

UCOR BLUE SHEET COVER PAGE

Blue Sheet Review

ID Number:	BS-0017		
UCOR Level 1 Mgr:	Eric Abelquist		
Topical Area or Facility Name:	Fire Protection Program and Baseline Needs Assessment		
Blue Sheet Classification:	<input checked="" type="checkbox"/>	Status 1: Document(s) adopted as is	
	<input type="checkbox"/>	Status 2: Document(s) adopted with minor changes	
	<input type="checkbox"/>	Status 3: Document(s) not adopted; major changes required	
	<input type="checkbox"/>	Status 4: Document(s) superseded	Superseding Doc #:
	<input type="checkbox"/>	Status 5: Document(s) retired	
Needed Updates/Revisions	<p>See the latest revision of Management Directive DIR-UCOR-600 for a crosswalk of non-intent terminology changes (e.g. company name and logo, organization titles).</p> <p>UCOR has an implementation schedule/plan to revise the Fire Protection Program, associated procedures and Baseline Needs Assessments to be compliant with contract requirements specified in DOE O 420.1C, Chg 3.</p>		

Unreviewed Safety Question (USQ) (if applicable)

USQ Review	<input checked="" type="checkbox"/>	Excluded	Reason for Exclusion:	Non-intent changes do not require USQ screening.
	<input type="checkbox"/>	Required	Screening #:	

Approvals

Blue Sheet Reviewer:	ROBERT DESCHAMBEAULT (Affiliate) Robert Deschambeault Print / Sign	Digitally signed by ROBERT DESCHAMBEAULT (Affiliate) Date: 2022.04.08 11:38:21 -04'00' 4/8/2022 Date
Level 1 Manager:	ERIC ABELQUIST (Affiliate) Eric Abelquist Print / Sign	Digitally signed by ERIC ABELQUIST (Affiliate) Date: 2022.04.08 12:09:24 -04'00' 4/8/2022 Date

Documents covered by this Blue Sheet (or indicate attachment with information)

Document #:	Document Title	Rev
PPD-FP-2001	Fire Protection Program Description	8
UCOR-4094	Baseline Needs Assessment for the East Tennessee Technology Park	3
UCOR-4960	Fire Department Baseline Needs Assessment UCOR ORNL Facilities	1

UCOR-4975	Fire Department Baseline Needs Assessment UCOR Y-12 Facilities	1
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OWNER: Chief of Staff	DIR-UCOR-600	REVISION: 0
SUBJECT MATTER AREA: Contract Transition	PREPARER: Samantha Dolynchuk	Page 1 of 3
DIRECTIVE	CONCURRENCE/DATE: LINDA RAULSTON (Affiliate)	Digitally signed by LINDA RAULSTON (Affiliate) Date: 2022.05.11 09:19:37 -04'00'
TITLE: TRANSITION OF UCOR PERFORMANCE DOCUMENTS	APPROVED BY/DATE: SAMANTHA DOLYNCHUK (Affiliate)	Digitally signed by SAMANTHA DOLYNCHUK (Affiliate) Date: 2022.05.10 09:08:12 -04'00'
USQD <input checked="" type="checkbox"/> UCD <input type="checkbox"/> CAT X <input type="checkbox"/> EXEMPT <input type="checkbox"/>	EFFECTIVE DATE:	5/23/22
USQD/UCD/CAT X No: USQD-MS-DIRUCOR600-1807	REQUIRED REVIEW DATE:	5/23/25

PURPOSE

This directive formalizes the adoption of UCOR LLC, an Amentum-led partnership with Jacobs, performance documents by United Cleanup Oak Ridge LLC (UCOR). It also serves as an authorizing change mechanism for documents that require administrative, non-intent changes to reflect the new contractual relationship between new UCOR and the U.S. Department of Energy Oak Ridge Office of Environmental Management (DOE OREM) eliminating the need for individual change records for each document. The following statement will be added to the Performance Document Database ([Forms and Procedures \(ettp.gov\)](http://formsandprocedures.ettp.gov)) to notify document users that performance documents have been blue sheeted and accepted:

All performance documents have been accepted per Management Directive
DIR-UCOR-600.

The Blue Sheeting process, including this Management Directive, will be briefed at key meetings including the President's Accident Prevention Council (PAPC), Executive Plan of the Week, Chief Operating Officer's Morning Operations Calls, and an Expanded Staff Meeting that will be held on May 11, 2022. This Management Directive will be flowed down to the entire UCOR workforce during the Safety Start that will be held on May 23, 2022. Additionally, this Management Directive will be assigned as required reading for the entire UCOR workforce.

SCOPE

This directive applies to all performance documents controlled by the UCOR Performance Documents Group. This directive also applies to the UCOR nuclear facilities' safety basis documents controlled by Nuclear and Criticality Safety, Security documents controlled by Security and Emergency Services, and any UCOR-numbered documents that were submitted as Transition Deliverables.

DIRECTIVE

This directive is effective at the start of Task Order 2, Contract Implementation. Existing documents will be updated to reflect the elements herein within one year of the start of Task Order 1 Transition (February 28, 2023). Procedures and documents are to be considered suitable and useable for the safe accomplishment of assigned work until that time.

While the technical content of a performance document remains accurate, references within a given document may not immediately match newly assigned UCOR titles, UCOR logo's, company names, or other contractually-

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related information. This directive provides direction for using incumbent UCOR terminology compared to new UCOR terminology in order to allow employees to achieve verbatim compliance without work stoppage.

INTERPRETATIONS

The crosswalk in Attachment A lists the previous UCOR organization structure with the new UCOR organizational equivalent. Document users encountering an incumbent UCOR organization name shall interpret it as if the organizational names in Attachment A have been updated in the document.

Some performance documents refer to forms that contain UCOR LLC, an Amentum-led partnership with Jacobs, or URS | CH2M Oak Ridge LLC. These forms are acceptable for continued use until changes can be made by the form owners, and incumbent UCOR references shall be interpreted as if they refer to United Cleanup Oak Ridge LLC or UCOR.

Some performance documents may refer to other performance documents by number and title. Some of these references may be affected by the contract transition or a previous organizational restructuring. These cases shall be interpreted by their current number and title.

CHANGE PROCESS

Performance documents requiring administrative changes only (i.e., those identified in Interpretations) will be processed under a blanket administrative change and authorized by this directive as change authorization.

Changes to documents other than the administrative changes listed in Attachment A will be performed in accordance with *Performance Document Process* (PROC-OS-1107).

Changes to safety basis documents controlled by Nuclear and Criticality Safety will be changed in accordance with *Safety Documentation for Hazard Category 2 & 3 Nuclear Facilities* (PROC-NS-1002) and *Safety Documentation for Less than Hazard Category 3 Nuclear and Non-Nuclear Facilities* (PROC-NS-1009).

POINTS OF CONTACT

Contact the appropriate functional or line manager for guidance related to the content of a procedure or document or the information on Attachment A. For questions related specifically to the performance document process, contact the Information, Technical Editing & Records Manager.

REVISION LOG			
Revision	Effective Date	Description of Changes	Pages Affected
0	5/23/22	Initial release.	All

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Attachment A
Crosswalk of Organizational Terminology for UCOR Transition

UCOR TRANSITION REPLACEMENT TERMINOLOGY TABLE	
UCOR (current) Organization Terminology	New UCOR Organization Terminology
UCOR an Amentum-led partnership with Jacobs	United Cleanup Oak Ridge LLC
URS CH2M Oak Ridge LLC	United Cleanup Oak Ridge LLC
East TN Technology Park (ETTP) contract	Oak Ridge Reservation Cleanup contract (ORRCC)
Contract number: DE-SC-0004645	Contract number: 89303322DEM000067
Oak Ridge Reservation (ORR) Environmental Cleanup	ORRCC Site Integration & Cleanup
President and Project Manager	President and Chief Executive Officer (CEO)
Environmental Services	Environmental Services & Regulatory Management
Heritage Center Enterprise	Heritage Center Area Project
Field Characterization	Characterization Services
D&D Waste Integration	Waste Integration
Waste Management Enterprise	Waste Disposition
Nuclear Operations	ORNL Waste Operations
Waste Disposition and TRU Operations	ORNL TRU Operations
Shipping and Receiving	Shipping & Receiving/Logistics
Technical Services	Technical, Engineering, & Nuclear Safety
Nuclear Services	Technical Programs
Nuclear Safety	Nuclear and Criticality Safety
Mercury Projects	Mercury Projects & Technology Development
End State & Federal Land Reuse	Chief Program & Sustainability Office
Reindustrialization and Closure	Beneficial Reuse and End State Management
Diversity & Workforce Development Program	Equity, Environmental & Regulatory Programs
Project Services and Support	Project Integration & Business Services
Project Integration	Project Integration & Business Services
Project Mgmt and Integration Services	Enterprise Project Management



UCOR

an Amentum-led partnership with Jacobs

PERFORMANCE DOCUMENT COVER PAGE

NOTE: If the following document is printed, this cover page must be attached to the front and the required information filled in below.

