
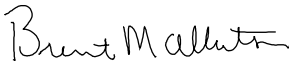
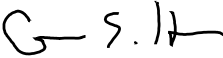

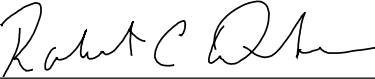
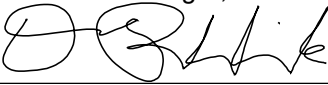


UPF Hot Work Permit



Preparer:	 Heather D. Jeffries UPF Construction Issues Management	03/25/25 Date
Approval:	 Brent M. Albertsen UPF Engineering Group Supervisor (HVAC/FP/MET/EQ/SPEC/MECH)	04/08/25 Date
	 Gerald E. Hearne UPF Fire Protection Field Engineer	04/07/25 Date
	 Jason P. Curns UPF Deputy Field Engineering Manager	03/26/25 Date
	 Robert C. Drake UPF ES&H Manager, BNI	04/07/25 Date
	 Dustin E. Reddick UPF Site Manager	04/08/25 Date
		04/08/25 Effective Date

REVISION LOG

Revision 6	
<input type="checkbox"/> Intent <input checked="" type="checkbox"/> Non-Intent	Implements PRMS Requirements: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> CFN-1139, <i>UPF Hot Work Permit</i>, has been edited as part of this revision Updating BNI Fire Protection Engineer (FPE) to BNI Fire Protection Engineer (FPE)/BNI Fire Protection Field Engineer (FPFE) throughout document Other changes include: <ul style="list-style-type: none"> Updated Section 2.5, <i>BNI Fire Protection Engineer or Delegate</i> to reflect new title “<i>BNI Fire Protection Engineer/ BNI Fire Protection Field Engineer or Delegate</i>” Updated references and acronyms Editorial changes 	
Revision 5	
<input checked="" type="checkbox"/> Intent <input type="checkbox"/> Non-Intent	Implements PRMS Requirements: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> The following form has been revised as a result of this document: CFN-1139, <i>UPF Hot Work Permit</i> Updated Section 3.2, <i>Performing Hot Work</i>, Included details regarding the temporary suspension and re-start of hot work activities <ul style="list-style-type: none"> Included additional PIA sign-off signature line to ensure conditions are acceptable after returning from lunch break Updated Section 3.1.8 to add clarification to the establishment of Hot Work Areas where Welding Blankets and Curtains are used in place of the 35-Foot Rule Updated Section 2.4, <i>Permit Authorizing Individual</i>, to add additional responsibilities on the verification of work control implementation as described in Appendix E, Notes 3A and 3B Other changes include: <ul style="list-style-type: none"> Updated to current CMGD template Updated references and acronyms Editorial changes 	
Revision 4	
<input checked="" type="checkbox"/> Intent <input type="checkbox"/> Non-Intent	Implements PRMS Requirements: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> No forms have been edited as part of this revision Updated Section 1.2, <i>Scope</i> Added Appendix F, <i>Approved Powder Actuated Fastener Tools</i> Other changes include: <ul style="list-style-type: none"> Updated Section 3.1.3 Added Section 5.3, <i>Forms</i> 	

UPF Hot Work Permit

- Updated references
- Updated acronyms and definitions
- Editorial changes

Previous revisions on record

CONTENTS

1.0 INTRODUCTION.....	5
1.1 Purpose	5
1.2 Scope	5
2.0 RESPONSIBILITIES	6
2.1 UPF Site Manager	6
2.2 UPF Project Superintendent	6
2.3 UPF Responsible Superintendent.....	6
2.4 Permit Authorizing Individual	6
2.5 BNI Fire Protection Engineer, BNI Fire Protection Field Engineer or Delegate.....	7
2.6 Hot Work Operator.....	7
2.7 Fire Watch	7
3.0 Process	7
3.1 Establishing Permissible Areas.....	8
3.2 Performing Hot Work	12
4.0 RECORDS	14
5.0 REFERENCES.....	14
5.1 Source References	14
5.2 Interfacing References.....	14
5.3 Forms	15
6.0 SUPPLEMENTAL INFORMATION	15
APPENDIX A Acronyms and Definitions	16
APPENDIX B Equipment/Materials within a Permissible Area.....	19
APPENDIX C Hot Work Permit Decision Tree	20
APPENDIX D Fire Watch Decision Tree.....	21
APPENDIX E Hot Work 35-Foot-Rule	22
APPENDIX F Approved Powder-Actuated Fastener Tools	23

1.0 INTRODUCTION

1.1 Purpose

This Procedure establishes and implements controls to prevent fires as a result of Hot Work at the Uranium Processing Facility (UPF) and establishes areas authorized by management where Hot Work is permitted.

1.2 Scope

This Procedure applies to UPF activities that involve the following Hot Work processes and conforms with NFPA 51B, *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work (2014)*:

- Welding (excludes autogenous orbital tube welding)
- Cutting with open flame, torches, or other means that generate sparks
- Use of open flame (including torch-applied roofing)
- Grinding (with disks, wheels, or other power-operated tools)
- Use of CAD/Thermit welds (such as for bonding of electrical grounding conductors to metal substrates)
- Other spark- or molten metal-producing activities defined as Hot Work performed in either Designated Areas or Permit-Required Areas

This Procedure shall not apply to the following processes:

- Use of cutting tools that result in an unintended spark(s)
- Electric soldering irons
- Electric heat guns

Hot Work on systems that contain or have contained flammable or Combustible Liquids or Flammable Gases is prohibited. Exception: Hot Work on lines containing HVAC refrigerant shall be allowed with prior evaluation and approval by Bechtel National, Inc. (BNI) Environmental, Safety, and Health (ES&H).

