Additional evaluation of scaffold anchor points shall be performed by the Fall Protection Qualified Person in conjunction with the scaffold qualified person, as required.

3.6.3 Structural Steel Erection

Personnel erecting structural steel shall maintain 100% fall protection through the use of safety harness/lanyards, horizontal lifelines, connectors, anchorage adapters, and aerial lifts.

The following guidelines apply to structural steel erection:

- The use of ladders and aerial lifts shall be maximized as the safe method of vertical travel in structural steel elevations
- Climbing of columns and diagonal structural steel members is prohibited

- Personnel traveling horizontally across structural steel shall utilize a horizontal lifeline system. In the absence of a horizontal lifeline system, personnel must avoid walking on the top flange of beams and should straddle the beam, walking on the lower flange of the beam
- Where anchorage points for fall arrest harness/lanyard system attachment are located below waist height or at foot-level, shock-absorbing lanyards or self-retracting lifelines rated for additional free fall shall be utilized and requirements documented on a CFN-1323
- Only authorized personnel (e.g., structural ironworkers with 29 Code of Federal Regulations [CFR] 1926.750, Subpart R, *Steel Erection*, training) may work on floors/platforms/catwalks that are incomplete and only to perform the necessary activities to install primary fall prevention systems (e.g., guardrail, grating, floor decking). These personnel shall be protected with an appropriate PFAS

3.6.4 Working from Cable Trays

Working from cable trays is only permitted for 5-inch-deep cable trays that are adequately supported as determined by the PFE or designee. Personnel working from temporary platforms connected to cable trays shall maintain 100% fall protection through the use of safety harness/lanyards, connectors, and anchor points.

The following are additional requirements that must be satisfied prior to accessing cable trays:

1) Installation of cable tray and the necessary support system is complete and the live load imposed by the worker accessing the cable tray is no more than 200 lbs.
2) ¾-inch-thick plywood, or equivalent, has been installed and secured to the cable tray (e.g., use removable clamps/hardware in accordance with OSHA 1926.502[i][3])
3) Identification of energized cables in the tray and issuance of ERAT per Y17-95-64-880, *UPF Electrical Safety in the Workplace*, if applicable.

Completion of form CFN-1323, *Elevated Work Risk Assessment Permit*, is required for proper authorization to allow using a cable tray as a working platform or as a bridge to step across from one side of the tray to the other and is subject to loading and platform fastening restrictions specified by Engineering as identified on the form.

3.6.5 Reinforcement Steel/Concrete Work

The following guidelines are adhered to when performing reinforcement steel/concrete work:

- Loading capacities of rebar walls, concrete form walls, and piers shall be identified during design and constructed in a manner that provides suitable capacity for worker access and fall arrest anchorage
- Fall protection may be achieved through the use of self-retracting lifelines or use of double lanyards to maintain 100% fall protection
- Personnel working rebar, form walls, and elevated piers may require a work positioning device in addition to a fall protection lanyard
- On rebar walls, personnel shall secure their lanyard to an approved rebar anchor point designed by a Fall Protection Qualified Person at a point above the worker’s

head. These persons shall receive specific instruction on the equipment to be used and the practices to be implemented

- On form walls, personnel shall use patented construction form tie-off attachments or lifelines to secure their safety lanyards. These persons shall receive specific instruction on the equipment to be used and the practices to be implemented

3.6.6 Leading Edges

Leading edge means the edge of a floor, roof, or formwork for a floor or other walking/working surface that changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed.

Each person who is constructing a leading edge shall be protected from fall by a combination of guardrail systems and/or PFAS, as appropriate. Fall arrest systems utilized in leading edge activities shall be manufactured and designed to withstand leading edge fall hazards (e.g., edge impact, cut, abrasion) and maintain adequate fall clearance.

3.6.7 Aerial/Scissor Lifts

Personnel riding in, or working from, aerial and scissor lifts must wear an approved safety harness/lanyard system with the lanyard secured to the platform anchorage point at all times. Recommended lanyard devices include personal fall limiters/self-retracting lifelines (e.g., Miller TurboLite™) or a 4-foot fixed or shock-absorbing lanyard used in a restraint fashion.

3.6.8 Rigging and Crane Assembly/Disassembly

Personnel performing rigging and crane assembly/disassembly activities shall be provided with appropriate fall protection systems. Anchorage adapters/connectors must be connected to suitable anchor points (e.g., chords and lacings) capable of supporting at least 5,000 lbs. per employee attached.

Due to fall clearance, aerial/scissor lifts and ladders will be the preferred method of access during these operations.

3.6.9 Loading/Off-Loading Trailers

Personnel performing loading and off-loading activities from trailer decks shall:

- Confirm loads are stable and will not shift during handling operations
- Inspect trailer decks for holes or damage that may cause trips or falls
- Not stand between hoisted loads and material or fixed objects on the trailer
- Use taglines to control loads
- Use ladders, attached or secured to the trailer, for access. The ladder and/or grab rails must extend 36 inches above the trailer deck
- Be provided with an adequate PFAS if a fall exposure of 6 feet or greater exists

3.7 Inspection

A designated competent person will perform quarterly inspections of fall protection equipment and visually mark the equipment in accordance with ML-SH-801768-A001,

UPF Quarterly Inspection Color Codes. Quarterly inspections are to be documented using a Project-approved method (e.g., ToolHound™ electronic database or UCN-23239, *Fall Protection Equipment Inspections*).

