

Roofing Work



Prepared by:

Brian Garrett

04/30/18

Brian Garrett
UPF BNI ES&H Lead

Date

Approved by:

Jamie Horning

04/30/18

Jamie Horning
UPF BNI ES&H Manager

Date

Gary F. Hagan

05/03/18

Gary F. Hagan
UPF ES&H Manager

Date

David Ross

05/14/18

David Ross
UPF Construction Manager

Date

John Howanitz

05/09/18

John Howanitz
Senior Vice President & UPF Project Director

Date

RC-UPF DMC

05/16/18

05/16/18 12:32

Effective Date

This document has been reviewed by a Y-12 DC / UCNI-RO and has been determined to be UNCLASSIFIED and contains no UCNI. This review does not constitute clearance for Public Release.

Name: *Neal Mowery* Date: 05/15/18

Roofing Work

REVISION LOG

Revision	Description	Intent	Non Intent
5	This revision updated safety position description, added weather protocol policy reference, and added interfacing reference for weather and floor openings/holes.	X	
4	This revision is a complete re-write, therefore no revision bars are shown. This revision further establishes requirements to safely perform work on existing roof structures.	X	
Previous revisions	On record	N/A	

CONTENTS

1.0 INTRODUCTION	4
1.1 Purpose	4
1.2 Description.....	4
2.0 RESPONSIBILITIES	4
2.1 Construction Manager (CM).....	4
2.2 Environment, Safety & Health Manager	4
2.3 ES&H Representative	4
2.4 Discipline Superintendent	4
2.5 Subcontract Technical Representative.....	4
3.0 PROCESS.....	4
3.1 General Guidelines	4
3.2 Mechanical Equipment.....	5
3.3 Material Storage	5
4.0 RECORDS	6
5.0 REFERENCES.....	6
5.1 Source References	6
5.2 Interfacing References.....	6
6.0 SUPPLEMENTAL INFORMATION	6
APPENDIX A Acronyms and Definitions.....	7

1.0 INTRODUCTION

1.1 Purpose

This procedure describes the minimum requirements for working on roof structures at the Uranium Processing Facility (UPF) construction sites and other support areas.

1.2 Description

The procedure is applicable to the UPF construction project workers, including subcontractors where work will be performed on an existing/completed roof structures.

2.0 RESPONSIBILITIES

2.1 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.

2.2 Environment, Safety & Health Manager

The ES&H Manager has the overall authority for interpretation of the regulations associated with the procedure and the interpretation of the procedure as to intent and application.

2.3 Environment, Safety & Health Representative

The ES&H Representative 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.

2.4 Discipline Superintendent

The Discipline Superintendent is responsible for being thoroughly familiar with this procedure and their individual responsibilities regarding compliance with and implementation of this procedure.

2.5 Subcontract Technical Representative

The Subcontract Technical Representative is responsible for being familiar with this procedure and specific individual responsibilities regarding implementation as well as providing this procedure to subcontractors working at the UPF construction sites and other support areas with directions to follow the procedure.

3.0 PROCESS

3.1 General Guidelines

- 3.1.1 Prior to performing any work, including preliminary inspection, the structural integrity of the roof will be verified by a certified or professional structural engineer.