Powder-Actuated Fastener operations shall be evaluated to verify the operation:

- Is incapable of generating mobile sources of ignition
- Does not generate sustained heat sufficient to support combustion of Combustible Materials
- Only poses a hazard in flammable atmospheres (painting/coatings work).

For a list of powder-actuated tools that have been evaluated and determined to not require a Hot Work Permit, refer to **Appendix F, Approved Powder-Actuated Fastener Tools**. Should another model of powder actuated tool need to be used, it will require a Hot Work Permit until an evaluation is performed, and the evaluation determines and documents that the tool does not require a Hot Work Permit.

Applicability to subcontractor employees is as specified in subcontract language.

2.0 RESPONSIBILITIES

2.1 UPF Site Manager

The Site Manager is responsible for ensuring the requirements of this Procedure are properly implemented.

2.2 UPF Project Superintendent

The Project Superintendent is responsible for the following:

- Overall safe Hot Work operations
- Ensuring all individuals involved in the Hot Work operations, including subcontractors, are familiar with and implement the provisions of this Procedure
- Designating Permit Authorizing Individuals (PAIs)

2.3 UPF Responsible Superintendent

The Responsible Superintendent (or designee) is responsible for the following:

- Ensuring individuals involved in Hot Work operations are trained in the safe operation of their equipment and in the safe use of the process
- Ensuring workers involved in Hot Work operations are:
 - Trained to the requirements of this Procedure
 - Aware of the inherent risks involved and understand the emergency procedures in the event of fire

2.4 Permit Authorizing Individual

The PAI is responsible for the following:

- Considering the safety of the Hot Work operator and Fire Watch with respect to Personal Protective Equipment (PPE) for other special hazards beyond Hot Work
- Determining site-specific flammable materials, hazardous processes, or other potential fire hazards that are present or likely to be present in the work location
- Ensuring the protection of combustibles from ignition
- Determining when and where Hot Work can be performed
- Ensuring fire protection and extinguishing equipment are properly located at the work area
- Establishing Permissible Areas for Hot Work operations
- Assigning a qualified Fire Watch for Hot Work operation in Permit-Required Areas
- In Designated Areas where a Fire Watch is not required, ensuring final check of the Hot Work location approximately 30 minutes after the completion of Hot Work operations to detect and extinguish smoldering fires
- Verifying conditions detailed in **Appendix E, Hot Work 35-Foot Rule, Notes 3A and 3B** have been implemented prior to starting hot work activities

2.5 BNI Fire Protection Engineer, BNI Fire Protection Field Engineer or Delegate

The BNI Fire Protection Engineer (FPE), BNI Fire Protection Field Engineer (FPFE) or Delegate is responsible for the following:

- Approving exceptions or enhancements to the requirements annotated in this document
- Reviewing CFN-1137, *UPF Designated Area Tracking and Inspection Log*, monthly

2.6 Hot Work Operator

Hot Work Operator(s) are responsible for the following:

- Knowing and understanding the environment in which the work is to be performed, and complying with the permit generated by this Procedure
- Knowing and understanding what PPE is appropriate for their work environment
- Knowing the most current safe operation practices for their equipment
- Receiving PAI approval before starting Hot Work operations
- Ceasing Hot Work operations if unsafe conditions develop
- Notifying the PAI for reassessment of the situation if unsafe conditions develop

2.7 Fire Watch

A Fire Watch shall perform duties in accordance with UPF-CP-227, *UPF Safety Watches*, with emphasis on the following:

- Knowing and understanding the environment in which the work is to be performed, and complying with the permit generated by this Procedure
- Knowing and understanding what PPE is appropriate for their work environment
- Stopping the Hot Work operations if unsafe conditions develop
- Having fire-extinguishing equipment readily available and be trained in its use

NOTE: Refer to diagrams shown in **Appendix E**. There can be two types of Fire Watches for a given job: Personnel/clothing observation and property observation.

3.0 PROCESS

NOTE 1: *Welding Blanket, Welding Curtains, and Welding Pads are approved. Fire resistant plastic sheeting is not approved for Hot Work operations.*

NOTE 2: *Exceptions to the following requirements may be made based on approval from the BNI FPE/BNI FPFE and documented on the Hot Work Permit.*

UPF Hot Work Permit**3.1 Establishing Permissible Areas****Permit Requestor**

- 3.1.1 Ensure a Job Hazard Analysis related to a work package is completed, as applicable, in accordance with Y17-95-64-823, *UPF Field Level Hazard Assessment/Job Hazard Analysis (FLHA/JHA) Process*.

NOTE: *Appendix C, Hot Work Permit Decision Tree, is provided to determine if a Hot Work Permit is necessary.*

- 3.1.2 Ensure CFN-1139, *UPF Hot Work Permit*, or CFN-1137, *Establishment of a Designated Area*, Section 1, has been initiated for Hot Work Area inspection. Form CFN-1139 shall be displayed prominently outside the Hot Work Permit Area boundary.

