



Preparer: *Tammy D. Threat* 06/29/20
 Tammy D. Threat
 UPF Construction Issues Management Procedure
 Compliance Lead
 Date

Approval: *Jamie M. Horning* 06/29/20
 Jamie M. Horning
 CNS UPF ES&H Manager
 Date

W. Dave Ross 07/06/20
 W. Dave Ross
 UPF Site Manager
 Date

David B. Harold 06/29/20
 David B. Harold
 UPF BNI ES&H Manager
 Date

7/29/2020
 Effective Date

Implements Quality Requirements			
<input type="checkbox"/> None	<input type="checkbox"/> BNI	<input type="checkbox"/> CNS	<input checked="" type="checkbox"/> BNI and CNS

REVISION LOG

Revision 0 Major intent Minor intent Non-intent

- Initial Issue.
- This new document supersedes the following documents and their associated PRCNs:
 - UPF-CP-212, *UPF Fall Prevention and Protection*
 - UPF-CP-215, *UPF Floor and Wall Openings/Holes*
 - UPF-CP-216, *Roofing Work*
 - UPF-CP-219, *UPF Suspended Personnel Platforms*
 - UPF-CP-222, *UPF Portable Ladders – Control and Use*
 - UPF-CP-224, *UPF Aerial/Scissor Lift Operations*
 - Y73-95-100, *UPF Dropped Object Prevention*.
- UCN-23432, *Walking/Working Surface Modification Permit*, was created with this revision.
- The following forms were revised with this revision:
 - UCN-23238, *Ladder Inspection Sheet*
 - UCN-23239, *Safety Condition Inspections – Fall Protection*
 - UCN-23248, *Aerial/Scissor Lift Daily Checklist*
 - UCN-23252, *Suspended Personnel Platform Risk Evaluation*
 - UCN-23253, *Suspended Personnel Platform Safety Checklist*
 - UCN-26359, *Alternate Fall Protection Plan*.

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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.

Elevated work is defined as any inspection, service, repair, maintenance, and/or other activities that require personnel to be on an open-sided floor, platform, roof, or other walking-working surface 6 feet or more above the ground or adjacent floor. All rooftop work is considered, for purposes of this manual, to be elevated work.

1.2 Scope

This manual applies to all UPF, subcontractor, and visitor 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 that 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 & Health Manager

The Environmental, Safety & Health (ES&H) Manager is responsible for:

- 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 application.

2.3 Environmental, Safety & Health Representative

The ES&H Representative is responsible for supplying technical guidance and oversight of elevated work practices through planning activities and field observations.

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 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 herein.
- 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.
- Ensuring that unsafe conditions or behaviors are corrected/controlled.

2.7 Personnel

UPF Personnel are responsible for:

- Understanding and complying with the requirements of this manual.
- Pausing/stopping work when they are unsure of the requirements for a work task or they witness an unsafe condition or behavior.

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 (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, such as vertical and horizontal lifeline systems, rebar/wall anchorage points, etc.

NOTE: *A designated engineer with knowledge and experience in the dynamics of fall protection can be a qualified person by definition of 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. The Safety Task Analysis and Risk Reduction Talk (STARRT) 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 by 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 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.

3.4 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/Holes**.

3.5 Secondary Fall Protection Systems – PFAS

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

Anchorage utilized in fall arrest systems must be independent from all other uses and capable of supporting 5,000 lbs. per person attached, or designed, installed, and used under the supervision of a qualified person as part of a complete personal fall arrest system 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 qualified person as part of a complete personal fall arrest system that maintains a safety factor of at least two.

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

3.5.3 PFAS 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 or approved 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 an approved 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.

- 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, etc.) utilized in fall arrest systems shall be double action, at a minimum.
- Fixed length 6 feet 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 UPF (or subcontractor employer) are to be used.

Positioning Lanyards

- 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.

- 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 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. An inspection shall be documented on the tag, indicating that it is safe for use.
- Horizontal life lines will not be used for any purpose other than providing fall protection (e.g., handrail).

3.5.7 Self-Retracting Life Lines

When using self-retracting life lines:

- 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.
- A D-ring extender lanyards (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 lanyard.

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. Therefore, fall restraint prevents contact with the hazard and prevents a free fall from occurring.

Anchor points for fall restraint systems must be capable of supporting at least 3,000 lbs. per person attached or twice the maximum expected force that is 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 provides 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 use an approved personal fall arrest systems.
- Personnel utilizing ladders within 6 feet of guardrail systems must evaluate the work for the implementation of personal fall arrest systems or modifications to the existing guardrail system (e.g., installing a third guardrail level).
- All access ladders (portable and permanent) 20 feet in length or greater shall be equipped with a self-retracting lanyard or approved ladder-climbing device.