Fall protection equipment that does not have the current quarterly color code marking, or that is damaged or defective, shall be tagged out of service at the point of discovery using a "Do Not Use" tag and returned to the Rigging Loft for inspection. Designated inspectors will determine proper disposition of any damaged or defective items. Operable equipment that does not have a current color code marking will be inspected, color coded, and returned to the Tool Crib for use.

3.8 Rescue Planning and Response

For elevated work activities involving personal fall protection equipment, accessibility and availability of rescue must be assessed for the work activity and location.

For the main UPF Construction Areas (on the Y-12 National Security Complex [Y-12] footprint), rescue response will be provided by the Y-12 Fire Department by personnel trained and qualified in high-angle rescue. For off-site locations, coordination with local emergency response services should be made based on the scope of work and hazards present. Rescue requirements should be addressed during the planning phase and coordinated through BNI ES&H.

For work activities where self-rescue involving the use of heavy equipment (e.g., aerial lift, crane) is feasible, the equipment used to perform the self-rescue must be staged in close proximity and be accessible to the work activity.

4.0 FLOOR AND WALL OPENINGS

4.1 Purpose

This section provides the requirements for protecting personnel from floor holes, floor openings, and wall openings.

4.2 General Requirements

General requirements for floor and wall opening/holes include:

- All covers shall be constructed of substantial material appropriate for the environment (e.g., ¾ inch exterior grade plywood, steel plate, grating)
- All covers shall be capable of supporting, without failure, at least twice the weight of personnel, equipment, and materials that may be imposed on the cover at any one time
- All covers shall be secured (e.g., screws, nails, bolts, 9 wire) to prevent accidental displacement by the wind, equipment, or personnel
- Floor hole/opening covers are required to be marked with a sign stating: "DANGER – Floor Hole/Opening – Do Not Remove Cover"

NOTE: *This provision (signage) does not apply to permanent covers (e.g., cast iron manhole covers or steel grates) or other cover types as determined by the BNI ES&H Manager.*

- Pipe penetrations, etc., that extend above the walking/working surface can be covered using boxes constructed to meet the requirements of this Manual
- Covers of all types should extend a minimum of 4 inches over the edge of the opening/hole being covered, unless otherwise designed and constructed to be inset or secured
- Materials or equipment shall not be stored or staged on covers
- Work platforms (e.g., scaffolds) shall not be built on covers unless they have been evaluated and designed to support the intended load
- In facilities under construction, covers shall be protected/identified with a curb or other substantial barrier from damage by equipment (e.g., mobile elevating work platforms, forklifts) unless designed and capable of supporting such equipment

4.2.1 Temporary Flooring

When a floor opening exceeds 40 inches at its narrowest dimension, the opening will require temporary flooring that must be evaluated by Field Engineering for proper construction and support.

Temporary flooring must be constructed with a rated load capacity that will accommodate the weight and impacting force of personnel, tools, materials, and equipment. Standard-rated load capacity is identified as:

- Light Duty: 25 lbs./sq. ft.
- Medium Duty: 50 lbs./sq. ft.
- Heavy Duty: 75 lbs./sq. ft.

The rated load capacity of temporary flooring must be marked/posted in a conspicuous location.

4.2.2 Wall Openings

Covers for wall openings will be substantially braced and secured to withstand a minimum 200-lb. force without failure from any direction.

4.3 Walking/Working Surface Modification

Activities performed by personnel creating a floor hole or modifying existing walking/working surfaces (deemed safe for use via primary fall prevention measures) shall be controlled through a UCN-23432, *Walking/Working Surface Modification Permit*.

Activities covered by this process include:

- Removal of permanent and temporary floor/hole covers that protect an opening 12 inches or more in any walking/working surface that could create a fall hazard of 6 feet or greater
- Removal of permanent or temporary wall opening covers that protect an opening 30 inches high and at least 18 inches wide that could create a fall hazard of 6 feet or greater
- Removal of a guardrail on permanent or temporary structures approved for personnel access

- Removal of grating, steel plate, or other decking material on a walking/working surface approved for personnel access

NOTE: *Scaffold systems are excluded from this process.*

4.3.1 Permit Process

The responsible Supervisor, discipline Superintendent, and ES&H Representative must review the actual work location to complete the UCN-23432. If the permanent grating/floor plate/handrail and its supporting structure must be removed or modified, a discipline (e.g., Civil) Field Engineer must also participate in the permit process.