Permit Authorizing Individual

- 3.1.3 Ensure an alternative method to Hot Work has been considered to protect combustibles from ignition. **IF** the scope of work and the tools used to conduct Hot Work could result in possible travel of mobile sources of ignition (e.g., slag, sparks, spatter) farther than 35 feet, **THEN** the PAI is permitted to increase the 35-foot boundary with approval from the BNI FPE/BNI FPFE and documented on CFN-1139. Ensure the distances and areas addressed in **Sections 3.1.7** through **3.1.14** are extended.

IF the scope of work and the tools used to conduct Hot Work are known to be incapable of generating mobile sources of ignition capable of leaving the immediate area of the applied Hot Work (e.g., electric soldering irons, electric heat guns, and powder actuated fasteners [refer to **Appendix F**]), **THEN** the PAI is permitted to reduce the 35-foot boundary with approval from the BNI FPE/BNI FPFE and documented on CFN-1139. **THEN** ensure the distance and areas addressed in **Sections 3.1.7** through **3.1.14** are reduced.

NOTE 1: *Sections 3.1.4 through 3.1.23 may be performed in any order.*

NOTE 2: *Hot Work operations that might fall into the category where the 35-Foot Rule could be enlarged include, but are not limited to, elevated Hot Work Areas and windy conditions.*

- 3.1.4 Ensure the Hot Work equipment to be used is in satisfactory operating condition.
- 3.1.5 **IF** floors (including temporary flooring material) are combustible, **THEN** perform any the following:
- Keep floors wet
 - Protect with Welding Blanket or Welding Pad

WARNING

The possibility of electrocution or serious physical harm exists where an employee is working with or near electrical equipment that is in contact with moisture.

UPF Hot Work Permit

IF floors have been wetted down **AND** personnel are operating arc welding equipment or cutting equipment, **THEN** ensure personnel will be protected from possible shock.

- 3.1.6 **IF** Combustible Materials (e.g., clippings, wood shavings, or textile fibers) are on the floor within the Hot Work Area, **THEN** remove the material from the floor.

NOTE: *When Hot Work is performed at an elevated level, it should be noted that sparks or slag can fall at a trajectory and land farther than 35 feet horizontally from a point directly under the Hot Work operator.*

- 3.1.7 Ensure all combustibles that can be relocated are moved at least 35 feet in all directions away from the Hot Work operation.

- 3.1.8 **IF** relocation of combustibles is impractical, **THEN** ensure combustibles are protected by any of the following:

- Welding Blanket
- Welding Curtain
- Welding Pad

Welding Curtains shall be placed so as to prevent openings at the junction of the Welding Curtains. Welding Blankets shall be placed at the bottom of Welding Curtains to close the gap between the Welding Curtain and the non-combustible floor. The Welding Blanket shall curve to the inside of the Welding Blanket perimeter, not to the outside.

Notes 3A and 3B in **Appendix E, Hot Work 35-Foot Rule**, detail the acceptable method of protecting combustibles within the 35-foot radius. This is not considered a modification to the 35-foot rule. When this methodology is implemented, an authorized PAI must sign CFN-1139 under the section requiring PAI work control verification in accordance with **Appendix E, Notes 3A and 3B**.

- 3.1.9 **IF** floor and wall openings are present within 35 feet of the work location, **THEN** ensure the openings are protected as noted in the Hot Work Permit.

- 3.1.10 **IF** ducts and conveyor systems that might carry sparks to distant combustibles are present within the work site, **THEN** protect the ducts and conveyor systems by shielding, shut down, or both.

- 3.1.11 **IF** Hot Work is done near any of the following:

- Walls
- Partitions
- Ceilings
- Roofs of combustible construction

THEN ensure they are protected by any of the following:

- Welding Curtain
- Welding Blanket
- Welding Pad

UPF Hot Work Permit

- 3.1.12 **IF** Hot Work is done on one side of the following **AND** combustibles are on the other side of the following:
- Wall
 - Partition
 - Ceiling
 - Roof
- THEN** perform one of the following:
- Ensure precautions have been taken to prevent ignition of combustibles on the other side by relocating the combustibles
- OR**
- Ensure a Fire Watch is provided on the side opposite from where the work is being performed
- 3.1.13 Ensure Hot Work will **NOT** be attempted on a partition, wall, ceiling, or roof that has a combustible covering or insulation.
- 3.1.14 Ensure Hot Work will **NOT** be attempted on walls or partitions of combustible sandwich-type panel construction.
- 3.1.15 **IF** Hot Work is close enough to cause ignition by conduction while performing Hot Work on pipes or other metal that is in contact with combustibles, such as, but not limited to the following:
- Combustible walls
 - Combustible partitions
 - Combustible ceilings
 - Combustible roofs
- THEN** prohibit Hot Work from being performed.
- ENSURE** Hot Work on one side of a metal divider shall not transfer heat through the metal such that items on the other side of the divider sustain thermal damage (e.g., melting of insulation on electrical conductors, thermal decomposition).
- 3.1.16 Ensure a fully-charged and inspected 10-pound (minimum), Class ABC dry chemical (or equivalent) fire extinguisher is available at the work area.
- 3.1.17 Identify sprinkler heads and smoke detectors in close proximity to the Hot Work.
- 3.1.18 **IF** Hot Work will be performed in an area protected by a sprinkler system when the system is impaired; **THEN** the requirements of National Fire Protection Association (NFPA) 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, must be met; and ensure approval by the BNI FPE/BNI FPFE (or designee) is documented on CFN-1139.

CAUTION

Smoke detectors and sprinkler heads can be damaged by contact with residue, heat, fumes, and smoke generated by Hot Work operations. Heat from the Hot Work operation may damage the metal alloy fusible link within the sprinkler head and affect its activation.