3.6.2 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 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.
- 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 UCN-26359, *Alternate Fall Protection Plan*.

3.6.3 Reinforcement Steel/Concrete Work

Ensure the following when doing 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 can 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 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.

3.6.4 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 personal fall arrest systems, as appropriate. Fall arrest systems utilized in leading edge activities shall be manufactured and designed to withstand leading edge fall hazards (i.e., edge impact, cut, abrasion, etc.) and maintain adequate fall clearance.

3.6.5 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 (i.e., Miller TurboLite) or a 4-foot fixed or shock-absorbing lanyard used in a restraint fashion.

3.7 Alternate Fall Protection Plan

A UCN-26359 shall be prepared and implemented to use when:

- Conventional fall protection equipment or systems are not feasible or it creates a greater hazard.
- Fall protection equipment or systems will be used in a manner inconsistent with ordinary or routine use.

The alternate fall protection plan shall be prepared by a Competent Person in conjunction with the Construction Supervisor, ES&H, and personnel engaged in the work. The alternate fall protection plan must conform to the following:

- Developed specifically for the work activity (e.g. scaffold erection) or site where the work is being performed.
- Changes to the alternate fall protection plan shall be approved by the Competent Person. Open/working plans must be reviewed and reapproved as the work scope or conditions change.
- Personnel engaged in work under an alternative fall protection plan shall be briefed to its requirements prior to commencing work.

3.8 Inspection

A designated 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 means (e.g., Toolhound™ electronic database or UCN-23239, *Safety Condition Inspections – Fall Protection*).

Damaged or defective fall protection equipment shall be tagged, removed from service, and sent to a controlled area.

3.9 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 (i.e. aerial lift, crane, etc.) is feasible, the equipment must be staged in close proximity and accessible to the work activity.

4.0 FLOOR AND WALL OPENINGS/HOLES

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 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 when installed to prevent accidental displacement by the wind, equipment, or personnel. Secure floor covers by attaching angle iron, lumber, or other restraint mechanism, as applicable, to prevent displacement.
- Floor hole/opening covers are required to be marked with a sign stating: "DANGER – Floor Hole/Opening – Do Not Remove Cover."
- Pipe penetrations, etc. that extend above the walking/working surface can be covered using boxes constructed to meet the requirements of this procedure.

NOTE: *This provision does not apply to permanent covers like cast iron manhole covers or steel grates used on streets or roadways.*

- 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.

4.2.1 Floor Openings

All floor openings 40 inches or less at their narrowest dimensions are to be covered and secured using 3/4-inch exterior-grade plywood or the equivalent. Floor opening covers can run continuously, as long as the width of the hole is not greater than 40 inches, over such items as trenches, pipe chases, etc.

4.2.2 Temporary Flooring

When a floor opening exceeds 40 inches at its narrowest dimension, it will require temporary flooring of sufficient strength for the anticipated loads. Temporary flooring should be evaluated by the Responsible Supervisor and Engineering for proper construction and support.

4.2.3 Wall Openings

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

4.2.4 Cover Removal/Modification

Whenever any type of cover needs to be removed, the person or persons removing it must have authorization from their supervisor. The supervisor will inspect the area where the cover or covers are to be removed to determine what precautions (i.e., guarding, fall protection, etc.) are warranted.

If a floor cover is removed, and the exposed opening would allow an individual to pass through and fall 6 feet or more to a lower level, erect a guardrail system around the opening prior to removing the cover. All personnel inside the guardrail system are required to wear a personal fall arrest system.

The supervisor shall perform a risk assessment for dropped objects at the level of the cover/opening and lower levels below the work area.

4.2.5 Cover Modification

If covers must be altered or cut so they can 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.

4.3 Walking/Working Surface Modification

The following general requirements will apply whenever a permanent or semi-permanent walking/working surface, typically floor grating, floor plate, or permanent handrail, must be removed or modified to accommodate the install of a commodity or other material.

Supervision must review each work task to determine whether the removal of grating/floor plate/handrail is necessary to perform the task. If removal is required, supervision and field engineering, together with the ES&H Representative, must review the actual work location and complete UCN-23432, *Walking/Working Surface Modification Permit*. The requirements of the permit include:

1. Once it is established that removal is necessary, supervision must review the work to minimize the amount of grating, floor plate, or handrail to be removed.
2. Only those crafts that are specifically trained to perform such work (e.g., structural steel personnel) will be allowed to remove/replace the grating/floor plate/handrail.
3. All access points to the area where the removal takes place shall be hard barricaded and properly marked (signs/tags).
4. No opening will be left unguarded. A fixed guardrail system must be installed around any opening that presents a fall hazard.
5. Fall protection must be provided and used by those working inside the barricaded area.
6. 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 or other potential hazards.
7. Illumination needs shall be evaluated prior to the start of work and additional lighting shall be installed or provided, where required.