The requirements of the permit include:

1. Only those Crafts who are specifically trained to perform such work (e.g., structural steel ironworkers, carpenters) will be allowed to remove/replace the cover/grating/floor plate/handrail
2. A standard guardrail system shall be installed around any potential opening that presents a fall hazard. All access points to the area shall be equipped with a swing gate or equivalent and properly marked, “(Danger – Fall Protection Required beyond This Point)”
3. Fall protection must be provided and used by those working inside the barricaded area
4. Walking/working surfaces below the work area shall be evaluated for dropped objects or other hazards to personnel below. As necessary, the area(s) below the work area shall be barricaded to prevent access, protecting personnel from exposure to dropped objects
5. Illumination needs shall be evaluated prior to the start of work and additional lighting shall be provided, where required. The remaining grating/floor plate/handrail bordering the removed grate(s)/floor plates(s) sections must be protected from movement or slippage by securing with wire, clips or other means capable of preventing displacement
6. Removed material must be set in an area so as not to create a tripping hazard or interfere with other work activities. Stacks or bundles of removed material must be organized and stored in accordance with floor-loading limits
7. When reinstalling covers/grating/floor plate/handrail, the Supervisor shall verify all material has been completely re-installed, correctly positioned, and properly fastened/secured
8. When all items have been reinstalled and properly secured, the area shall be inspected by the Supervisor and authorized BNI ES&H Representative for completeness, the barricade can be removed, and the area released for general use

4.3.2 Cover Modification

If covers must be altered or cut to accept piping, conduit, etc., the personnel performing the work must contact the responsible Supervisor and area Carpenter Supervisor for authorization prior to making any modifications.

5.0 DROPPED OBJECT PREVENTION

UPF-CP-203, *Dropped Object Prevention,* establishes expectations for preventing dropped objects by controlling tools, materials, and equipment brought to or used at height. Such objects, if dropped, can present significant risk of injury to those below, property damage, and environmental impacts.

Examples of potential dropped objects include:

- Scaffolding materials
- Hand and power tools
- Cell phones
- Nails and screws
- Nuts, bolts, and washers
- Cameras
- Hard hats
- Water bottles and kegs
- Items lifted by cranes or hoists
- Plywood
- Flange covers
- Trash and debris
- Alignment pins
- Clips
- Grating
- Wedges
- Jack stands
- Welding rods
- Hoses, cords, and cables

Reference UPF-CP-203 for all dropped object prevention requirements.

6.0 AERIAL/SCISSOR LIFT OPERATIONS

6.1 Purpose

This section provides the requirements for the use of aerial and scissor lifts.

6.2 General Requirements

All aerial and scissor lift devices must meet the following general requirements:

- The operator/safety manual(s) are to be maintained with the equipment, provided they can be protected from the elements. If this cannot be accomplished, a hard copy may be stored in a central location as determined by the Project Distributable Superintendent
- All controls must be plainly marked as to their function

- All capacity and warning decals will be in place, secure, and legible, at both the platform/basket and ground stations
- All aerial/scissor lifts must be equipped with an ABC-rated fire extinguisher in the platform/basket. The fire extinguisher shall be secured in a manner as to prevent displacement of the extinguisher. Scissor lifts must be equipped with a fire extinguisher 2.5 lbs. or greater. Aerial (boom) lifts must be equipped with a fire extinguisher 10 lbs. or greater
- Boom-type aerial lifts must be equipped with anti-entrapment devices
- Aerial/scissor lifts are to be inspected daily before use or at crew/shift change and documented on a UCN-23248, *Aerial/Scissor Lift Daily Checklist*

6.3 Operation Requirements

Only trained and qualified personnel shall operate aerial or scissor lift devices in accordance with the following:

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

6.3.1 Spotter Use

The operator and/or supervisor should review the following to determine when a spotter is required:

- Blind spots exist in the area that can hinder the operator’s field of vision
- Obstructions exist in the path of travel (e.g., other equipment, elevation changes)
- Obstruction exists when raising or lowering the lift
- Other adverse conditions (e.g., abrupt edges, holes, tight spots, soft surfaces)

When it is determined a spotter is required, the spotter(s) maintain(s) visual and/or verbal contact with the operator while the equipment is moving. If contact is lost between the spotter(s) and the operator, the operator should stop the equipment and only resume after contact is reestablished. See UPF-CP-227, *UPF Safety Watches*, for additional information.

6.3.2 Aerial Lift Parking

All authorized personnel shall adhere to the following manufacturer parking recommendations when feasible:

- Select a safe parking location—firm level surface, clear of obstruction and traffic
- Retract and lower the boom to the stowed position
- Rotate the turntable so that the boom is between the non-steer wheels
- Turn the key switch to the off position and remove the key to secure from unauthorized use

6.4 Electrical Hazards

Aerial/scissor lifts shall be operated with a minimum safe approach distance near overhead exposed and energized power lines/sources in accordance with UPF-MANUAL-CM-001, *Uranium Processing Facility Construction Electrical Safety Manual*.

- Power lines/sources up to 25 kV, maintain 30-foot clearance
- Power lines/sources over 25 kV, maintain 50-foot clearance

6.5 Exiting Aerial/Scissor Lifts at Elevation

Aerial/scissor lifts may be used to access elevated work areas or structures by exiting or entering the lift platform under the following requirements:

- There is no other established safe access to the work area (e.g., stairs)
- The job must be evaluated to ensure the use of an aerial lift is the safest means to access the elevated area or structure
- The Responsible Supervisor for the work and an ES&H Representative must approve the activity and document the approval on CFN-1323
- Personnel must use the lift manufacturer’s access point (e.g., gate, slide bar) when entering or exiting the lift
- Personnel must ensure 100% tie-off is maintained throughout the transition from the lift to the elevated area or structure, from the elevated area or structure to the lift, and while performing work on the elevated area or structure

6.6 Wind Conditions

Follow the manufacturer’s recommendations for use under high wind conditions and/or direction from the Y-12 Operations Center, whichever is more restrictive.