Consult the BNI FPE/BNI FPFE to ensure sprinkler heads and fire detection systems are adequately protected within the Hot Work Area and documented on CFN-1139.

- 3.1.19 Ensure the operator and nearby personnel are suitably protected against dangers such as heat, sparks, and slag. Refer to the Job Hazard Analysis or UPF-CP-205, *Personal Protective Equipment and Safe Work Apparel*, for the appropriate selection to minimize the potential for ignition, burning, trapping hot sparks, and electric shock.

NOTE: **Appendix D, Fire Watch Decision Tree**, is provided to determine when a Fire Watch is necessary. **Appendix E** demonstrates the Hot Work 35-Foot Rule.

- 3.1.20 Designate a Fire Watch for the Hot Work operation.

NOTE: *In certain situations, additional Fire Watches may be necessary (e.g., line-of-sight or Travel path to perform Fire Watch duties are impeded, Hot Work performed near open shafts, elevated heights, or where sparks can travel through spaces such as openings).*

IF sparks or slag produced by the Hot Work operation cannot be directly observed by the initial Fire Watch, **THEN** ensure an additional Fire Watch is provided.

- 3.1.21 **IF** Hot Work will be performed in a Permit-Required Area, **THEN** ensure the inspection of the work location is documented and approved on CFN-1139.
- **IF** the permit will extend beyond the issued shift, **THEN** re-inspect the Permit-Required Area to validate the Hot Work Permit
 - Post the Hot Work Permit at the job location
 - **WHEN** the Permit-Required Area closes or is no longer valid, **THEN** turn CFN-1139 in to the UPF Document Management Center (DMC)

- 3.1.22 **IF** Hot Work will be performed in a Designated Area, **THEN** ensure the inspection of the work location is documented and approved on Section 1 of CFN-1137.
- Submit CFN-1137 to the Project Superintendent (or designee) for approval
 - Ensure CFN-1138, *UPF Designated Area for Hot Work Placard*, has been completed
 - Post CFN-1138 at all access points of a Designated Area
 - **WHEN** the Designated Area closes or is no longer valid, **THEN** turn CFN-1137 in to the UPF DMC

UPF Hot Work Permit

BNI Fire Protection Field Engineer

- 3.1.23 Indicate and approve modifications to the 35-Foot Rule on CFN-1139.
- 3.1.24 Approve Hot Work operations performed in an area protected by a sprinkler system when the system is impaired on CFN-1139.
- 3.1.25 Provide direction for adequate protection of sprinkler heads and fire detection systems within the Hot Work Area and document on CFN-1139.

3.2 Performing Hot Work

- 3.2.1 The PAI shall inspect the area at least twice per shift - once when the hot work permit is issued and again following the lunch break. The intent is to observe the area while the Hot Work Permit is in effect to **ENSURE** conditions defined in the Scope of Work section of CFN-1139 are being maintained. **IF** the Scope of Work changes, **THEN** work shall be stopped until the PAI **ENSURES** appropriate safety measures are in place for the new/revised Scope of Work.

IF the work is temporarily suspended, **THEN** the PAI shall document the time work is stopped in the appropriate section of CFN-1139. Before work can be re-started, the PAI shall ensure conditions are appropriate for work to proceed in accordance with this Procedure. The PAI shall **DOCUMENT** the re-start time in the appropriate section of CFN-1139.

NOTE: *The temporary suspension of hot work activities is intended for situations where the activities have to be paused for a long period of time where it's infeasible to maintain control of the area in the absence of active hot work activities. For example, crew is tasked to weld pipe support in the morning, inspection is scheduled after lunch and some hot work may have to be performed to finalize the weld toward the end of the shift. In this example, the PAI may stop the hot work activities, as documented on CFN-1139, between the time the welding is complete in the morning and the inspection in the later afternoon. The hot work activities can be restarted by the PAI following the inspection if additional hot work is required to finalize the weld. When hot work activities are paused by the PAI, all controls must remain implemented for at least 30 minutes following the conclusion of hot work activities. Multiple hot work suspension and restarts are acceptable with the approval of the PAI.*

Permit Authorizing Individual

- 3.2.2 Ensure Hot Work is coordinated so operations that could potentially expose combustibles to ignition sources is prohibited during Hot Work operations.
- 3.2.3 **IF** Hot Work will be performed in a Designated Area, **THEN** ensure the area is inspected in accordance with CFN-1137, Section 2, *Permit Authorizing Individual Inspection Criteria*.
- 3.2.4 In a Designated Area, perform final check of the Hot Work location 30 minutes after the completion of Hot Work operations to detect and extinguish smoldering fires.

UPF Hot Work Permit

- 3.2.5 In a Permit-Required Area, close CFN-1139 once the Hot Work operation and Fire Watch responsibilities are complete.

Hot Work Operator

- 3.2.6 The Hot Work Operator shall follow the guidelines set forth in UPF-CP-205.
- 3.2.7 Ensure the following:
- The requirements of **Steps 3.1.9** and **3.1.10** are met
 - Ventilation is working properly
 - Equipment is in working order
- 3.2.8 **IF** Hot Work will be performed in a Hot Work Permit-Required Area, **THEN** ensure the area has been inspected by a PAI.
- 3.2.9 **IF** the PAI approves of the Permissible Area, **THEN** perform Hot Work in accordance with the applicable work package.