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8. The remaining grating/floor plate/handrail bordering the removed grate(s)/floor plate(s) sections must be protected from movement or slippage. The remaining grating/floor plate/handrail can be secured by wiring down, installing clips, or other means capable of preventing displacement.
9. 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.
10. When reinstalling grating/floor plate/handrail, supervision shall verify that all material has been completely re-installed, correctly positioned, and properly fastened/secured.
11. When all grating/floor plate/handrail has been reinstalled and properly secured, the area can be inspected by the Initiating Supervisor, the Barricade Foreman, Field Engineer, and authorized ES&H Representative to ensure all measures are correct, the barricade can be removed, and the area released for general use.

5.0 DROPPED OBJECT PREVENTION

5.1 Purpose

This section provides the requirements for preventing dropped objects (i.e., tools, materials, etc.) and minimizing impacts should a dropped object occur.

5.2 Worksite Evaluation and Planning

The following are requirements for evaluating work areas and planning for elevated work activities:

- Before starting elevated work, the Responsible Supervisor shall assess the location to ensure that housekeeping is acceptable and appropriate dropped object prevention tools are in place. This includes ensuring that the area is equipped with the following (as applicable):
 - Material handling ropes
 - Wheel wells
 - Material bags
 - Storage areas
 - Containers with a closure mechanism
 - Debris netting.
- Any deficiencies noted should be corrected prior to the start of work.
- The Responsible Supervisor should ensure that the work area is clear of potential dropped objects prior to the end of each shift.

5.2.1 Work Planning/Communication

Personnel shall communicate overhead hazards associated with their work tasks to coworkers and other affected personnel. Whenever possible, crews will not work below each other unless it is required to complete the work task (e.g., siding activities, steel erection).

When it is necessary to work above and below each other, personnel should document communications on UCN-23162, *Safety Task Analysis and Risk Reduction Talk (STARRT) Card*.

5.3 Work Practices

Below are general engineering controls and safe work practices to be implemented to prevent or protect personnel from dropped objects. These work practices should be evaluated for each work task and an appropriate combination of those practices selected to mitigate dropped object hazards.

5.3.1 Barricades

When overhead hazards (e.g., dropped objects) are present, a general rule for barricade erection boundaries is one foot horizontal for every two feet vertical.

If this distance is not feasible because of site conditions or restrictions, alternative measures shall be implemented and documented on the STARRT Card in conjunction with the barricade (e.g., Overhead Safety Watch).

Authorized personnel working within the established barricade shall remain clear of line-of-fire hazards created from elevated work activities (e.g., hoisting/rigging, material handling, dropped objects).

5.3.2 Debris Netting

All guardrails on elevated work areas (e.g., scaffold, mezzanine, aerial lifts) shall be equipped with debris netting and the netting maintained to prevent inadvertent dropped or falling objects. Routine inspections of the debris netting will be made by personnel accessing and working from that elevated surface. Any noted deficiencies shall be corrected before starting work in that area.

Installed debris netting shall not be removed or modified. If debris netting must be removed or modified to accommodate a work activity, evaluate work areas below and implement alternate work practices as appropriate.

5.3.3 Tool Lanyards

When working at elevation, tool lanyards or other approved devices (e.g., Motorola Radio Chest Pack HLN6602A) shall be the primary control used.

Tool lanyards or other approved devices shall be securely affixed to the tool/device in accordance with the manufacturer's instructions and attached to the user or a secondary anchorage point (depending on the weight/type of tool). Attachment points and other tethering devices shall only be affixed by a designated person who has been trained in the practice.

5.3.4 Rope and Well Wheels

Rope hand lines and/or well/gin wheels should be used to raise and lower materials and equipment. Small tools and materials shall be placed in a rated material/canvas bag and raised or lowered to the work area.

Rope shall be appropriately sized and rated for the material being hoisted.

A positive locking attachment (i.e., carabineer, shackle, etc.) is the preferred method for securement. If shackles or carabineers are utilized, they shall be of the locking-type and properly rated for the intended load. When infeasible, a positively tied knot (i.e., bowline knot) shall be affixed to hoisted or lowered materials and equipment.