Date Printed: _____

**Dates Rev. No.
Checked:**

Document Number: _____

Revision Number: _____

Title: _____

Person Checking Revision Number: _____

The attached document was printed from the online Performance Document System. The user must check that the hard copy revision number matches the revision number of the controlled document in the online Performance Document System. For future use, confirm the revision number's accuracy online and record dates that the revision number was checked.

Section Below Completed by the Performance Document Group Only

Document Type: Administrative Technical Emergency
 Standard Practice Alarm Response

Required Review Date: _____ Date Required Review Completed: _____

Document Status: Maintain As Is Revise Delete

If "Maintain As Is," Next Required Review Date: _____

If "Revise" or "Delete," Due Date: _____



OWNER: Fire Protection	PPD-FP-2001	REVISION: 8
SUBJECT MATTER AREA: Fire Protection	PREPARER: Floyd Monroe	Page 1 of 28
PROCESS/PROGRAM DESCRIPTION	CONCURRENCE/DATE:	Linda B. Raulston 10/27/20 [Approval Signature on File]
TITLE: FIRE PROTECTION PROGRAM DESCRIPTION	APPROVED BY/DATE:	Brett Kujath 10/27/20 [Approval Signature on File]
USQD <input checked="" type="checkbox"/> UCD <input type="checkbox"/> CAT X <input type="checkbox"/> EXEMPT <input type="checkbox"/>	EFFECTIVE DATE:	11/10/20
USQD/UCD/CAT X No: USQD-MS-PPDFP2001-1654 DOE Approval DOE-20-0580, 10/26/20	REQUIRED REVIEW DATE:	11/10/23
Exhibit L Mandatory Contractor Document: No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>	If an Interim Document, Expiration Date:	

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This document is approved for public
release per review by:
Dave Hamrin 8/31/20
UCOR Classification Date
Information and Control Office

REVISION LOG			
Revision	Effective Date	Description of Changes	Pages
8	11/10/20	Intent change. Updated Attachment C for demolitions and contract additions. Updated reference standards dates throughout. Added Section C.2 to discuss leased facilities. Added implementation of good housekeeping practices to Section E.1.g.	5, 6, 10, 14, 24-28
7	7/8/19	Intent change. Section E.2.d shows Department of Energy (DOE) Oak Ridge Office of Environmental Management(OREM) delegating the Fire Protection Authority Having Jurisdiction responsibility to the UCOR President and Program Manager who then delegates to a qualified UCOR Fire Protection Engineer. Section E.2.d also states that DOE OREM must be notified by UCOR of Authority Having Jurisdiction Determinations as they are made. Attachment B adds that a quarterly report will be made to DOE OREM regarding Authority Having Jurisdiction actions. Numerous demolished structures have been removed from Attachment C regarding assessment frequencies.	3, 12, 21, 23-26
6	10/1/18	Intent change. Section C.1 extends the frequency of the Fire Protection Program Assessment and also of individual Facility Fire Protection Assessments (FFPAs) if the facilities are scheduled to undergo decontamination and decommissioning(D&D) in the near future. Section D.1 adds that fire protection design of lesser hazard relocatable structures valued under \$1 million can be documented via standard UCOR work control processes. Definition of “fire barrier” was modified. Attachment B, Excessive System Impairments, was updated to note that the reporting period for impairments at nuclear facilities is 30 days. Attachment C was updated to delete demolished facilities and to modify assessment frequencies per Section C.1.	5, 6, 16, 22-26
5	4/1/18	Non-intent change. Grammatical changes.	11, 13, 17
4	4/1/18	Intent change. Added description of the Fire Protection Design Analysis process in Sections D.1 and E.2.b and Definitions. Comment added to B.1 that it must be documented when other prime contractors adopt UCOR’s fire protection program. Updated Attachment C to change assessment frequencies and to delete facilities no longer existing, no longer required to be assessed, or are no longer under UCOR control. Added Low Hazard facilities to Attachment C that will be assessed on a five-year frequency.	4, 5, 10-13, 17, 22, 23, 25
3	4/17/17	Intent change. Added description of UCOR Configuration Management Program. Added reference to PROC-FP-2009 for Authority Having Jurisdiction(AHJ) determinations, equivalencies, exemptions, and fire protection system deactivations. Added description of role of fire protection Subject Matter Expert. Updated facilities list in Attachment C. Revised Definitions to match document content.	All
2	5/2/16	Intent change. Removed Attachment C, removed building assessment requirements for several non-required facilities, and updated references.	All
1	12/15/15	Intent change. Program description updated to align more closely with contents of DOE O 420.1C. Changes address opportunities for improvement noted in DOE-15-0392, “Final Report of DOE ORO-EM Assessment of Fire Protection Program.”	All
0	8/11/14	Initial release.	All

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PURPOSE

The purpose of this program description is to comprehensively outline and describe in narrative form the essential elements of the UCOR, an Amentum-led partnership with Jacobs, Fire Protection Program (FPP).

The objective of the FPP is to minimize the likelihood of occurrence of a fire-related event; minimize the consequence of a fire-related event affecting the public, workers, environment, property and missions; and provide a level of safety protection consistent with the “highly protected risk” class of industrial risks.

SCOPE

The UCOR FPP encompasses all facilities and activities, in whole or part, for which UCOR has responsibility at the Oak Ridge Reservation (ORR) including the East Tennessee Technology Park (ETTP), the Oak Ridge National Laboratory (ORNL), the Y-12 National Security Complex (Y-12), and various associated facilities within the ORR. These responsibilities are delegated by the U.S. Department of Energy (DOE) through the UCOR Project Contract and DOE Order 420.1C Change 2, *Facility Safety*; specifically, Attachment 2, Chapter II, “Fire Protection” hereafter referred to as DOE O 420.1C. The program is not applicable to facilities for which DOE has retained responsibility or assigned responsibility through agreements with lessees, tenants, or other prime contractors. Per Section 5.3 of DOE-STD-1066-2016, “Leased Facilities,” where UCOR personnel and/or subcontractors occupy privately owned facilities within the jurisdiction of the site’s FPP, the FPP applies to those personnel and any DOE property that may be located in such privately owned facilities within said site’s jurisdiction, but does not apply to the facilities themselves. Leased facilities are not used for hazard category 1, 2, or 3 nuclear facilities without specific approval of DOE Oak Ridge Office of Environmental Management (OREM).

The FPP described herein is implemented through PROC-FP-2001, *Fire Protection Program Procedure*. PROC-FP-2001 specifies roles and responsibilities, actions for “who,” and the “how” of program description implementation. Additional UCOR procedures elaborate on the implementation details.

EXPECTATIONS AND STRATEGY

The FPP applies to all UCOR employees and subcontractors and shall be established in all facilities and adjoining areas that are under UCOR responsibility. If conditions are discovered that represent a significant new and unmitigated fire risk, appropriate compensatory actions will be taken to mitigate the hazard until final resolution is achieved. The FPP is implemented and maintained through a combination of: engineered fire protection systems; procedures; work control processes; emergency response services provided at each site; and UCOR safety oversight responsibilities.