NOTE: *Fire Screens on the inlet to local exhaust may be used if fumes contain sparks.*

- 3.2.10 Use exhaust ventilation devices (e.g., moveable ducts/hoods or portable exhaust units) to remove welding fumes or other airborne contaminants arising from Hot Work operations as near to the source as possible as determined by ES&H.
- 3.2.11 Ensure work is confined to the area or equipment specified.
- 3.2.12 **IF** conditions covered by a Hot Work Permit change during Hot Work operations, **THEN** perform the following:
1. Stop Work
 2. Notify the PAI
 3. **IF** the conflicting condition cannot be corrected, **THEN** request the PAI to close the permit and initiate a new Hot Work Permit with additional controls

Fire Watch

NOTE: *Observations continue while Hot Work is in progress or until the assigned Fire Watch is relieved by another qualified Fire Watch. All Fire Watches assigned to the Hot Work, including relief Fire Watches, must review and sign CFN-1139.*

- 3.2.13 The Fire Watch shall follow the guidelines set forth in UPF-CP-205.
- 3.2.14 A single Fire Watch can support multiple co-located Hot Work operations as long as:
- The Hot Work activities are within the same permitted location and covered by a single Hot Work Permit
 - The Hot Work operations can be observed from the same observation position, and must have clear line-of-sight to the operation

UPF Hot Work Permit

- Clear communication exists between each Hot Work operation and the Fire Watch
- The Fire Watch has clear access to the Hot Work operation to allow for quick response

3.2.15 In a Permit-Required Area, observe Hot Work operations to ensure fire safe conditions, as specified in the Hot Work Permit, are maintained.

NOTE: *The duration of the Fire Watch may be extended if the PAI determines the fire hazards warrant the extension.*

3.2.16 Remain in the area for at least 30 minutes after the completion of Hot Work operations to detect and extinguish smoldering fires.

3.2.17 Close CFN-1139 once the Hot Work operation and Fire Watch responsibilities are complete. All individuals involved in the Hot Work process are able to close CFN-1139 once the Hot Work operation and Fire Watch responsibilities are complete.

4.0 RECORDS

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

The following records are generated:

Record or Form Number	Record Title	System/ Location	Document Type
CFN-1137	<i>UPF Designated Area Tracking and Inspection Log</i>	InfoWorks	DAIR
CFN-1139	<i>UPF Hot Work Permit</i>	InfoWorks	HWP

5.0 REFERENCES

5.1 Source References

29 CFR 1926, *Safety and Health Regulations for Construction*

American National Standards Institute (ANSI)/ASC Z49.1-2021, *Safety in Welding, Cutting, and Allied Processes*

PL-CM-801768-A001, *Construction Management Plan and Execution Strategy*

PL-SH-801768-A007, *Bechtel National, Inc. Uranium Processing Facility Environmental, Safety and Health Plan*

UPF-CP-211, *Fire Prevention and Protection*

Y17-95-64-800, *UPF Construction/Startup Work Control Program*

5.2 Interfacing References

ASTM E681, *Standard Test Method for Concentration Limits of Flammability of Chemicals (Vapors and Gases)*

<i>UPF Hot Work Permit</i>

NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*

NFPA 51B, *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*

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

UPF-CP-227, *UPF Safety Watches*

Y15-95-800, *UPF Document Management*

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

5.3 Forms

CFN-1137, *UPF Designated Area Tracking and Inspection Log*

CFN-1138, *UPF Designated Area for Hot Work Placard*

CFN-1139, *UPF Hot Work Permit*

6.0 SUPPLEMENTAL INFORMATION

Appendix A, *Acronyms and Definitions*

Appendix B, *Equipment/Materials within a Permissible Area*

Appendix C, *Hot Work Permit Decision Tree*

Appendix D, *Fire Watch Decision Tree*

Appendix E, *Hot Work 35-Foot Rule*

Appendix F, *Approved Powder Actuated Fastener Tools*

APPENDIX A Acronyms and Definitions

(Page 1 of 3)

Acronyms

BNI - Bechtel National, Inc.	5
DMC - UPF Document Management Center	11
ES&H - Environmental, Safety, and Health	5
FLHA - Field Level Hazard Assessment.....	8
FPE - Fire Protection Engineer	7
FPFE - Fire Protection Field Engineer.....	7
JHA - Job Hazard Analysis.....	8
NFPA - National Fire Protection Association	10
PAI - Permit Authorizing Individual	6
PPE - Personal Protective Equipment.....	6
UPF - Uranium Processing Facility.....	5

Definitions

35-Foot Rule	The initial radius length extending out and encircling the Hot Work on a horizontal and vertical plane for 35 feet or less to non-Combustible Material (e.g., concrete wall or floor) and can be modified (i.e., distance extended or reduced) by the PAI based upon Hot Work operations and/or site conditions.
Combustible Liquids	Liquids having a flashpoint at or above 100°F.
Combustible Material	A material that, in the form in which it is used and under the conditions anticipated, has the characteristic to ignite and burn.
Designated Area	A specific location designed and approved for Hot Work operations that is maintained fire-safe, such as a maintenance shop or a detached outside location, that is of noncombustible or fire-resistive construction, essentially free of combustible and flammable contents, and suitably segregated from adjacent areas (NFPA 51B, <i>Standard for Fire Prevention During Welding, Cutting, and Other Hot Work</i>).
Fire Watch	A designated individual trained in specific Fire Watch duties and dedicated to both worker safety and property loss prevention for a specified duration. Performs Fire Watch duties when assigned exclusively; no other duties shall interfere.