7.0 LADDERS

7.1 Purpose

This section provides the requirements for the use of ladders.

7.2 General Requirements

All portable ladders purchased or used on the Project shall meet minimum specifications, including:

- Ladders must be vendor-certified as American National Standards Institute (ANSI) Type 1A or greater
- Only nonmetallic ladders will be purchased and used on the site (fiberglass ladders are recommended)
- Tripod ladders (ladders with three legs) are prohibited
- Straight ladders longer than 20 feet are prohibited
- Extension ladders longer than 36 feet are prohibited
- Stepladders and platform ladders longer than 12 feet are prohibited
- All portable ladders will be equipped with nonskid feet

7.3 Ladder Use

Inspect ladders prior to use to verify:

- All hardware and fittings are securely attached and the movable parts operate freely without binding or undue play
- Ladder rungs are free from grease, oil, mud, and other materials
- Ladder safety feet and other auxiliary equipment are in good condition
- Ladder does not have any broken or missing steps, rungs, cleats, broken side rails, or any other faulty equipment

When using a ladder:

- Do not use ladders in any manner other than their intended purpose
- Two or more people will not work from the same ladder unless it is specifically designed for two people
- Place portable ladders on a level and stable surface and secure them or have them held by another person to prevent slipping
- Personnel shall face the ladder when ascending or descending and use both hands to grasp the ladder
- Do not carry materials or tools in hands while ascending or descending ladders
- If working from portable ladders, then remain within the confines (side rails) of the ladder
- Prevent unauthorized entry in the area below the ladder with barricades or flagging when overhead hazards are present during ladder use
- Do not stand on the platform or top step of a stepladder (i.e., top two steps)
- Do not sit on or straddle a stepladder to perform work

- When accessing another elevation, extend the top of the ladder 36 inches beyond the upper landing surface. If this is not possible because of the ladder's configuration, install a grab rail(s) 36 inches above the landing to help personnel mount and dismount the ladder

7.4 Job-Made Ladders

In instances where manufactured ladders are infeasible, wooden job-made ladders can be constructed and used. Job-made ladders must comply with the requirements of 29 CFR 1926, Subpart X, *Stairways and Ladders*.

7.5 Ladder Inspection

A designated person(s), assigned by Construction Management, will perform quarterly inspections of portable ladders equipment and visually mark the equipment in accordance with ML-SH-801768-A001. Quarterly inspections are to be documented using a Project-approved means (e.g., ToolHound electronic database or UCN-23238, *Ladder Inspections*).

Ladders that do not have the current quarterly color code marking shall be tagged out of service at the point of discovery using a “Do Not Use” tag until inspected and color coded. Personnel may request a designated inspector to inspect the ladder at the location where it is identified. After the ladder has been inspected and color coded, the “Do Not Use” tag may be removed by the person who installed the tag. Uninspected ladders may also be returned to the Tool Crib for inspection and color coding if a designated inspector is not available for a field inspection.

Ladders that are damaged or defective shall be immediately tagged out of service at the point of discovery using a “Do Not Use” tag and returned to the Tool Crib. Designated inspectors will determine proper disposition of any damaged or defective ladders.

7.6 Ladder Storage

When not in use, store portable ladders to protect them from the elements and direct sunlight; store ladders away from excessive heat and in areas with good ventilation.

Storage racks should be constructed so long ladders are supported every 6 feet to prevent sagging and damage during storage.

Other materials are not to be stored on ladders.

8.0 SCAFFOLD

Requirements for the use and control of scaffold is outlined in Y17-95-64-831, *UPF Scaffold Control and Management.*

9.0 ROOFING WORK

9.1 Purpose

This section provides the requirements for working on completed roof structures.

9.2 General Requirements

Prior to performing any work, including preliminary inspection, the structural integrity of the roof will must be evaluated by a certified/professional structural engineer.

- Inclement weather must be closely monitored by the responsible supervisor, implementing controls found in UPF-POLICY-CM-002, *UPF Weather Protocols*
- Roof access and work is generally prohibited at night unless appropriate and adequate illumination is provided
- Personnel engaged in roofing work will be protected from fall hazards through primary fall prevention systems (e.g., guardrails, floor hole covers) and/or an approved secondary fall protection system (e.g., PFAS and horizontal lifeline). Because of the nature of roofing work, a CFN-1323 may be required to establish appropriate secondary fall protection systems. For work performed on a completed roof structure, a warning line system can be utilized in conjunction with other primary or secondary systems
- Personnel engaged in roofing work shall take measures to prevent dropped objects using primary controls referenced in **Section 5.0**, ***Dropped Object Prevention***

9.3 Material/Equipment Storage

In accordance with Y17-95-64-847, *UPF Field Material Control and Traceability*, storage of material/equipment will:

- Minimize total material to be stored on roofs. Storage locations need to be evaluated for structural integrity
- Be secured at the end of each shift. Waste and scrap material must be secured and/or removed at each shift
- Not be stored within 6 feet of the roof edge unless guardrails are erected with debris netting or equivalent

Fuel-powered (e.g., gas or diesel) work equipment must be stored on an approved spill pan or drip tray.