REQUIREMENTS

- 10 Code of Federal Regulations (CFR) 851, Worker Health and Safety Program, Appendix A
- 29 CFR 1910, Occupational Safety and Health Standards
- 29 CFR 1926, Safety and Health Regulations for Construction
- DOE O 420.1C Change 2, *Facility Safety*, Attachment 2, Chapter II, “Fire Protection”
- DOE-STD-1066-2016, *Fire Protection*
- Federal Wildland Fire Management Policy
- International Building Code
- National Fire Protection Association codes and standards contained in UCOR Contract No. DE-SC-0004645, Section J, Attachment A, “List of Required Compliance Documents”
- DOE-19-0030 letter dated January 18, 2019 from J. Mullis to K. Reuter

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**PROGRAM
ELEMENTS**

A. Fire Protection Program Overview

Implementation of the UCOR FPP ensures that credible fire hazards for DOE sites, structures, and equipment operated by UCOR are identified and that the measures provided and maintained to mitigate the impact of those hazards are in place. This includes maintaining adequate fire safety for the operations staff, on-site workers, the public, and the environment from radiological and toxic material releases resulting from fire.

Where necessary, UCOR implements certain FPP requirements through site services agreements between UCOR and other DOE prime contractors. Emergency response services for ETTP are provided by the city of Oak Ridge Fire Department (ORFD) under a Memorandum of Agreement (MOA) between the city and DOE. Emergency response for the various UCOR facilities in Bear Creek Valley, outside the immediate boundaries of Y-12, is also provided by the ORFD. Emergency response services for UCOR-managed facilities at Y-12 and ORNL are provided by the on-site prime contractor fire departments.

B. General Fire Protection Program Requirements

1. This Program Description addresses facility fire safety requirements for design, construction, operation, management, decontamination, decommissioning, and demolition of DOE facilities. To ensure compliance with the DOE fire safety requirements under DOE O 420.1C, UCOR flows them down to subcontractors at any tier as necessary. Adoption of the UCOR FPP by other prime contractors shall be documented.
2. **Company Policy Statement**
 - a. The UCOR FPP policy statement is found in POL-UCOR-014, *Fire Protection*. The policy affirms UCOR’s commitment to providing a comprehensive fire protection and emergency response program that complies with DOE O 420.1C.
3. **Codes and Standards**
 - a. UCOR’s fire protection programs meet or exceed the applicable building code (at minimum, the *International Building Code* [IBC]) and National Fire Protection Association (NFPA) codes and standards, as required by DOE O 420.1C. Design and construction of new facilities and major modifications thereto, shall be constructed to meet codes and standards in effect when design criteria are approved (otherwise known as the code of record [COR]). Other facility changes must meet the most recent applicable codes and standards to the extent determined by the applicable Authority Having Jurisdiction (AHJ).

State, regional, and local building codes may be used in lieu of the IBC if approved by the OREM field manager, upon submission by UCOR of a report demonstrating the substituted code meets or exceeds the level of protection provided by the IBC.

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- b. UCOR shall satisfy the requirements (i.e., mandatory requirements) in DOE technical standards and industry codes and standards identified as applicable unless relief is approved in accordance with Attachment 1, Section 2 of DOE O 420.1C, “Relief from Requirements, Codes and Standards.”
- c. Provisions of subsequent editions of codes or standards (promulgated after the COR is established) are mandatory only to the extent that they are explicitly stated to be applicable to existing facilities. Conflicts between DOE O 420.1C, NFPA codes and standards, and the applicable building code must be resolved as follows:
 - i. Requirements of DOE O 420.1C take precedence over all NFPA and building code requirements and are subject to the relief requirements of DOE O 420.1C.
 - ii. UCOR-proposed resolution of conflicts between NFPA requirements and other code requirements, such as building codes, must be approved by the DOE head of field element. The UCOR AHJ also may approve minor field compliance conditions and minor code interpretation issues. These are documented as AHJ Interpretations/Determinations.

C. Fire Protection Program Administration

1. Self-Assessments

- a. As required by DOE O 420.1C, Chapter II, 3.b.(2) of, “A documented comprehensive self-assessment of the fire protection program must be performed at least every three years or at a frequency with appropriate justification approved by the DOE head of field element.” The remainder of this section provides justification for rescheduling the 2019 triennial self-assessment to 2021.

UCOR has undergone three major assessments involving the fire protection program: 2016 UCOR FPP Self-Assessment (*Triennial Assessment of the URS | CH2M Oak Ridge LLC Fire Protection Program Oak Ridge, Tennessee, UCOR-4952, issued December 2016*), 2017 ISMS Assessment (*Independent Assessment of the Integrated Safety Management System URS | CH2M Oak Ridge LLC Oak Ridge, Tennessee - Final Report, UCOR-5002, issued May, 2017*), and the 2018 DOE Fire Protection Program Assessment (*Assessment Report for the Triennial Assessment of the URS | CH2M Oak Ridge LLC Fire Protection Program, DOE-18-0190, dated April, 2018*). All three assessments had positive results for fire protection with no major findings. Frequency extension to five years for the next Fire Protection Program Assessment has been concurred with by DOE OREM’s acceptance of PPD-FP-2001, Rev. 7 due to the consistently positive previous results and the cost and time of conducting such self-assessments (approximately 400 hours).

Drafts of these reports, along with the findings, are shared with stakeholders. Comments are resolved prior to final publication. Findings are managed in the UCOR Corrective Action Management System until final remedial action is implemented. The nature of the report follows PROC-PQ-1420, *Assessments*.

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2. Off-Site Leased Facilities

UCOR currently leases a number of facilities used for support functions including general office space and shipping and receiving areas. Fire protection responsibilities in areas such as fire alarm reporting requirements; inspections, tests, and maintenance (IT&M); and records retention; will be delineated between the lessor and the lessee when leases are renewed. Facilities with a MOA from another prime contractor will be treated the same as leased facilities with regard to the UCOR FPP.

Leased facilities are not included in the UCOR fire protection assessment program due to the adequacy of annual ORFD walk-throughs, vendor maintenance of the fire protection systems, vendor insurance company oversight of IT&M, appropriate housekeeping, low hazard facility occupancies, and relatively low value of UCOR equipment. UCOR's application of the FPP will be reevaluated for new leased facilities or major changes to existing leased facilities based on the hazards and values involved.

D. Fire Safety Design Oversight

1. Process

New UCOR facilities, modifications to existing buildings, relocatable structures, and all newly installed or modified fire protection systems and features are required to conform to governing fire protection requirements (e.g., CFR, DOE, and NFPA codes and standards). Design packages that include fire safety issues or fire protection features are reviewed by a UCOR Fire Protection Engineer (FPE). Design of nuclear and high value facilities (+\$167 million) or facilities as directed by DOE shall be documented in a Fire Hazards Analysis (FHA) or Preliminary FHA (PFHA). Design of non-nuclear and facilities valued at \$167 million and under may be documented in a Fire Protection Design Analysis (FPDA). The process for both is described in PROC-FP-2004, *Fire Hazard Analysis*. Design of relocatable structures valued at \$1 million or below and used as offices/change trailers/step-off pads or similar hazards and are under 5,000 sq. ft in area (in aggregate) may be documented through the standard UCOR work control process.

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2. Protection thresholds

- a. New facilities (non-relocatable) exceeding 5000 sq. ft of floor area must be of Type I or Type II construction, as defined in the IBC.
- b. Automatic fire suppression systems must be provided throughout new facilities that exceed 5000 sq. ft of floor area or where a maximum possible fire loss (MPFL) exceeds \$5.6 million, unless specific relief is allowed within NFPA codes for the facility.
- c. Automatic fire suppression systems must be provided throughout facilities in which any of the following conditions exist:
 - i. Where required by safety basis documents (e.g., to prevent loss of safety functions or provide defense-in-depth);
 - ii. Significant life safety hazards;
 - iii. Where fire may cause unacceptable mission or program interruption if automatic fire suppression systems are not provided;
 - iv. Where a modification to a facility would cause the MPFL to exceed \$5.6 million; or,
 - v. Where a modification causes a facility to exceed 5000 sq. ft of floor area.
- d. For property protection, multiple fire protection approaches, such as a fire suppression system and a fire detection and alarm system, will be provided in areas where the MPFL exceeds \$167 million.
- e. For property protection, fire areas will be established such that the MPFL does not exceed \$390 million. Fire area walls or other separation approaches may be used to meet this requirement.