APPENDIX A Acronyms and Definitions

(Page 2 of 3)

Flammable Gas	A material that is a gas at 68°F (20°C) or less at 14.7 pounds per square inch atmosphere (psia) of pressure which: <ul style="list-style-type: none"> • Is ignitable at 14.7 psia when in a mixture of 13 percent or less by volume with air; or • Has a flammable range at 14.7 psia with air of at least 12 percent, regardless of the lower limit. The limits specified shall be determined at 14.7 psi of pressure and a temperature of 68°F in accordance with ASTM E681, <i>Standard Test Method for Concentration Limits of Flammability of Chemicals (Vapors and Gases)</i>
Flammable Liquids	Liquids having a flashpoint below 100°F.
Hot Work	Work involving burning, welding, grinding, or a similar operation that is capable of initiating fires or explosions (Does not include the use of electric heat guns, electric soldering irons, or cutting tools that result in an unintentional spark)
Hot Work Area	Encompasses the area defined by the 35-Foot Rule or modified by the PAI. (Does not include the use of electric heat guns, electric soldering irons, or cutting tools that result in an unintentional spark)
Hot Work Permit	A permit issued by the PAI to authorize work involving burning, welding, or a similar operation capable of initiating fires or explosions in a non-Designated Area, which is based on implementing preventative actions and precautions.
Permissible Area	A Designated Area or Permit-Required Area as defined by this Procedure.
Permit Authorizing Individual (PAI)	The individual designated by management to authorize Hot Work Permits.
Permit-Required Area	Any location other than a Designated Area that is approved for Hot Work and is made fire-safe by removing or protecting combustibles from ignition sources.
Welding Blanket	A heat-resistant fabric listed, approved, and designed to be placed in the vicinity of a Hot Work operation; intended for use in horizontal applications with light to moderate exposures such as that resulting from chipping, grinding, heat treating, sand blasting, and light horizontal welding; designed to protect machinery and prevent ignition of combustibles such as wood that are located adjacent to the underside of the blanket.

APPENDIX A Acronyms and Definitions

(Page 3 of 3)

Welding Curtain	A heat-resistant fabric listed, approved, and designed to be placed in the vicinity of a Hot Work operation, intended for use in vertical applications with light to moderate exposures such as that resulting from chipping, grinding, heat treating, sand blasting, and light horizontal welding; designed to prevent sparks from escaping an area. A heat-resistant fabric listed, approved, and designed to be placed in the vicinity of a Hot Work operation, intended for use in vertical applications with light to moderate exposures such as that resulting from chipping, grinding, heat treating, sand blasting, and light horizontal welding; designed to prevent sparks from escaping an area.
Welding Pads	A heat-resistant fabric listed, approved, and designed to be placed directly under a Hot Work operation such as welding or cutting, intended for use in horizontal applications with severe exposures such as that resulting from molten substances or heavy horizontal welding; designed to prevent the ignition of combustibles that are located adjacent to the underside of the pad.

APPENDIX B

Equipment/Materials within a Permissible Area

The list below is an example of items and is not all-inclusive. Each area is required to be evaluated by a PAI using their best judgment on a case-by-case basis.

The following is a partial list of example items that would be allowed within a Permissible Area and still be considered essentially free of combustibles:

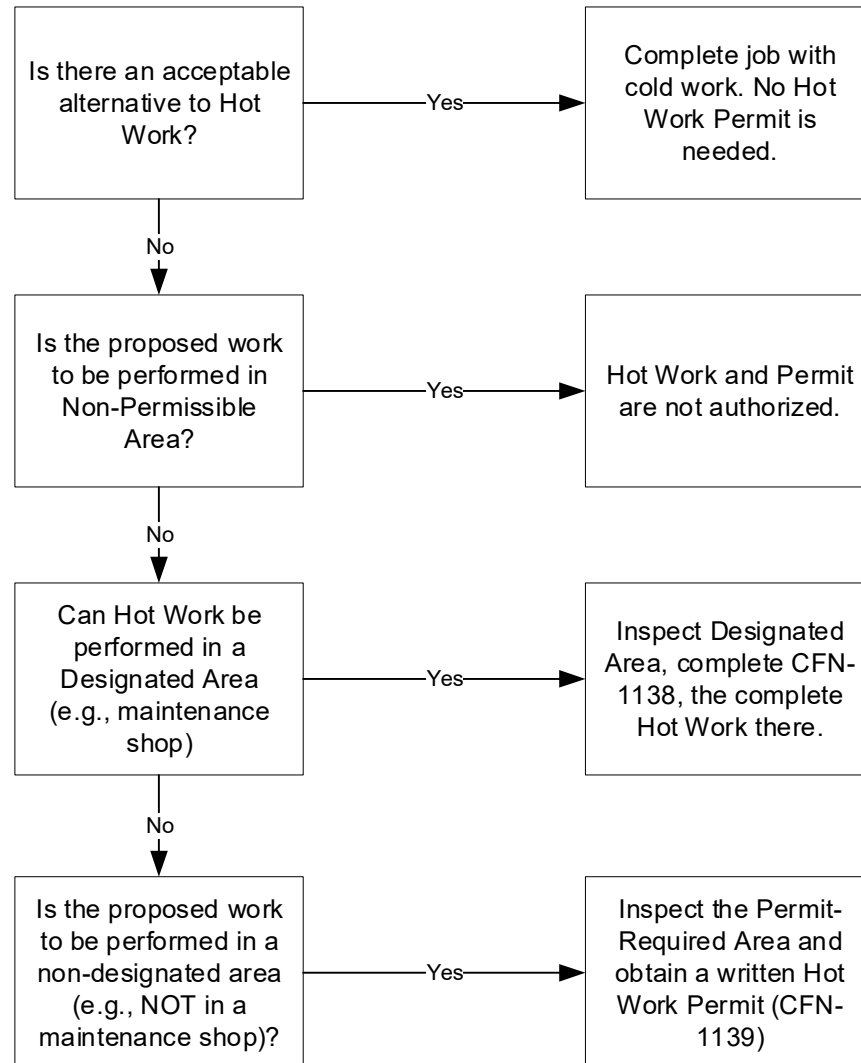
- Gas lines for Hot Work equipment
- Air hoses for Hot Work equipment
- Electric cords/cables for Hot Work equipment
- Non-combustible walls (concrete, gypsum wallboard on metal studs, steel partitions to segregate a welding area) without openings or cracks in the construction for at least a height of five feet above the Hot Work surface
- Non-combustible floor (concrete, earth, steel) without openings or cracks to floor/area below, as applicable
- Heavy timber (greater than a typical 4 inches x 4 inches) necessary to support material
- Tools (e.g., wire brush, soap stone, MIG pliers, screw drivers, chipping hammer, torpedo level) necessary to perform Hot Work
- Bollards/candlestick stands/cones, barricade tape/chain/rope, and signage/tags necessary to support Hot Work
- Fire-resistive lumber