Only sufficient fuel for the day's work is allowed to be stored on the roof structure.

9.4 Warning Line System

When establishing and using a warning line system, comply with the following provisions:

- Erect the warning line no closer than 6 feet measured perpendicularly from the roof's edge
- When erecting a warning line, complete the following:
  - Use warning lines made of rope (cannot be red, yellow, or combined yellow and magenta in color), wire, or chain
  - Affix highly visible flagging at no less than 6-foot intervals along the warning line system, and affix intermittent warning signs from all approach directions along the warning line system
  - Use stanchions to support the warning line

  - The warning line is supported so its lowest point (including sag) is no less than 34 inches from the walking/working surface and the highest point is no more than 39 inches from the walking/working surface
- With the warning line (rope, wire, or chain) attached, the stanchions are to resist (without tipping over) a force of at least 16 lbs. applied horizontally against the stanchion, 30 inches above the walking/working surface, perpendicular to the warning line, and in the direction of the roof edge
- The warning line rope, wire, or chain is to have a minimum tensile strength of 500 lbs., and (when attached to the stanchions) is to be capable of supporting, without breaking the loads applied to the stanchions as prescribed in the previous bullet
- Personnel outside (beyond) the warning line system are required to utilize PFAS

10.0 SUSPENDED PERSONNEL PLATFORMS

10.1 Purpose

This section provides the requirements for the use of SPPs. Personnel lifts are considered critical lifts. All Personnel lifts shall be conducted in accordance with 29 CFR 1926.1431, *Hoisting Personnel*, and American Society of Mechanical Engineers (ASME) B30.23, *Personnel Lifting Systems*.

10.2 Responsibilities

10.2.1 Rigging Engineer

The Rigging Engineer is responsible for reviewing and approving critical lift plans in accordance with Y17-95-64-871, *UPF Construction Hoisting and Rigging Work Operations*, prior to the start of work.

10.2.2 Person-In-Charge

The Person-In-Charge (PIC) is responsible for:

- Assessing operations to provide planning, selection of equipment, instruction, and supervision as necessary for safe execution of the task
- Ensuring adequate inspection and maintenance of equipment have been carried out in accordance with this Manual
- Supervising the performance of the rigging work operations for SPP lifts and exercising the authority to stop any lift operation in the event a potential danger is likely to arise if the operation were to continue

10.3 Risk Evaluation

Hoisting personnel is prohibited except when the use of conventional means of reaching the work site (e.g., personal hoist, ladder, stairway, mobile elevated work platform, or scaffold) would be more hazardous or would not be possible because of structural design or work site conditions. If it is determined by the Site Manager, with concurrence from the BNI ES&H Manager and PFE, a SPP will be used over other conventional means, then the requestor shall:

- Conduct a risk evaluation before a lifting plan is prepared using UCN-23252, *Suspended Personnel Platform Risk Evaluation*, to document the results of the evaluation
- Obtain signed approval on the evaluation from the Site Manager, BNI ES&H Manager, and PFE prior to proceeding with any use of a SPP
- Post the completed form to the critical lift plan and associated work package

10.4 Rigging Plan Preparation

Once the SPP Risk Evaluation has been performed and approved, the Rigging Engineer develops a critical lift plan that includes the use of the personnel platform, the crane, and capacity calculations using the weight of the rigging, platform, and estimated platform working load.

10.5 Pre-Work Lifts and Inspections

Prior to lifting personnel, the following lifts and inspections shall be performed:

- Proof Test Lift – prior to a work sequence where one or more lifts of an occupied personnel platform are planned in order to accomplish a work task or after any repair or modification to platform or rigging components
- Trial Lift – at the beginning of each shift in which personnel will be hoisted
- Occupied Test Lift – prior to each lift with personnel and material/tools on board to verify the securing and balance of the platform

10.5.1 Suspended Platform Capacity Proof Test

The platform and rigging must be proof tested to 125% of the platform's rated capacity.

NOTE: *The proof test may be performed concurrently with the trial lift.*

- With the test load evenly distributed on the platform, lower the platform by controlled load lowering, then brake and hold in a suspended position for a minimum of five minutes
- After proof testing, the PIC must inspect the platform and rigging to determine if the test has been passed
- Document the results of the Proof Test in Section 4 of UCN-23253, *Suspended Personnel Platform Safety Checklist*
- Personnel hoisting must not be conducted until the PIC determines the platform and rigging have successfully passed the proof test

10.5.2 Trial Lift

At the beginning of each shift, a trial lift with the unoccupied personnel platform loaded at least to the anticipated lift-weight must be made from ground level (or any other location where personnel will enter the platform) to each location at which the platform will be hoisted and positioned.