3. Fire Protection and Life Safety Systems

The UCOR FPP includes requirements for physical fire protection systems and equipment that are intended to provide early warning of fire, limitations on the effects of fire, fire control, emergency egress, and effective fire extinguishment by qualified and trained personnel and organizations. These systems and equipment include, but are not necessarily limited to the following:

- a. **Fire suppression.** Administrative controls are in-place to mitigate the inadvertent operation or failure of fire suppression systems to cause a loss of function for safety-class or safety-significant systems, where installed.
- b. **Fire barriers.** Complete fire rated construction and barriers, commensurate with the applicable codes or safety basis requirements, will be provided to isolate hazardous areas and minimize fire spread, and loss potential consistent with limits as established in Section D.2, above. Fire barrier locations and construction shall be thoroughly documented.

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- c. **Fire detection.** Automatic fire detection shall be provided to the extent required by applicable industry codes and standards.
- d. **Life safety.** Requirements for life safety and means of egress as specified in 10 CFR Part 851, Worker Health and Safety Program; NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*; as well as in other codes and standards contained in the IBC and NFPA 101, *Life Safety Code*,[®] determine UCOR activities in providing this protection.
- e. **Water supply and distribution.** A reliable and adequate water supply and distribution system shall be maintained for fire suppression. Such reliability and adequacy is documented through analysis reports and records of IT&M.
- f. **Emergency notification.** UCOR maintains a means to notify responders and building occupants of a fire including the use of fire alarm signaling, where required. In the case of major incidents affecting the entire site, site-wide mass notification capabilities are used.

4. DOE Special Hazards

Where special hazards exist, UCOR will establish and maintain fire protection systems, programs and procedures to address fire and related hazards, that are special or unique to DOE, and which are not addressed by fire protection industry codes and standards.

5. Configuration Management (CM) and Configuration Management Program

CM at DOE facilities is governed by DOE-STD-1073, *Configuration Management*. DOE-STD-1073 summarizes CM specifically for DOE facilities as follows: “The objectives of configuration management are to: (1) establish consistency among design requirements, physical configuration, and documentation (including analysis, drawings, and procedures) for the activity, and (2) maintain this consistency throughout the life of the facility or activity, particularly as changes are being made.” It also describes five key CM elements, which are: Design Requirements, Work Control, Change Control, Document Control, and Assessments. CM is noted to be a coordinated process with the Integrated Safety Management System and other UCOR design and documentation processes. CM is not meant or developed to be a stand-alone process, but is a complement to the standard UCOR design and control systems.

CM at UCOR is conducted under the direction of Engineering and is controlled by UCOR-4122, *Configuration Management Program Description*, and by PROC-NS-1016, *Configuration Management Plans for Nuclear and Non-Nuclear Facilities*. The primary components of the Configuration Management Plans (CMP) are the Configuration Items (CIs) and the Configuration Documents (CDs). The CIs are the physical systems, structures, and components (SSCs) that are to be maintained as described within the CMP and the CDs are the documents used to define the SSCs and their performance criteria and are the vital reference sources used for maintaining CM.

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System Descriptions (SDs) are a vital component in establishing and maintaining CM for Active Safety Systems such as Safety Significant sprinkler systems. Each SD has a qualified Systems Engineer assigned to it for the purpose of maintaining the SD's integrity, part of whose duties includes verifying compliance with the CM function. In addition, each Design Feature (passive, credited SSC) has a dedicated Project Engineer responsible for maintaining CM. Details regarding the Safety Systems/Design Features, associated references, and assigned System Engineer/Project Engineer are listed in UCOR-4107, *UCOR List of Active Safety Systems (LASS) and List of Design Features (LDF)*.

E. Operations

1. **Criteria and procedures.** UCOR has established written procedures and fire protection criteria implementing the FPP. The following list of requirements are created and administered by UCOR directly.

For UCOR facilities at the ORNL and Y-12 sites, similar requirements and procedures (e.g., IT&M) are administered by the appropriate site organization servicing those facilities under MOA amongst prime contractors.

a. Site-specific requirements:

PROC-ETTP-1215, *UCOR Fire Protection Systems Outage*
 PROC-MSRE-573, *Control of Transient Combustibles*

b. Staff organization, resources, training, roles and responsibilities:

PROC-FP-2001, *Fire Protection Program Procedure*
 PROC-FS-1001, *Integrated Work Control Program*
 PROC-TC-0710, *Training Position Descriptions and Position Assignment Forms*
 PROC-PQ-1170, *Control of Subject Matter Area Designations and Subject Matter Expert Assignments*
 UCOR-4144, *System Engineer Program Description for URS | CH2M Oak Ridge LLC, Oak Ridge, Tennessee*

c. Inspection, testing, and maintenance of fire protection systems:

PROC-FP-2003, *Fire Extinguisher Inspection and Maintenance*
 PROC-ETTP-1213, *ETTP Fire Extinguisher Program*
 PROC-ETTP-2567, *Inspection, Test and Maintenance of Fire Water System Valves*
 PROC-ETTP-2568, *Inspection, Test and Maintenance of Fire Hydrants*
 UCOR-4107, *UCOR List of Active Safety Systems (LASS) and List of Design Features (LDF)*
 UCOR-4144, *System Engineer Program Description for URS | CH2M Oak Ridge LLC, Oak Ridge, Tennessee*
 ORNL procedures affecting UCOR systems:
 LPD-FD-ADM-030621, *Dry Pipe ITM in UCOR Facilities*
 LPD-FD-ADM-030622, *Wet Pipe ITM in UCOR Facilities*
 LPD-FD-ADM-030623, *Standpipe ITM in UCOR Facilities*
 LPD-FD-ADM-030604, *Fire Alarm Systems Inspection and Testing*

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- d. **Use and storage of combustible, flammable, radioactive and hazardous materials:**
PROC-FP-2006, *UCOR Program for Controlling Combustibles and Ignition Sources*
 - e. **A hot work control program:**
PROC-FP-2008, *Hot work*
 - f. **Identification and tracking of fire protection system impairments:**
PROC-FP-2007, *Compensatory Measures for Automatic Fire Protection System Impairment/Outages*
PROC-ETTP-1215, *UCOR Fire Protection Systems Outage*
ORNL procedures affecting UCOR systems:
LPD-FD-ADM-030101, *Water-Based Fire Protection System Isolating, Draining, and Restoring*
LPD-FD-ADM-030104, *Building Compensatory Action For Unplanned Fire Suppression and Alarm System Impairments*
 - g. **Fire prevention measures to control combustible loading, hotwork, and ignition sources, and implement good housekeeping practices:**
PROC-FP-2006, *UCOR Program for Controlling Combustibles and Ignition Sources*
PROC-FP-2008, *Hot work*
 - h. **Facility and fire hazard analysis (FHA) assessment program:**
PROC-FP-2004, *Fire Hazard Analysis*
PROC-FP-2005, *Facility Fire Protection Assessment Procedure*
PROC-OS-1001, *Records Management, Including Document Control*
PROC-PQ-1210, *Issues Management Program*
UCOR-4309, *Fire Hazards Analysis Application Guide Oak Ridge, Tennessee*
 - i. **Design and construction oversight:**
PROC-FS-1001, *Integrated Work Control Program*
 - j. **AHJ determinations, equivalencies, exemptions, and fire protection system deactivations:**
PROC-FP-2009, *AHJ Determinations; Equivalencies or Exemptions; and Fire Protection System Deactivations*
2. **Implementation.** UCOR ensures effective implementation of the criteria and requirements in E.1.a, above, by the following means:
- a. **Staffing.** UCOR has access to qualified FPEs (see Definitions) that possess in-depth knowledge of fire protection principles and practices.

The expectations are that the staff will be qualified and competent. UCOR has an “in-house” qualification course for Fire Protection Specialists. There are currently no unqualified staff, however, prior to qualification, non-qualified staff may operate under the direct oversight of qualified IT&M supervisors.

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A UCOR-qualified fire protection Subject Matter Expert is designated per PROC-PQ-1170, *Control of Subject Matter Expert Designations and Subject Matter Expert Assignments*. Their primary responsibilities include acting as the interface with DOE personnel on technical matters and ensuring compliance with fire protection standards and requirements among the fire protection staff and UCOR project as a whole.

Staffing for emergency response capabilities (i.e., fire department) are provided by three fire departments. For ORNL and Y-12 proper, these services are provided through site service agreements with the DOE prime contractors for those locations. At the ETTP site, and for UCOR facilities in Bear Creek Valley outside the Y-12 emergency service boundary, the ORFD provides fire response under an MOA between DOE and the city of Oak Ridge.