5.3.5 Material/Canvas Bags

Loose materials and small tools shall be placed in a Project-approved material/canvas bag and raised or lowered with a rope. The preferred style of material bag is one that closes at the top to secure the tools and materials in the bag and that has an affixed rated capacity.

Do not load the canvas bag beyond its carrying capacity.

Only those tools and materials necessary for the task should be contained in material bags in the work area. The bag shall also be secured to a fixed object to prevent the bag from tipping and spilling its contents.

5.3.6 Positive Control

Personnel will be trained on proper tool and material handling techniques, including the “twist method,” when passing material. The twist method helps ensure that the receiver has control of the material before the sender releases it by twisting the material upon receipt and prior to the sender releasing the material.

For example, a carpenter is passing a scaffold pole to a coworker. As he passes the pole, the receiver grabs it and “twists” it from the sender’s hand. The sender does not release the pole until the receiver has control of it.

5.3.7 Overhead Protection

Overhead protection shall be used to provide protection to personnel at lower elevations for designated walkways and areas with no alternate emergency exits when overhead work/dropped object hazards exists.

Protective canopies, such as the use of scaffold systems and decking, shall be erected by Competent Personnel and capable of supporting the potential load impact. A manufactured debris net system is another option and must be of sufficient strength, design, and installed appropriately to support the potential load impact.

5.3.8 Tool and Material Storage

Non-essential tools and materials should not be stored or staged at elevation (on scaffold decks or mezzanine levels). Supervisors shall address unnecessary tools and materials in the work area during their worksite evaluations and general housekeeping assessments.

5.3.9 Hitchhikers

Personnel must inspect loads to ensure that loose tools or materials do not become “hitchhikers” that can become a dropped object hazard when the load is hoisted/moved/installed.

5.4 Dropped Object Events

All dropped object events shall be reported and evaluated. If the severity of the event warrants, investigate in accordance with UPF-CP-108, *UPF Event Management and Investigation*.

Post-event, the work practices utilized (e.g., barricade, tool tethers) shall be evaluated to ensure that the proper implementation and adequacy of those controls.

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) shall be located on the equipment.
- 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 STARRT 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 the 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) maintains 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.

6.4 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 areas or structures by exiting or entering the lift platform under the following requirements:

- The job must be evaluated to ensure that 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 the STARRT Card.
- Personnel must use the lift manufacture's access point (e.g., gate, slide bar) when entering or exiting the lift.
- Personnel must be provided appropriate fall protection throughout the transition process: during transition to and from the lift, during transition to and from the elevated area or structure, and while performing work on the elevated area or structure.

6.6 Wind Conditions

Follow the manufacturer's recommendations of 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 straight/extension 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 through the ladder's 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 the ladder 36 inches beyond 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 OSHA 29 CFR 1926 Subpart X, *Stairways and Ladders*.

7.5 Ladder Inspection

A designated person(s) 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 Inspection Sheet*).

Damaged or defective ladders shall be tagged, removed from service, and sent to a controlled area.

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 that 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 UCN-26359 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

The 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 the 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, do the following:
 - Use warning lines made of rope (cannot be red, yellow, or combined yellow and magenta in color), wire, or chain.

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- Affix highly visible flagging at no less than 6 feet 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 that its lowest point (including sag) is no less than 34 inches from the walking/working surface and 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 step.
- 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 suspended personnel platforms (SPP).

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 that adequate inspection and maintenance of equipment have been carried out in accordance with this procedure.
- Supervising the performance of the rigging work operations for SPP lifts and has the authority to stop any lift operation in the event that 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 Bechtel National Incorporated (BNI) ES&H Manager and PFE that a suspended personnel platform will be used over other conventional means, then the requestor shall:

- Conduct a risk evaluation before a lifting plan is prepared using form 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 suspended personnel platform.
- Attach 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 done 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 that 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:
 - 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 that 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 that 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 that all ropes are properly seated on drums and in sheaves.
 - If any deficiencies are found with the equipment that pose 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 person who is familiar with structural engineering.
- 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 personal fall arrest system 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 1/2-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.
 - 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 personal fall arrest system 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 STARRT briefing. The following aspects should be discussed:

- The critical lift plan
- Avoidance of overhead cables/wires
- Avoidance of protruding objects, 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 suspended personnel platform 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 procedure shall be maintained in accordance with Y15-95-800, *UPF Document Management*. Record types for documents submitted to the UPF Document Management Center are identified in ML-PS-801768-A001, *Uranium Processing Facility Project Master Document Type List*. Quality type is listed as Quality-Lifetime (QA-L), Quality-Nonpermanent (QA-NP), or Non-Quality (Non-QA).