Where there is more than one location to be reached from a single set-up position, perform either of the following:

- Individual trial lifts for each location
- A single trial lift, in which the platform is moved sequentially to each location

NOTE: *Select the same method as the one used to hoist the personnel.*

- Perform a trial lift immediately prior to each shift in which personnel will be hoisted. In addition, the trial lift must be repeated prior to hoisting personnel in each of the following circumstances:
  - The equipment is moved and set up in a new location or returned to a previously used location
  - The lift route is changed, unless the PIC determines the new route presents no new factors affecting safety
- The PIC must determine that:
  - Required safety devices and operational aids are activated and functioning properly
  - Nothing interferes with the equipment or the personnel platform in the course of the trial lift
  - The lift does not exceed 50% of the equipment's rated capacity at any time during the lift
  - The load radius to be used during the lift has been accurately determined
- Immediately after the trial lift, the PIC must:
  - Conduct a visual inspection of the equipment, base support or ground, and personnel platform to determine whether the trial lift has exposed any defect or problem or produced any adverse effect
  - Confirm that upon the completion of the trial lift process, the test weight has been removed
  - Document the results of Trial Lift and the results of Post-Trial Inspection in Section 4 of UCN-23253

10.5.3 Occupied Test Check

The following are requirements when completing an occupied test check immediately prior to each lift:

- Hoist the platform a few inches with the personnel and materials/tools on board and inspect by the PIC to ensure it is secure and properly balanced
- The following conditions must be determined by the PIC to exist before the lift of personnel proceeds:
  - Hoist ropes are free of deficiencies
  - Multiple part lines are not twisted around each other
  - The primary attachment is centered over the platform
  - If the load rope is slack, then inspect the hoisting system to ensure all ropes are properly seated on drums and in sheaves
  - If any deficiencies are found with the equipment that poses a safety hazard, then stop the lift, tag the equipment with a "Danger - Defective Tool/Equipment - Do Not Use" tag, and report the situation to supervision

- Document the results of the Occupied Test Lift Inspection on Section 5 of UCN-23253

10.6 Platform Criteria

A personnel platform (man basket) shall be designed and configured as follows:

- The personnel platform and attachment/suspension system used for hoisting personnel has been designed by a qualified structural engineer
- The system used to connect the personnel platform to the equipment allows the platform to remain within 10 degrees of level, regardless of boom angle
- The suspension system is designed to minimize tipping of the platform because of movement of personnel occupying the platform
- The personnel platform itself (excluding the guardrail system and PFAS anchorages) has the capability of supporting, without failure, its own weight and at least five times the maximum intended load
- All welding on a personnel platform and its components is performed by a certified welder familiar with the weld grades, types, and material specified in the platform design
- Personnel platforms shall be equipped with a standard guardrail system and provide enclosure at least from the toe-board to mid-rail
- Personnel platform fall arrest system anchorage points must be designed/engineered for that use
- A grab rail is installed inside the entire perimeter of the personnel platform except for access gates/doors
- If installed, access gates/doors of all types (including swinging, sliding, folding, or other types) shall:
  - Not swing outward. If they do because of the size of the personnel platform (e.g., a one-person platform) is infeasible for the door to swing inward and allow safe entry for the platform occupant, then the access gate/door may swing outward
  - Be equipped with a device that prevents accidental opening
- Headroom is sufficient to allow personnel to stand upright in the platform
- In addition to the use of hard hats, provide overhead protection on the personnel platform when personnel are exposed to falling objects. Such platform overhead protection cannot obscure the view of the operator or platform occupants (such as wire mesh that has up to ½-inch openings) unless full protection is necessary
- All platform edges are smooth enough to prevent injury
- A plate or other permanent marking listing the weight of the platform and its rated capacity is conspicuously posted on the platform

10.7 Safety Devices

Safety devices include:

- Equipment (except for derricks and articulating cranes) with a variable angle boom must be equipped with all of the following:

  - A boom angle indicator that is readily visible to the operator
  - A boom hoist-limiting device
- Articulating cranes must be equipped with a properly functioning automatic overload protection device
- Equipment with a luffing jib must be equipped with:
  - A jib angle indicator that is readily visible to the operator
  - A jib hoist-limiting device
- Equipment with telescoping booms must be equipped with a device that indicates the boom's extended length clearly to the operator or have measuring marks on the boom
- Anti-Two-Block – A device that automatically prevents damage and load failure from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component) shall be used. The device(s) must prevent such damage/failure at all points where two-blocking could occur
- Controlled Load Lowering – The load line hoist drum must have a system, other than the load line hoist brake, which regulates the lowering rate of speed of the hoist mechanism. This system is required when lifting personnel. Two requirements with regard to free fall of the load are as follows:
  - Free fall of the load line hoist is prohibited
  - The use of equipment in which the boom hoist mechanism can free fall is also prohibited

Personnel hoisting operations must not begin unless the devices listed above are in proper working order. If a device stops working properly during such operations, then the operator must safely stop operations. Personnel hoisting operations must not resume until the devices are again working properly. Alternative measures are not permitted.

