



## UPF PROJECT PROCEDURE

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### Revision History

| <b>Revision</b> | <b>Reason/Description of Change</b>   |
|-----------------|---|
| 4               | This revision is a complete rewrite; therefore revision bars are not shown. This revision further describes the minimal requirements for guarding floor holes, floor openings and wall openings to prevent objects from falling to lower levels and personnel from tripping in or falling through holes and/or openings at the UPF Project. |
| 3               | Adopted initial issue from Bechtel Core Process 215 at its current revision 3.  |

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## UPF Floor and Wall Openings/Holes

**1.0 PURPOSE**

This procedure describes minimal requirements for guarding floor holes, floor openings and wall openings to prevent objects from falling to lower levels and personnel from tripping in or falling through holes and/or openings at the Uranium Processions Facility (UPF) construction site.

**2.0 GENERAL****2.1 Description**

This procedure is applicable to UPF construction site personnel, subcontractors, vendors, and visitors during the course of the project.

**2.2 Acronyms/Definitions**

## Acronyms

|            |                             |
|------------|-----------------------------|
| <b>CM</b>  | Construction Manager        |
| <b>DS</b>  | Discipline Superintendent   |
| <b>FSM</b> | Field Safety Manager        |
| <b>FSR</b> | Field Safety Representative |

## Definitions

|                                |  |
|--------------------------------|--|
| <b>Floor Hole</b>              | 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.             |
| <b>Floor Opening</b>           | 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.   |
| <b>Hard Barricade</b>          | A wooden or metal guarding barrier with a top rail at 42 inches, +/- 3 inches, and a mid-rail, capable of withstanding 200lbs. of force applied from any direction.  |
| <b>Lower Levels</b>            | Those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.                |
| <b>Wall Opening</b>            | 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. |
| <b>Walking/Working Surface</b> | Any surface, whether horizontal or vertical on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel where employees must be located in order to perform their job duties.  |

**3.0 RESPONSIBILITIES****3.1 Construction Manager (CM)**

The CM has the overall responsibility for ensuring the implementation of this procedure, ensuring that all project personnel actively participate; and provides worker support, facilities, and other resources necessary to effectively carry out this procedure.

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**3.2 Field Safety Manager (FSM)**

The FSM has the overall authority for interpretation of the regulations associated with the procedure and the interpretation of the procedure as to intent and application.

**3.3 Field Safety Representative (FSR)**

The FSR has the responsibility of compliance oversight with the procedure through periodic field inspections and is responsible for supplying technical advice and interpretation of the environmental, safety, and health codes included in the procedure.

**3.4 Discipline Superintendent (DS)**

The DS is responsible for being thoroughly familiar with this procedure and their individual responsibilities regarding compliance with and implementation of this procedure, pre-planning work activities to identify the appropriate controls to use and ensuring workers understand the requirements of the procedure.

**3.5 Supervisor**

The Supervisor is responsible for ensuring the applicable safety controls and processes are incorporated into planning and execution of the work and that the workers are using the correct PPE for the assigned task.

**4.0 PROCESS****4.1 General Requirements**

- Each employee on walking/working surfaces shall be protected from falling through floor/wall openings (including skylights) 6 feet or more above lower levels, by personal fall arrest systems, covers, or guardrail systems erected around floor/wall openings.

Each employee on a walking/working surface shall be protected from tripping/stepping into floor holes/openings (including skylights) by covers. Another option includes installing a hard barricade (guardrail) around the hole/opening.

- Each employee on a walking/working surface shall be protected from objects falling through holes/openings (including skylights) by covers. Additional options include erecting toe-boards, screens, or hard barricade systems to prevent objects from falling from higher levels, or restricting access to the areas below holes/openings.
- When the narrowest dimension of a floor opening is greater than 40 inches, the floor opening cover will be treated as a temporary floor. Consult with field engineering on temporary floor construction to support the weight of anticipated loads. (Describe the procedure process in this section)

**4.2 Cover Requirements**

Covers for floor holes/openings, in floors, roofs and other walking/working surfaces shall meet the following requirements:

- Covers located in roadways and vehicular aisles shall be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover.
- All other covers shall be capable of supporting, without failure, at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.

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- All covers shall be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees. Secure floor covers by attaching angle irons, 2x4s, or other restraint, as applicable, to prevent shifting.
- Floor hole/opening covers are required to be marked: “DANGER – Floor Hole/Opening – Do Not Remove Cover”, additional language may be added to the sign such as “Contact Responsible Supervisor prior to cover removal”. See Section 4.2.1 for cover removal requirements.

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

- Floor covers for a circular floor hole can be made in a circular, square, or rectangular shape. Pipe penetrations, etc. that extend above the walking/working surface can be covered using boxes constructed to meet the requirements of this procedure.
- Covers for floor holes/openings will extend a minimum of 4 inches over all edges from the hole or opening; when  $\frac{3}{4}$  - 1 inch steel plate or supported plywood is used, a minimum 1.5 inch overlap is required or can be recessed into the floor hole/opening equal to final design.
- Covers for wall openings will be substantially braced to withstand a minimum 200lb. force without failure from any direction.
- Floor covers can run continuously, as long as the width of the floor opening is not greater than 40 inches, over such items as trenches, pipe chases, etc.

#### 4.2.1 Cover Removal

- Whenever any type of cover needs to be removed, the employee or employees 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. All employees inside the guardrail system are required to wear a personal fall arrest system.

#### 4.2.2 Cover Alterations

If covers must be altered or cut so they can accept piping, conduit, etc., the supervisor responsible for the work will be required to contact the supervisor of the responsible craft to make changes to alterations to floor covers.

#### 4.3 Guardrail System Requirements

Reference UPF-CP-214, *Barricades and Signs*, for guardrail system requirements.

#### 4.4 Personal Fall Arrest System Requirements

Reference UPF-CP-212, *Fall Protection*, for specific requirements.

#### 5.0 RECORDS

All records generated as a result of this procedure are maintained in accordance with Y15-101, *Records and Controlled Documents*, and Y15-95-800, *UPF Document Management*.

Records generated during the performance of this procedure include:

None.

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**6.0 REFERENCES****6.1 Source References**

- 29 CFR 1926 Subpart M, *Fall Protection*, OSHA
- Bechtel ES&H Core Process 215, *Floor and Wall Openings*
- Bechtel ES&H Core Process 214, *Barricades and Signs*
- Bechtel ES&H Core Process 212, *Fall Protection*

**6.2 Interfacing References**

- UPF-CP-214, *Barricades and Signs*
- UPF-CP-212, *Fall Protection*

**7.0 EXHIBITS / APPENDICES / FIGURES**

None.