The capabilities of the three fire departments are confirmed by individual assessments and documented under current DOE approved Baseline Needs Assessments (BNA).

- b. **Design Reviews.** New UCOR facilities, modifications to existing buildings, and all newly installed or modified fire protection systems and features are required to conform to fire protection requirements in applicable CFRs, DOE orders, consensus codes, and NFPA codes and standards. Confirmation that the design is conducted under the requisite codes and standards is documented in a fire protection design review incorporated into an FHA or PFHA or in a FPDA document as outlined in Section D.1. Design packages that include fire safety issues or fire protection features are reviewed by a UCOR qualified FPE. Review comments are documented. Issues arising from these reviews are managed by the fire protection staff until final resolution is achieved. After construction or modifications commence, progress is observed by an FPE to ensure that code compliance is maintained. When work is completed, a final inspection, including acceptance testing of fire protection systems is performed to ensure that the system meets its requirements and functions satisfactorily.
- c. **Equivalencies and Exemptions.** Authority to approve requests for exemptions and also to approve requests for equivalencies to DOE Orders is the responsibility of the DOE Environmental Management Headquarters program office.

The authority to approve requests for equivalencies other than to DOE Orders resides with the OREM Head of Field Element.

UCOR documents requesting exemption or equivalency approvals are coordinated with the OREM AHJ for fire protection prior to submittal. Submittals requesting exemptions would be coordinated with the OREM program office. All exemption requests submitted for approval from DOE Headquarters are required to have concurrence from the OREM AHJ for fire protection.

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Exemptions and equivalencies approved by DOE are reviewed annually to assess the on-going status of any conditions-of-approval supporting the granting of an exemption or equivalency. Field assessments of conditions related to exemptions or equivalencies are conducted concurrently with facility fire protection assessments and/or FHA revisions.

A description of the documentation necessary to support an exemption or equivalency request is provided in PROC-FP-2009, *AHJ Determinations; Equivalencies or Exemptions; and Fire Protection System Deactivations*.

Additionally, the FPP shall provide input to the UCOR report required by 10 CFR Part 851, Worker Safety and Health Program, related to hazard identification and assessment, specifically, Section 851.21 of the rule, which requires contractors to submit to the Head of DOE Field Element a list of closure facility hazards and the established controls within 90 days after identifying such hazards.

- d. **Assigned Authority.** DOE OREM, per letter DOE-19-0030, from J. Mullis to K. Reuter, has delegated the UCOR President and Project Manager as the UCOR AHJ for fire protection for routine matters involving fire and life safety. The UCOR President and Project Manager may further delegate this responsibility to another individual after assuring that they are qualified, formally designating them, and, in accordance with the requirements included in DOE O 420.1C, under “Assigned Authority, notifying DOE OREM of such delegation. The delegated AHJ responsibilities shall be exercised by an individual who is qualified and experienced in the field of fire protection engineering. DOE OREM must be notified of AHJ Determinations as they occur and report to DOE OREM quarterly on AHJ actions taken.

F. Emergency Response

- 1. **Baseline Needs Assessment.** The scope and adequacy of the emergency services provided for UCOR facilities at ETTP, ORNL and at Y-12 are described and evaluated in BNAs. The prime contractor at each site is responsible for conducting, documenting, and approving the BNA with review included from the fire department serving the site. The BNAs must be in compliance with DOE orders and standards as well as with NFPA codes. The BNA assesses the capabilities of emergency response organizations to provide effective: response to extinguish fires; emergency medical and rescue services; hazardous materials response; and pre-incident planning. Additional elements assessed for adequacy include: staffing, training, apparatus, facilities, equipment, procedures, and mutual aid agreements.

Preparation and maintenance of the ETTP BNA is UCOR’s responsibility. The BNA shall be reviewed at least triennially or when a significant new hazard that is not covered in the most recent BNA revision is introduced and it becomes appropriate to update the report. If no update is required, that result will be documented as well. Once a BNA is conducted, or revised, it shall be submitted to OREM for approval. Once approved, the results are incorporated into the site emergency plans, FHAs, and safety basis documents as necessary.

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BNAs for Y-12 and ORNL are the responsibility of the prime contractors for those DOE sites. UCOR has the responsibility to ensure that the BNAs have been conducted, that reviews are up-to-date as well as to incorporate results into FHAs, safety basis documents, and other parts of the UCOR FPP where needed.

2. **Pre-incident Plans.** The establishment of pre-incident strategies, plans, and standard operating procedures for emergency response services are within the scope of responsibility of the respective fire departments that provide emergency services to UCOR facilities (i.e., ORFD, ORNL-FD, Y-12 FD). UCOR is responsible for ensuring that pre-incident plans exist for UCOR facilities and that they comply with orders, standards, and codes.

In order to enhance the effectiveness of manual fire suppression activities, the UCOR FPP provides information to, and supports walk downs by, the fire departments to apply as appropriate in their pre-incident planning activities. Additionally, any pre-incident plan involving areas within or adjacent to moderator-controlled areas are addressed by the FHAs for that facility.

3. **Manual Fire Suppression Activities.** Manual fire suppression activities for protecting UCOR facilities is provided by the respective fire departments that provide emergency services to UCOR facilities (i.e., ORFD, ORNL-FD, Y-12 FD). The adequacy of the capabilities of the three fire departments are confirmed by individual assessments and documented under current DOE approved BNAs.

G. Fire Hazard Analyses, Transitional Fire Hazard Analyses, and Building Assessments

1. **Fire Hazards Analyses (FHA).** UCOR FHAs are developed in accordance with PROC-FP-2004, *Fire Hazard Analysis*, and guidance contained in UCOR-4309, *Fire Hazards Analysis Application Guide Oak Ridge, Tennessee*, and conducted for all hazard category 1, 2, and 3 nuclear facilities and major modifications thereto, facilities that represent unique fire safety risks, new facilities or modifications to existing facilities with value greater than \$167 million, and when directed by DOE authority.

FHAs are conducted under the direction of a UCOR-qualified FPE and will be reviewed every three years and revised as appropriate. If no revision is required, the result will be documented as well.

FHAs will be revised when changes to the facility structure or layout, processes, occupancy, safety basis documentation or BNA impacts the analysis in the FHA, a modification to an associated facility or process adds significant new fire safety risk, or the periodic review identifies the need for changes. Information from the FHA is integrated into safety basis documentation.

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2. **Transitional Fire Hazard Analyses (TFHA).** UCOR transitional facilities requiring a TFHA are those that have an existing FHA, have been placed in a “safe-shutdown” condition or are undergoing decontamination and decommissioning work for ultimate demolition. TFHAs typically include justifications and remedies for reduced levels of fire protection coincident with reduced fire hazards in the facility. For these facilities, a TFHA is conducted under the direction of a UCOR-qualified FPE and in accordance with PROC-FP-2004, *Fire Hazard Analysis*, and guidance contained in UCOR-4309, *Fire Hazards Analysis Application Guide Oak Ridge, Tennessee*. The TFHA may be cancelled when the hazards that required the original FHA are removed or otherwise eliminated.

The scope and depth of the analysis is commensurate with the complexity of the facility, the nature of the fire risks, and the type of D&D activities. If approved D&D equivalencies embedded in a TFHA need to be revised to address changes in conditions, then the TFHA with the proposed equivalency revision must be submitted to the OREM fire protection AHJ for approval. The TFHA and equivalencies must also be processed in accordance with PROC-FP-2004, *Fire Hazard Analysis*, and PROC-FP-2009, *AHJ Determinations; Equivalencies or Exemptions; and Fire Protection System Deactivations*.

The TFHA shall be revised, as appropriate, when significant changes occur in occupancy or hazards and influence fire safety as determined by the UCOR Fire Protection Program Manager. Fire safety features that have been previously required by analysis of fire hazards or otherwise by DOE, may be rendered inoperable or considered no longer needed if justified by the analysis. Such features may be abandoned in place until they are dismantled as part of planned demolition activities.