The following list is to provide guidance of combustibles that are prohibited when uncovered or less than 35 feet from Hot Work within a Permissible Area:

- Cardboard
- Paper and binders
- Shrink-wrap or wind screening material that is not clearly marked or labeled as meeting the listing or approval for Hot Work operations; contact the BNI FPE/BNI FPFE or ES&H with questions
- Fire-resistant/fire-retardant plastic sheeting
- Combustible/Flammable Liquids and compressed gases
- Wooden materials not treated with fire retardants
- Plastic products (e.g., trash cans, five-gallon buckets)

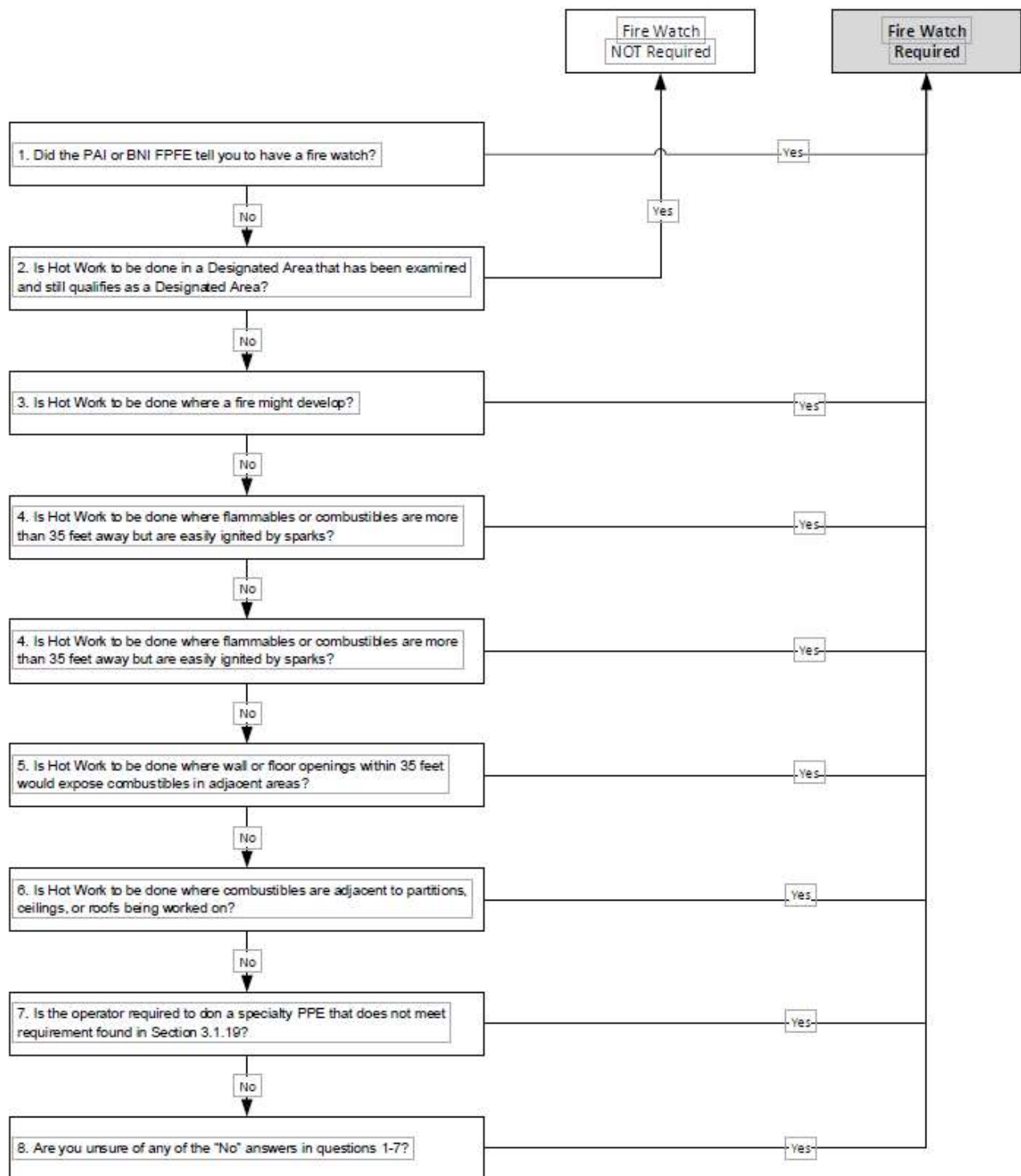
APPENDIX C

Hot Work Permit Decision Tree



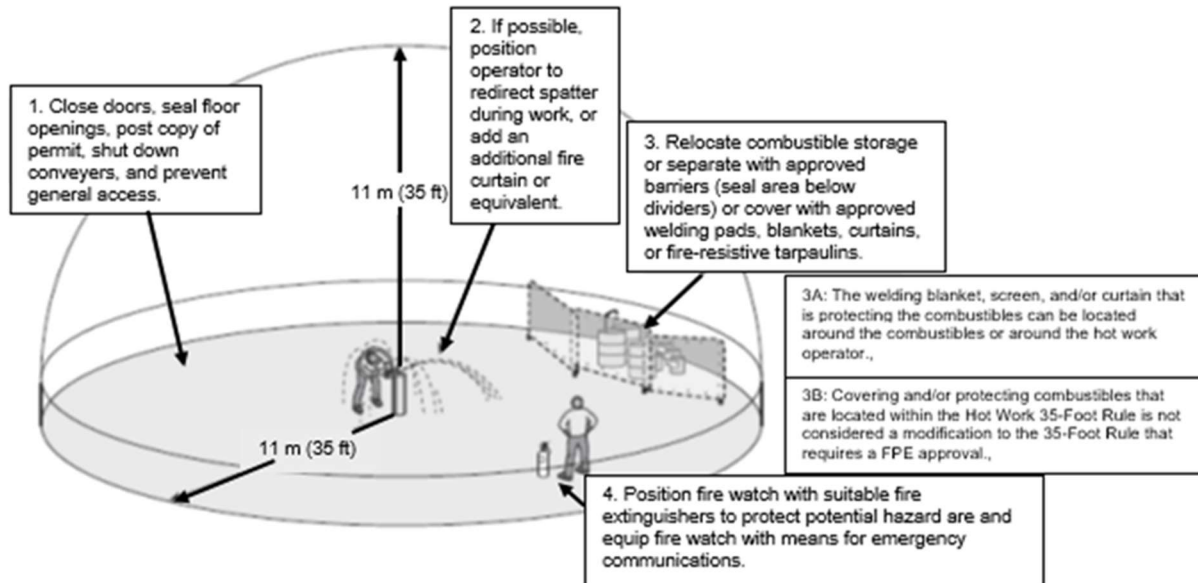
APPENDIX D

Fire Watch Decision Tree

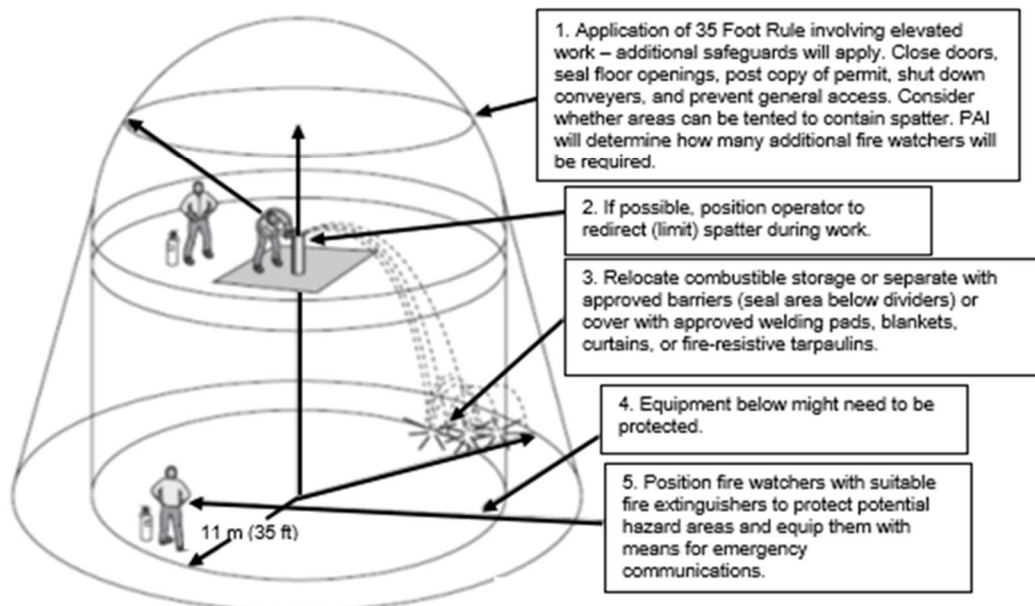


APPENDIX E

Hot Work 35-Foot-Rule



35 Foot Rule Illustrated



Example of Where Multiple Fire Watches Are Needed

APPENDIX F

Approved Powder-Actuated Fastener Tools

The following powder actuated fastener tools have been evaluated and determined not to require a Hot Work Permit:

- Hilti Model DX2
- Hilti Model DX 5
- Hilti Model DX 9-ENP
- Hilti Model DX76-MX