10.8 General Work Practices

Hoisting of the personnel platform must be performed in a slow, controlled, and cautious manner with no sudden movements of the equipment or the platform. Platform occupants must:

- Keep all parts of the body inside the platform during raising, lowering, and horizontal movement. This provision does not apply to an occupant of the platform when it is necessary to position the platform or while performing the duties of a signal person
- Not adjust working height by standing or sitting on the top/mid rails or use any other means/devices to raise their working height
- Not pull the platform out of plumb in relation to the hoisting equipment
- Take appropriate measures to prevent dropped objects (e.g., tool lanyards)
- Not load the platform in excess of its rated capacity. The platform is only to be used for personnel, their tools, and the materials needed for their work
- Must remain in direct communication with the signal person (where used) or the operator when being hoisted

- Secure the platform to the structure where the work is to be performed, before exiting or entering a hoisted personnel platform that is not landed, unless it can be demonstrated that securing to the structure would create a greater hazard
- Not move the platform when it is tied to the structure until the operator receives confirmation that it is freely suspended
- Use tag lines when necessary to control the platform
- Must remain at the equipment controls, on-site, and in view of the equipment at all times while the platform is occupied

Environmental Conditions

When wind speeds (sustained or gusts) exceed 20 miles per hour, personnel platform lifts shall be terminated until safe conditions exist where the lift can resume.

A qualified person must determine if, in light of indications of dangerous weather conditions (e.g., lightning, rain/snow) or other impending or existing danger, it is not safe to lift personnel. If it is not, then the lifting operation must not begin (or, if already in progress, must be terminated).

Fall Protection

Persons occupying the personnel platform must be provided with, and use, a PFAS attached to an approved anchorage point.

10.9 Pre-Lift Meeting/Brief

Immediately prior to the personnel lift, a pre-lift meeting will be held to discuss the operation, roles and responsibilities, and safety topics associated with the lift. During the pre-lift meeting, discuss the completed UCN-23252.

Personnel required to attend the meeting include the following:

- Equipment operator
- Rigger
- Signal person
- Personnel to be lifted
- Supervisor responsible for the lift
- PIC

The pre-lift meeting should include a FLHA briefing. The following aspects should be discussed:

- Critical lift plan
- Avoidance of overhead cables/wires
- Avoidance of protruding objects and structures
- Dropped object prevention
- Training requirements
- Power supply (where applicable)
- Inspection and testing
- General access arrangements

- Interface with other operations
- Potential changes to work patterns
- Weather conditions
- Any other guidance or conditions related to the lift

10.10 Repairs

After any repair or modification of the SPP or the platform and rigging, the equipment must be proof-tested to 125% of the platform's rated capacity by holding the platform in suspension for five minutes.

The platform will not be used for hoisting personnel until the proof-testing requirements are satisfied.

11.0 RECORDS

Records generated by this Document shall be maintained in accordance with Y15-95-800, *UPF Document Management*.

The following records generated are:

Record or Form Number	Record Title	System/ Location	Document Type
CFN-1323	*Elevated Work Risk Assessment Permit*	InfoWorks	EWRA
UCN-23238	*Ladder Inspections Sheet*	InfoWorks	LI
UCN-23239	*Fall Protection Equipment Inspections*	InfoWorks	FPEI
UCN-23248	*Aerial/Scissor Lift Daily Checklist*	InfoWorks	ALDC
UCN-23252	*Suspended Personnel Platform Risk Evaluation*	InfoWorks	SPPR
UCN-23253	*Suspended Personnel Platform Safety Checklist*	InfoWorks	SPPS
UCN-23432	*Walking/Working Surface Modification Permit*	InfoWorks	WSMP

12.0 REFERENCES

12.1 Source References

10 CFR 851, *Worker Safety and Health Program*

29 CFR 1926.104, *Safety belts, lifelines, and lanyards*

29 CFR 1926.500, Subpart M, *Fall Protection*

29 CFR 1926.760, Subpart R, *Fall Protection*

29 CFR 1926.95, *Criteria for personal protective equipment*

2HC-E0S0-00203-000, Bechtel Core Process 203, *Dropped Object Prevention*

2HC-E0S0-00212-000, Bechtel Core Process 212, *Fall Prevention and Protection*

2HC-E0S0-00215-000, Bechtel Core Process 215, *Floor and Wall Openings*

2HC-E0S0-00216-000, Bechtel Core Process 216, *Roofing Works*

2HC-E0S0-00224-000, Bechtel Core Process 224, *Mobile Elevating Work Platforms*

48 CFR 970.5223-1, *Integration of environment, safety, and health into work planning and execution*

ANSI B30.10-2019, *Hooks*

ANSI B30.5-2018, *Mobile and Locomotive Cranes*

ANSI Z359-2007, *Fall Protection and Fall Restraint Standards*

ANSI/SAIA A92.6-2006, *Self-Propelled Elevating Work Platforms*

ANSI/Scaffold & Access Security Association (SAIA) A92.5-2006, *Boom-Supported Elevating Work Platforms*

UPF-CP-108, *UPF Event Management and Investigation*

UPF-CP-200, *UPF General Safe Work Practices*

UPF-CP-205, *Personal Protective Equipment and Safe Work Apparel*

12.2 Interfacing References

29 CFR 1926, Subpart X, *Stairways and Ladders*

29 CFR 1926.750, Subpart R, *Steel Erection*

29 CFR 1926.1431, *Hoisting Personnel*

ASME B30.23, *Personnel Lifting Systems*

ML-SH-801768-A001, *UPF Quarterly Inspection Color Codes*

OSHA 1926.502, *Fall Protection*

UPF-CP-203, *Dropped Object Prevention*

UPF-CP-214, *Barricades and Signs*

UPF-CP-227, *UPF Safety Watches*

UPF-MANUAL-CM-001, *Uranium Processing Facility Construction Electrical Safety Manual*