3. **Facility Fire Protection Assessments (FFPA).** FFPA are conducted under the direction of a UCOR-qualified FPE and in accordance with PROC-FP-2005, *Facility Fire Protection Assessments Procedure*:
 - a. Annually, or at a frequency with appropriate justification approved by the DOE head of field element, for buildings with a replacement value in excess of \$111 million, facilities considered a high hazard, or those in which vital programs are involved, as defined by the responsible DOE authority.
 - b. Other facilities will be assessed as listed in Attachment C, “Assessment Frequencies for UCOR Facilities.”
4. By October 31, UCOR shall make available to DOE a schedule of facility assessments for the coming fiscal year and a status of assessments for the previous year. After appropriate justification and approval by the OREM AHJ for fire protection, UCOR may schedule assessments at a different frequency than that described in the preceding subsections.

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H. Wildland Fire

1. The UCOR *Fire Protection Program Procedure* (PROC-FP-2001) and *Integrated Work Control Program* (PROC-FS-1001) both contain procedures and practices intended to control sources of ignition that would initiate a wildland fire. These include restrictions on certain types of work (e.g., cutting and welding) unless appropriate hotwork safeguards are in place to mitigate the hazard. Work packages that involve significant fire hazards are routinely reviewed by the UCOR fire protection engineering staff.
2. Additionally, at times of heightened wildland fire hazards (i.e., between October and March routinely or during times of relative drought), UCOR conducts periodic site tours to identify potentially new and significant wildland fire risks.
3. Control of potential exposure hazards for facilities from wildland/facility interfaces is accomplished through application of the *Oak Ridge Reservation Wildland Fire Implementation Plan* as implemented by the Oak Ridge Reservation Office's Forestry and Wildland Fire Program. This plan is intended to comply with the *Federal Wildland Fire Management Policy*. The effectiveness of these controls are reviewed and confirmed for UCOR facilities during development of FHAs, FHA reviews, and FFPAs.

I. Specific Fire Protection Program Guidance

1. The specific criteria as contained in DOE-STD-1066-2016, *Fire Protection*, are used as guidance for acceptable methods to implement the fire protection requirements in DOE O 420.1C.
2. A schedule of program deliverable reports is presented in Attachment B of this program description document.

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Acceptable—Considered by the authority having jurisdiction as adequate for satisfying the goals, performance objectives, and/or performance criteria. <DOE-STD-1066-2016>

Active Safety System—Paraphrased from PROC-DE-1015, *Update and Control of the Lists of Active Safety Systems (LASS) and Design Features (LDF)*: Active Safety Systems are either safety-class or safety-significant facility systems identified in a Documented Safety Analyses (DSA) and for which Technical Safety Requirements (TSR) are developed. Active Safety Systems are identified in UCOR-4107, *UCOR List of Active Safety Systems (LASS) and List of Design Features (LDF)* as “active (i.e., “engineered”)”. Engineered systems can be defined as a combination of components that work together in synergy to collectively perform a function (National Science Foundation).

Alternative—A system, condition, arrangement, material, or equipment submitted to the AHJ as a substitute for a specific criterion in a standard. <DOE-STD-1066-2016>

Approved—Acceptable to the AHJ. <DOE-STD-1066-2016>

Authority Having Jurisdiction (AHJ)—An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure. In DOE, the head of field element is the AHJ, but responsibility can be delegated to another federal official and routine activities can be delegated to a contractor. The contractor AHJ must be designated in writing to the DOE field office. <DOE-STD-1066-2016>

BNA—Baseline Needs Assessment

CD—Configuration Document

CFR—Code of Federal Regulations

CI—Configuration Item

CMP—Configuration Management Plan

Combustible—Any material that, in the form in which it is used and under the conditions anticipated will ignite and burn, or will add appreciable heat to an ambient fire. <DOE-STD-1066-2016>

Configuration Management (CM)—At DOE facilities, per DOE-STD-1073, *Configuration Management*, as follows: “The objectives of configuration management are to: (1) establish consistency among design requirements, physical configuration, and documentation (including analysis, drawings, and procedures) for the activity, and (2) maintain this consistency throughout the life of the facility or activity, particularly as changes are being made.” It also describes Five Key Configuration Management elements, which are; Design Requirements, Work Control, Change Control, Document Control, and Assessments.

COR—Code of Record

D&D—decontamination and decommissioning

Defense-in-depth—Typically associated with the facilities that can be classified as a Highly Protected Risk or an Improved Risk. This means that reliance is not placed on any single fire protection feature to ensure an acceptable level of fire safety.

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Design Feature—From UCOR-4659, *Inspection of Design Features Application Guide, Oak Ridge, Tennessee*: A Design Feature is an SSC credited in the DSA as mitigating or eliminating the consequences of some hazard. Design Features are typically passive features (e.g., walls, structures, barriers, and containers) and may be components, structural elements, or physical arrangements. While Design Features contribute to the operational or functional safety of a facility, they are not an Active Safety System, and therefore are not governed by the System Engineering Program.

Documented Safety Analysis (DSA)—A documented analysis of the extent to which a nuclear facility can be operated safely with respect to workers, the public, and the environment, including a description of the conditions, safety boundaries, and hazard controls that provide the basis for ensuring safety. <DOE-STD-1066-2016>

DOE—U.S. Department of Energy

Equivalency—An alternative means of providing an equal or greater degree of fire safety than that afforded by strict conformance to prescribed codes and standards. <DOE-STD-1066-2016>

ETTP—East Tennessee Technology Park

Exemption—The release from one or more requirements in a directive. Unless specified otherwise in a directive, exemptions are granted by the Program Secretarial Officer, or their designee. <DOE-STD-1066-2016>

Facility Fire Protection Assessment (FFPA)—A formal documented review conducted by DOE or contractors, in accordance with DOE requirements that examines the essential fire protection elements as they relate to a specific facility or an overall fire protection program. <DOE-STD-1066-2016>

Fire—Unplanned destructive and uncontrolled burning, including detonation and deflagration, as manifested by any or all of the following: flame, heat, or smoke. Fire does not include the following unless they cause a fire or occur as a consequence of a fire: lighting or electrical discharge; rupture of a pressure vessel not caused by internal combustion; detonation of munitions; or overheat (without damage to initiating material). <DOE-STD-1066-2016>

Fire Area—An area that is physically separated from other areas by space, barriers, walls, or other means in order to contain fire within that area. <DOE-STD-1066-2016>

Fire Barrier—A wall, partition, ceiling, or floor that separates portions of buildings and is designed and constructed to restrict the spread of fire or to provide temporary areas of refuge (i.e., fire-rated corridors, stairwells, etc.).

Fire Department—An emergency response organization providing rescue, fire suppression, and related activities, including any public, governmental, private, industrial, or military organization engaging in this type of activity. <DOE-STD-1066-2016>

Fire Hazard—Anything or act that increases or may cause an increase of the hazard or menace of a fire to a greater degree than that which is recognized as normal by persons regularly engaged in preventing and extinguishing fires, or that may obstruct, delay, hinder, or interfere with the operations of the fire department or the egress of occupants in the event of fire.

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Fire Hazards Analysis (FHA)—A comprehensive and qualitative assessment of the potential for a fire at any location conducted to ensure that the possibility of injury to people or damage to building, equipment, or the environment are in compliance with DOE fire safety requirements within individual fire areas in DOE facilities.

Fire Loss—The dollar cost of restoring damaged property to its pre-fire condition. <DOE-STD-1066-2016>

Fire Prevention—The process of managing and regulating potential fire hazards (fuels and heat energy sources) and the mechanisms that bring them together to either eliminate the hazard(s) or reduce the risk associated with the hazard(s). <DOE-STD-1066-2016>

Fire Protection—A broad term that encompasses all aspects of fire safety, including: building construction and fixed building fire features, fire suppression and detection systems, fire water systems, emergency process safety control systems, emergency fire-fighting organizations, fire protection engineering, and fire prevention. Fire protection is concerned with preventing or minimizing the direct and indirect consequences of fire. It also includes aspects of the following perils as they relate to fire protection, such as explosion, earthquake, lightning, and smoke and water damage from fire extinguishment.