Roofing Work

- 3.1.2 A Job Hazard Analysis (JHA) will be performed prior to commencing any roof work in accordance with Y17-95-64-823, *UPF Safety Task Analysis and Risk Reduction Talk / Job Hazard Analysis (STARRT / JHA) Process*.
- 3.1.3 Fall Prevention/Protection planning will be performed in accordance with UPF-CP-212, *Fall Protection and Prevention*.
- 3.1.4 Floor holes/openings in roofs shall be protected in accordance with UPF-CP-215, *UPF Floor and Wall Openings/Holes*
- 3.1.5 Roof access will be closely monitored by a supervisor during inclement weather by following UPF-POLICY-CM-002, *UPF Weather Protocols*.
- 3.1.6 Roof access and work is generally prohibited at night unless appropriate and adequate illumination is provided.
- 3.1.7 Employees engaged in roofing work will be protected from falling from unprotected sides and edges of a roof by one of the following methods:
- **Low Slope Roofs** - Employees engaged in roofing work exposed to a potential fall hazard of 6 feet or greater will be protected by an approved guardrail systems, personal fall arrest systems, or warning line systems per UPF-CP-212.
 - **Steep Roofs** - For a steep roof (having a slope greater than 4 inches vertical, 12 inches horizontal) with unprotected sides and edges 6 feet or more above lower levels, protect with guardrail systems with toe boards or personal fall arrest systems per UPF-CP-212.
 - **Alternate Fall Protection Plan** – When other fall protection systems cannot be applied, develop an Alternate Fall Protection plan in accordance with procedure UPF-CP-212, *Fall Protection and Prevention*.

3.2 Mechanical Equipment

- 3.2.1 Secure mechanical equipment and work materials in storage to prevent them from sliding off the roof or being blown off by the wind.
- 3.2.2 Work equipment driven by gasoline or diesel must stand on a drip tray.
- 3.2.3 Fuel for re-fueling must be carried and stored in a safety can.
- 3.2.4 Only sufficient fuel for one day's work is allowed to be stored on the roof deck.
- 3.2.5 When mechanical equipment is used or stored within 6 feet of an unprotected roof edge, protect employees in this area by full-body safety harness or safety net systems.
- 3.2.6 When mechanical equipment is used or stored in other locations, protect employees by warning line systems or safety harnesses.

3.3 Material Storage

- 3.3.1 Only sufficient material for a maximum of two days work shall be stored on roofs.
- 3.3.2 All material must be secured at the end of the every shift. Where necessary, weather forecast shall be assessed and adequate protective and preventative storage arrangements made.
- 3.3.3 Materials and tools must not be stacked at roof edges unless secure netting, at a minimum, covers the guardrail.
- 3.3.4 Sheets, insulation and cladding, must not be used as a working platform on open steelwork.
- 3.3.5 Waste and scrap material must be secured and removed at the end of every shift.

Roofing Work

- 3.3.6 Suitable systems with adequate capacity must be installed for material handling and lifting. Adequate storage space must be planned into the work process.
- 3.3.7 Materials may not be stored within 6 feet of the roof edge unless guardrails are erected at the roof edge (batter board/plywood or other approved debris netting may also be necessary to control loose material).

4.0 RECORDS

None

5.0 REFERENCES

5.1 Source References

Bechtel ES&H Core Process 212, *Fall Protection*

5.2 Interfacing References

UPF-CP-212, *Fall Protection and Prevention*

UPF-CP-215, *UPF Floor and Wall Openings/Holes*

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

Y17-95-64-823, *UPF Safety Task Analysis and Risk Reduction Talk / Job Hazard Analysis (STARRT / JHA) Process*

6.0 SUPPLEMENTAL INFORMATION

Appendix A, Acronyms and Definitions

APPENDIX A Acronyms and Definitions

ACRONYMS:

CM	Construction Manager
ES&H	Environment, Safety & Health
JHA	Job Hazard Analysis
UPF	Uranium Processing Facility

DEFINITIONS:

Guardrail system	A hard barrier erected to protect employees from falling to lower levels.
Low Slope Roof	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 an employee in a fall from a working level. It consists of an anchorage, connectors, and a full-body harness and may include a lanyard, deceleration device, and lifeline or suitable combinations of these.
Mechanical Equipment	All machine, engine, motor, human or motor propelled wheeled equipment used on a roof.
Roof	The exterior surface on the top of a building. This does not include floors or formwork which, because a building has not been completed, temporarily becomes the top surface of a building.
Roofing Work	The hoisting, storage, application, and removal of roofing materials and equipment, including related insulation, sheet metal, and vapor barrier work, but not including the construction of the roof deck.
Warning line systems	A barrier erected on a roof to warn employees 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 or full body harness to protect employees in the area.