UPF-POLICY-CM-002, *UPF Weather Protocols*

Y15-95-800, *UPF Document Management*

Y17-95-64-823, *UPF Field Level Hazard Assessment/Job Hazard Analysis Program (FLHA/JHA) Process*

Y17-95-64-831, *UPF Scaffold Control and Management*

Y17-95-64-847, *UPF Field Material Control and Traceability*

Y17-95-64-871, *UPF Construction Hoisting and Rigging Work Operations*

12.3 Forms

CFN-1323, *Elevated Work Risk Assessment Permit*

UCN-23238, *Ladder Inspections*

UCN-23239, *Fall Protection Equipment Inspections*

UCN-23248, *Aerial/Scissor Lift Daily Checklist*

UCN-23252, *Suspended Personnel Platform Risk Evaluation*

UCN-23253, *Suspended Personnel Platform Safety Checklist*

UCN-23432, *Walking/Working Surface Modification Permit*

UCN-23552, *Field Level Hazard Assessment (FLHA) Card*

13.0 SUPPLEMENTAL INFORMATION

Appendix A, *Acronyms and Definitions*

APPENDIX A
Acronyms and Definitions

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Acronyms

ANSI - American National Standards Institute 21
ASME - American Society of Mechanical Engineers 24
BNI - Bechtel National, Inc. 5
CFR - Code of Federal Regulations 13
ES&H - Environmental, Safety, and Health 5
HVAC - Heating, Ventilating, and Air Conditioning 8
JHA - Job Hazard Analysis 7
OSHA - Occupational Safety and Health Administration 33
PFAS - Personal Fall Arrest System 7
PFE - Project Field Engineer 6
PIC - Person in Charge 24
PPE - Personal Protective Equipment 7
SPP - Suspended Personnel Platforms 5
SRL - Self-Retracting Lifeline 11
UPF - Uranium Processing Facility 5
Y-12 - Y-12 National Security Complex 15

Definitions

Anchorage Point	A secure point of attachment for lifelines, lanyards, or deceleration devices related to personal fall protection systems.
Body Harness	A system of straps designed by a manufacturer that when secured around the worker, distributes the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders, with means for attaching the straps to other components of a PFAS.
Competent Person	An individual capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to personnel, and has authorization to take prompt corrective measures to eliminate them.
Connector	A device (e.g., snaphook, carabineer, rope grab) used to couple (connect) parts of a personal fall-arrest system and positioning-device system together.
Deceleration Device	Any mechanism (e.g., rip-stitch lanyard, specialty woven lanyard, SRLs) that serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on a worker during a fall arrest.
Dropped Object	Any object, with the potential to cause injury to personnel or damage equipment, which falls from an overhead elevation from its previous position under its own weight (e.g., tools/materials dropped from an elevated structure to a lower level).
Fall Restraint	A fall protection system that prevents the user from falling any distance. The system is comprised of a body harness, along with an anchorage, connectors and other necessary equipment.
Floor Hole	A gap or open space in a floor, roof, horizontal walking-working surface, or similar surface that is at least 2 inches (5 cm) in its least dimension. The Occupational Safety and Health Administration (OSHA) equivalent term is “Hole.”
Floor Opening	An opening measuring 12 inches or more in its least dimension, in any floor, platform, pavement, or yard through which persons may fall.

APPENDIX A
Acronyms and Definitions

(Page 2 of 2)

Guardrail System	A physical barrier erected around a hazard, such as an unprotected side/edge, to protect personnel and prevent entry into a specific area.
Hole	A gap or open space in a floor, roof, horizontal walking-working surface, or similar surface that is at least 2 inches (5 cm) in its least dimension.
Lanyard	Wire rope or strap that generally has a connector at each end for connecting the body harness to an anchorage point or lifeline.
Leading Edge	The advancing or progressing edge of a floor/roof/deck that changes location as additional floor/roof/deck planks or sections are placed or installed.
Low Slope Roof	"Low-slope roof" is defined as a roof having a slope less than or equal to 4 inches to 12 inches (vertical to horizontal).
Personal Fall Arrest System	A system used to arrest a worker in a fall from a working level.
Positioning Device System	A body harness system rigged to allow a worker to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.
Qualified Person	An individual who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems relating to fall protection.
Self-Retracting Lifeline/Lanyard	A fall protection device containing a drum-wound line that can be slowly extracted from, or retracted onto, the drum under slight tension during normal worker movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.
Wall Opening	A gap or open space in a wall, partition, vertical walking-working surface, or similar surface that is at least 30 inches (76 cm) high and at least 18 inches (46 cm) wide, through which an employee can fall to a lower level. The OSHA-equivalent term is “Opening.”
Walking/ Working Surface	Any horizontal surface on which a person walks or works, including but not limited to, floors, roofs, ramps, bridges, runways, formwork, and concrete reinforcing steel, but not including ladders, vehicles, or trailers, on which personnel must be located in order to perform their job duties.
Warning Line Systems	A barrier erected on a roof to warn personnel they are approaching an unprotected roof side or edge which designates an area in which roofing work may take place without the use of guardrail, full-body harness, or safety net systems.