Fire Protection Design Analysis (FPDA)—A Fire Protection Design Analysis should be performed to ensure that fire protection program requirements are documented and incorporated into plans and specifications for new buildings and significant modifications to existing buildings. <DOE-STD-1066-2016>

Fire Protection Engineer (FPE)—A graduate of an accredited engineering curriculum who has completed not less than four years of engineering practice, three of which were in responsible charge of diverse fire protection engineering work. If not such a graduate, an engineer should either: demonstrate knowledge of the principles of fire protection engineering showing evidence by specific academic courses and written examination in the related curriculum of physical, mathematical, and engineering sciences, and having completed not less than six years engineering practice, three of which in responsible charge of diverse fire protection engineering projects, or be a registered professional engineer in fire protection; or be a “Professional Member (formerly Member Grade)” in the Society of Fire Protection Engineers. FPE as used in this procedure refers to a UCOR-qualified FPE unless otherwise stated.

FPP—Fire Protection Program

Fire Protection Program Manager—Responsible for developing, implementing, maintaining and overseeing the Fire Protection Program. Assigns and deploys fire protection engineers to UCOR project organizations. Provides project and function level support to projects.

Fire Protection System—Any system designed to detect, extinguish, and limit the extent of fire damage or enhance life safety, and as defined by DOE.

Hazard—A source of danger (i.e., material, energy source, or operation) with the potential to cause illness, injury, or death to personnel or damage to an operation or to the environment (without regard for the likelihood or credibility of accident scenarios or consequence mitigation).

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Hazard Category (1,2,3) Nuclear Facilities—Hazard category 1, 2, and 3 nuclear facilities as defined in 10 CFR Part 830, Nuclear Safety Management, are as follows: hazard category 1 has the potential for significant off-site consequences; hazard category 2 has the potential for significant on-site consequences beyond localized consequences; and hazard category 3 has the potential for only locally significant consequences.
<DOE-STD-1066-2016>

Hazard Classification—Facilities are classified for non-radiological hazards as *High, Moderate or Low*. Non-radiological hazards (e.g., toxic materials, energy sources, reactive materials) are analyzed using a consequence-based evaluation to determine the hazard classification that considers the potential health effects to both on-site and off-site populations due to release of toxic material.

IBC—International Building Code

Impairment—A condition that prevents a Fire Protection System from performing its intended function. Impairments may be classified as Emergency (unplanned) or pre-planned such as for maintenance or modifications.

Improved Risk—Property protection that reduces risk to such level that would qualify for complete insurance coverage by the FM Global, Industrial Risk Insurers, or other industrial insurance companies that limit their insurance underwriting to the best protected class of industrial risk; also known as **HIGHLY PROTECTED RISK**.

IT&M—inspections, tests, and maintenance

Maximum Possible Fire Loss (MPFL)—The value of a building and its contents, excluding land value, within a fire area, unless a fire hazard analysis or a fire protection assessment demonstrates a lesser (or greater) loss potential. This assumes the failure of both automatic fire suppression systems and manual firefighting efforts.
<DOE-STD-1066-2016>

Means of Egress—A continuous and unobstructed way of travel from any point in a building or structure to a public way consisting of three separate and distinct parts: (1) the exit access, (2) the exit, and (3) the exit discharge.

MOA—Memorandum of Agreement

NFPA—National Fire Protection Association

Noncombustible—A material that, in the form in which it is used and under the conditions anticipated, will not ignite, support combustion, burn, or release flammable vapors when subjected to fire or heat.
<DOE-STD-1066-2016>

Nuclear Facility—A reactor or nonreactor facility where a nuclear activity subject to the requirements of 10 CFR 830 is conducted for or on behalf of DOE and includes any related area, structure, facility, or activity to the extent necessary to ensure proper implementation of the requirements established by 10 CFR 830.

OREM—Oak Ridge Office of Environmental Management

ORFD—Oak Ridge Fire Department

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ORNL—Oak Ridge National Laboratory

ORR—Oak Ridge Reservation

PFHA—Preliminary Fire Hazards Analysis

Pre-incident Plan—A document, owned and developed by a fire department, that provides information to responding personnel that will help them safely and effectively manage incidents with available resources at a specific facility or area. <DOE-STD-1066-2016>

Procedures—Controlled documents that communicate work requirements to personnel, which are categorized as administrative, technical, emergency, or alarm response procedures. Within the document structure, procedures are the primary document type used for controlling performance of processes, activities, or operations. They provide the communication and coordination activities necessary to control the management of technical, safety, and administrative requirements, and to communicate work requirements to personnel.

Requirement—An action or condition identified in the FHA that is not part of a finding, but is still necessary in order to ensure an adequate level of fire protection.

Risk—A term used to describe the overall potential for loss.

Safety Basis—The documented safety analyses and hazard controls that provide reasonable assurance that a DOE nuclear facility can be operated safely in a manner that adequately protects workers, the public, and the environment.

Safety Class Structures, Systems, or Components—Those structures, systems, or components, including portions of process systems, whose preventive or mitigative function is necessary to limit radioactive hazardous material exposure to the public, as determined by safety analysis.

Safety Significant Structures, Systems, or Components—Those structures, systems, or components, including portions of process systems, whose preventive or mitigative function is a major contributor to defense-in-depth and/or worker safety, as determined from safety analysis.

SD—System Description

Shall—Indicates a mandatory requirement.

Should—Indicates a recommendation or that which is advised, but not required.

SSC—structure, system or component

Subcontractor—A supplier, distributor, vendor, or firm who furnishes supplies or services for UCOR in the performance of their prime contract.

Subject Matter Expert (SME)—A person assigned to a system, program, project, discipline, equipment, or other topic who has comprehensive knowledge and relevant expertise based on qualification, training, experience, or education. Their responsibilities include serving as the authority for interpretation of performance documents within their Subject Matter Area. The SME's working-level knowledge is characterized by a detailed understanding of the subject matter and the ability to apply this knowledge to assigned tasks. SME qualification requires the demonstration of experience, training, knowledge, and skills to fulfill management's expectations and responsibilities.

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Transitional Facility—A hazard category 1, 2, or 3 nuclear or other significant facility that has changed from one major operational state to another (such as transitioning from operational to cold standby or deactivated state, or from shutdown to operational state) or a facility that has been placed in a safe-shutdown condition and may or may not be maintained, or is undergoing decontamination and decommissioning work and ultimately demolition.

Transitional Fire Hazard Analysis (TFHA)—A comprehensive and qualitative assessment of the potential for a fire in a transitional facility in relation to existing safeguards. A TFHA is conducted to help ensure that the risk to the public, site workers, the environment and the facility is within acceptable limits. It also assesses the degree that the facility conforms to applicable DOE and industry fire safety requirements.

UCOR—an Amentum-led partnership with Jacobs

Vital Program—A DOE program, so defined by the Program Secretarial Officer.

Y-12—Y-12 National Security Complex

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Information	Description	Due Date
Contractor Fire Protection Authority Having Jurisdiction Determinations	Approve minor field compliance conditions and minor code deviations as discussed in Section B.3.c.ii. of this document. A quarterly report of the UCOR FP AHJ actions shall be submitted to DOE OREM.	Quarterly
Fire Protection Program	<p>A documented fire protection program that includes the elements and requirements identified in DOE O 420.1C, Att. 2, Chapter II for design, operations, emergency response, fire analysis and assessments, and specific fire protection program criteria must be developed, implemented, and maintained by the contractor. It is understood that UCOR's fire protection program is described in two documents: PPD-FP-2001, <i>Fire Protection Program Description</i>, and PROC-FP-2001, <i>Fire Protection Program Procedure</i>.</p> <p>The documented fire protection program must be submitted to the DOE OREM for approval, and this may be accomplished in conjunction with the Worker Safety and Health Program Description submittal required by 10 CFR Part 851.</p>	DOE OREM approval schedule will be no later than three months following UCOR's submission of the fire protection program description documents.
Fire Protection Program Annual Report	This report should address, in summary form, UCOR's compliance with its fire protection contractual requirements, DOE Headquarters' imposed fire safety reporting requirements, fire protection system performance, and the relevant DOE Fire Safety Committee-promulgated fire protection program performance metrics.	March 1 st
Annual Fire Protection Summary	Required by DOE O 231.1B, <i>Environment, Safety, and Health Reporting</i> . Provides a summary of fire protection information for the previous calendar year. Details for submitting this information can be found in the <i>Annual Fire Protection Summary Information Reporting Guide</i> .	April 30 th
Facility Assessment Schedules	A schedule of the upcoming fiscal year's fire protection and life-safety facility assessments and a status report on the previous year's facility assessments. If frequencies are not in accordance with OREM guidance in section 1.a, the schedule must be approved by the OREM AHJ for fire protection. (Attachment C contains the schedule.)	October 31 st