Records generated during the performance of this procedure include:

Record or Form Number	Record Title	Record Holder	System/ Location	Quality Type
UCN-23238	<i>Ladder Inspection Sheet</i>	UPF Construction	Shared Drive	Non-QA
UCN-23239	<i>Safety Condition Inspections – Fall Protection</i>	UPF Construction	Shared Drive	Non-QA
UCN-23248	<i>Aerial/Scissor Lift Daily Checklist</i>	UPF Construction	Shared Drive	Non-QA
UCN-23252	<i>Suspended Personnel Platform Risk Evaluation</i>	UPF Construction	Shared Drive	Non-QA
UCN-23253	<i>Suspended Personnel Platform Safety Checklist</i>	UPF Construction	Shared Drive	Non-QA
UCN-23432	<i>Walking/Working Surface Modification Permit</i>	UPF ES&H	Shared Drive	Non-QA
UCN-26359	<i>Alternate Fall Protection Plan</i>	UPF ES&H	Shared Drive	Non-QA

12.0 REFERENCES

12.1 Source References

- 10 CFR 851, *Worker Safety and Health Program*
- 29 CFR 1926.95, *Criteria for personal protective equipment*
- 29 CFR 1926.104, *Safety belts, lifelines, and lanyards*
- 29 CFR 1926.500, Subpart M, *Fall Protection*
- 29 CFR 1926.750, Subpart R, *Steel Erection*
- 29 CFR 1926.760, Subpart R, *Fall Protection*
- ANSI B30.10-2019, *Hooks*
- ANSI B30.5-2018, *Mobile and Locomotive Cranes*
- ANSI Z359 – 2007, *Fall Protection Code*
- ANSI/SIA A92.5 – 2006, *Boom-Supported Elevating Work Platforms*
- ANSI/SIA A92.6 – 2006, *Self-Propelled Elevation Work Platforms*
- Bechtel ES&H Core Process 212, *Fall Protection*
- Bechtel ES&H Core Process 214, *Barricades and Signs*

Bechtel ES&H Core Process 215, Floor and Wall Openings
Bechtel ES&H Core Process 224, *Mobile Elevating Work Platforms*
Bechtel ES&H Manual 4SM-6BH-F0001, NS&E 212 – Fall Protection
OSHA 29 CFR 1926.1431, *Hoisting Personnel*
UPF-CP-200, *UPF General Safe Work Practices*
UPF-CP-205, *Personal Protective Equipment and Safe Work Apparel*

12.2 Interfacing References

ML-PS-801768-A001, *Uranium Processing Facility Project Master Document Type List*
ML-SH-801768-A001, *UPF Quarterly Inspection Color Codes*
UPF-CP-108, *UPF Event Management and Investigation*
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*
Y17-95-64-831, *UPF Scaffold Control and Management*
Y17-95-64-871, *UPF Construction Hoisting and Rigging Work Operations*

13.0 SUPPLEMENTAL INFORMATION

Appendix A, *Acronyms and Definitions*

APPENDIX A Acronyms and Definitions

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Acronyms

ANSI	American National Standards Institute
BNI	Bechtel National Incorporated
ES&H	Environmental, Safety & Health
JHA	Job Hazard Analysis
PFAS	Personal Fall Arrest Systems
PFE	Project Field Engineer
PIC	Person-In-Charge
PPE	Personal Protective Equipment
SPP	Suspended Personnel Platform
STARRT	Safety Task Analysis and Risk Reduction Talk
UPF	Uranium Processing Facility
Y-12	Y-12 National Security Complex

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 about 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 personal fall-arrest system
Competent Person	One who is 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) that is used to couple (connect) parts of a personal fall-arrest system and positioning-device system together
Deceleration Device	Any mechanism (e.g., such as a rip-stitch lanyard, specialty woven lanyard, self-retracting lanyards) 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 that are 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	Any gap or void measuring less than 12 inches, but more than 1 inch at its smallest dimension, in any floor, roof, or platform through which materials, but not persons, may fall to a lower level, such as belt hole, pipe opening, or slot type opening

APPENDIX A Acronyms and Definitions

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Floor Opening	Any gap or void measuring 12 inches or more at its smallest dimension in any floor, roof, or platform through which a person could fall
Guardrail System	A barrier erected to identify an unprotected side/edge and protect personnel from falling to lower levels
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	One 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 void located less than 39 inches above the walking/working surface, and dimensions at least 30 inches high and 18 inches wide in any wall or partition through which persons may fall to a lower level such as doorways, chute openings, or rigging openings.
Walking/Working Surface	Any surface, whether horizontal or vertical, 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 that 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