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Information	Description	Due Date
Equivalency and Exemption Status	The status of all DOE-approved exemptions and equivalencies, as well as the continued need for the equivalencies/exemptions, should be evaluated annually. A record of this review shall be made available to DOE OREM.	July 31st
Excessive System Impairment	Active fire protection systems in nuclear facilities, which are impaired for greater than 30 days, or active fire protection systems in other facilities impaired for greater than 90 days shall be reported to DOE OREM. Outages for greater than 180 days shall be reported, along with a formal action plan for returning the system(s) to service, a schedule for repairs, and justification for continued operations approved by DOE.	After 30 days of impairment for nuclear facilities and 90 days for other facilities. Every 30 days thereafter for nuclear facilities and 90 days thereafter for other facilities.
Baseline Needs Assessment	Required by DOE O 420.1C, <i>Facility Safety</i> , to be updated every 3 years. Must be approved by the DOE OREM AHJ for fire protection.	Upon completion
Fire Protection Program Self-Assessment	Required by DOE O 420.1C, <i>Facility Safety</i> , to be performed every 3 years or of lesser frequency with DOE approval. Provided to DOE OREM for information only.	Upon completion
Fire Hazards Analyses	Provided for information only, when requested.	When Requested
Transitional Fire Hazards Analyses	Initial revision requires approval by the OREM AHJ for fire protection if Equivalencies or Exemptions are requested. If changes to the conditions of approved alternative approaches are made, subsequent revisions must be re-approved.	Upon completion
Fire Protection Program AHJ Qualifications	It is expected that qualifications are comparable to fire protection engineer (FPE) qualifications contained in DOE-STD-1066-2016, <i>Fire Protection</i> (i.e., FPE definition, Section 5.2.1.3, and Appendix E).	Upon completion

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FREQUENCIES OF FIRE PROTECTION ASSESSMENTS FOR UCOR FACILITIES
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NOTE: 5 yr. frequencies are for facilities scheduled as of August 2018 to undergo demolition or for other less important facilities.

Facility Number	Facility Description	Type of Assessment	Site	HazCat 2, 3, High Haz, or Vital to Prog	Freq (year)
K-1066-K Yard	K-1066-K Yard	FFPA	ETTP		3
K-1313-F	Storage Facility	FFPA	ETTP		3
K-1317	Central Receiving Warehouse	FFPA	ETTP		3
K1417/A-Yard	Transportation Hub and A-Yard	FFPA	ETTP		3
2500 Area and Portal 16	NDA Shop, 2500AB Rubb Tent, Portal 16 and associated support structures	FFPA	ETTP		3

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Facility Number	Facility Description	Type of Assessment	Site	HazCat 2, 3, High Haz, or Vital to Prog	Freq (year)
2101	Change House	FFPA	ORNL		3
2099, 2531-35, 2537, 2539, 2568, & 2650	LLLW Evaporator, Tanks, Filter Pits, Filters & MCS for 2026 (LLW Tanks)	FFPA	ORNL	X	1
2649	Decontamination, Inspection & Repair Facility	FFPA	ORNL		3
2660	Surveillance & Maintenance Offices	FFPA	ORNL		3
3001	Oak Ridge Graphite Reactor	FFPA	ORNL		1
3005	Low-Intensity Test Reactor	FFPA	ORNL		3
3010	Bulk Shielding Reactor Facility	FFPA	ORNL		3
3026	3026D Pad & Hot Cells	FFPA	ORNL		1
3028 & 3029	Alpha Powder Facility	FFPA	ORNL		3
3030, 31, 32, 33, 33A, 34, 36	Radioisotope Production Laboratory (aka: Isotope Circle)	FFPA	ORNL		3
3038	Isotope Development Laboratory	FFPA	ORNL		1
3042	Oak Ridge Research Reactor	FFPA	ORNL		3
3125 at al	Backup Power for 3039 Ventilation Fans	FFPA	ORNL		3
3127	LGWO Decontamination Management Storage	FFPA	ORNL		3
3130	Waste Operation Control Center (WOCC)	FFPA	ORNL		3
3517	Fission Products Development Lab	FFPA	ORNL	X	1
3544 et al	BV Storage Tanks, Process Waste, Treatment Complex, Filter Process	FFPA	ORNL		1

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Facility Number	Facility Description	Type of Assessment	Site	HazCat 2, 3, High Haz, or Vital to Prog	Freq (year)
4507	High Radiation Level Chemical Development Lab	FFPA	ORNL		1
7500	HRE - Homogeneous Reactor Experiment	FFPA	ORNL		3
7503 & 7509	Molten Salt Reactor Experiment (MSRE) Facility	FFPA	ORNL	X	1
7506	LGWO Maintenance Support Facility	FFPA	ORNL		3
7507W	ORNL S&M Interim Storage	FFPA	ORNL		3
7516	MSRE Field Service Shop	FFPA	ORNL		3
7572 & 7574	CH-TRU Waste Storage	FFPA	ORNL	X	1
7582, 7583-A-D	LGWO Warehouse	FFPA	ORNL		3
7600, 7602, 7609, 7610, & 7614	Experimental Gas-Cooled Reactor (ECGR) complex	FFPA	ORNL		3
CT8-7800	Storage Pad	FFPA	ORNL	X	1
7822K	Storage Pad	FFPA	ORNL	X	1
7823-B/C/D	TRU Waste Storage Facilities	FFPA	ORNL	X	1
7823-E, 7823-G, 7824, 7824-A, & 7824-E	Waste Examination and Assay Facility (WEAF)	FFPA	ORNL		3
7826, 7827, & 7834	Underground Bunkers/Wells	FFPA	ORNL	X	1
7830, 7856, 7863, 7877, 7887	Melton Valley Storage Tanks (Tanks W-24/31) Solidification, Separation & General Storage; & MVST Annex	FFPA	ORNL	X	1
7830A	RCRA-closed Melton Valley Storage Tank	FFPA	ORNL		3

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Facility Number	Facility Description	Type of Assessment	Site	HazCat 2, 3, High Haz, or Vital to Prog	Freq (year)
7831	Solid Waste Compactor Facility	FFPA	ORNL		3
7841, 7874, & 7862	D&D Storage Buildings SWSA 4	FFPA	ORNL		3
7841 B&C	HF-S1 Portable Office Complex	FFPA	ORNL		3
7842-B	Layout Area	FFPA	ORNL		3
7855	RH-TRU Waste Storage	FFPA	ORNL	X	1
7860A	Retrievable RH TRU Storage Tent	FFPA	ORNL	X	1
7860B Pad	Storage/Staging Pad	FFPA	ORNL	X	1
7879	CH-TRU Waste Storage	FFPA	ORNL	X	1
7883	RH-TRU Waste Storage Facility	FFPA	ORNL	X	1
7966	LLLW Monitor and Control Station	FFPA	ORNL	X	1
EMWWMF	EMWWMF Site	FFPA	ORNL	X	1
STT's	Shielded Transfer Tanks	FFPA	ORNL	X	1
7899	Well Drillers' Steam Cleaning Facility	FFPA	ORNL		3
Material Storage Facility (MSF)	Material Storage Facility (MSF)	FFPA	ORNL		3

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Facility Number	Facility Description	Type of Assessment	Site	HazCat 2, 3, High Haz, or	Freq (year)
9201-2	Alpha-2	FFPA	Y-12	X	1
9201-4	Alpha 4 Production Building	FFPA	Y-12	X	1
9207, 9207A, & 9210	Biology Complex	FFPA	Y-12		3
9401-1	Beta-1	FFPA	Y-12	X	1
9401-01	Maintenance/Recycle Storage Building (Old Steam Plant)	FFPA	Y-12		3
9401-2	Y-12 Plating Shop	FFPA	Y-12		3
9616-11	Y-12 Industrial Landfill Administrative Buildings	FFPA	Y-12		3
9809-1, 9825-1, & 9825-2	Three Sided Storage Building & Uranium Oxide Storage Vaults	FFPA	Y-12		3
9720-60	DARA storage facility	FFPA	Y-12		3
NA	Other Low Hazard UCOR Facilities	FFPA	All		5/10