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Level 4 Administrative Procedure

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1.0 PURPOSE

- 1.1** This procedure has been developed to provide the protocols and methods to meet the intent of Fluor-BWXT Portsmouth LLC (FBP) Integrated Safety Management System (ISMS) Plan, requirements for lessons learned, feedback and improvement ISMS Core Function 5, facility safety; and fully meet the Integrated Safety Management System (ISMS) Plan requirements for Fire Protection (FP).
- 1.2** This document implements applicable regulatory requirements. They are listed in Appendix A, *Regulatory Requirements Flow Down*.

2.0 SCOPE AND APPLICABILITY

- 2.1** This Level 4 procedure applies to the administrative program responsibilities for ensuring that FBP maintains compliance with FP requirements at the Portsmouth Gaseous Diffusion Plant (PORTS).
- 2.2** This procedure applies to all FBP Fire Services (FS) or Fire Protection (FP) personnel.
- 2.3** This procedure identifies elements of the program as described in FBP-FP-PDD-00001, *Fire Protection Program Description*. The purpose of the program is to minimize the potential for:
- Occurrence of a fire or related event
 - Fires that cause an unacceptable onsite or offsite release of hazardous or radiological material that could impact the health and safety of employees, the public, or the environment
 - Unacceptable interruption of vital Department of Energy (DOE) programs as a result of fire and related hazards
 - Property loss from fire exceeding limits established by DOE
 - Fire damage to critical process controls and safety class Structure, System, and Components (as documented by appropriate safety analysis)

Exceptions:

- 2.4** This procedure is not applicable to facilities, in whole or in part, for which United States DOE has retained responsibility or assigned responsibility through agreements with lessees, tenants, or other prime contractors.

3.0 GENERAL INFORMATION

None

4.0 USE REFERENCES

- A.** FBP-BS-PRO-00062, *Records Management Process*

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- B.** FBP-EM-PRO-00037, *Emergency Management Drill and Exercise Program*
- C.** FBP-FP-PRO-00005, *Combustible Control Program*
- D.** FBP-FP-PRO-00006, *Fire Hazard Analysis*
- E.** FBP-FP-PRO-00042, *Fire Protection Facility Assessments*
- F.** FBP-FP-PRO-00072, *Welding, Burning, and Hot Work*

5.0 RESPONSIBILITIES

5.1 Fire Services Manager (FSM)

- 5.1.1** Ensures the FP Program is implemented and adequate policies and procedures are in place to implement all elements of the program.
- 5.1.2** Ensures the FP Program is adequately staffed in compliance with industry standards and regulatory oversight requirements.
- 5.1.3** Ensures the safety of all FBP Fire Services/Fire Protection (FS/FP) personnel and appropriate personal protection equipment (PPE) is available.
- 5.1.4** Ensures appropriate emergency response apparatus and equipment is available meeting the departments Baseline Needs Assessment (BNA).
- 5.1.5** Leads and manages the FS/FP organization and program.
- 5.1.6** Ensures emergency medical services program, procedures and equipment are adequately maintained to ensure proper emergency care of onsite personnel.
- 5.1.7** Controls the Fire Protection Impairment permit system for valves on water systems supplying fire suppression systems. Provide authorization as applicable to groups that may need issued impairment permits and operate FP.
- 5.1.8** Administers the Fire Services Fitness Qualification Program; approves procedures and equipment to ensure FS/FP personnel are physically fit to perform their assigned duties.

5.2 Fire Services Section Manager (FSSM) (IF assigned)

NOTE

The FSM may delegate responsibilities of the FSSM as necessary.

- 5.2.1** Maintains FS/FP inspection, test, and maintenance (ITM) program.
- 5.2.2** Ensures the safety of all FBP FS/FP personnel.

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- 5.2.3 Oversees the daily operations of FS Emergency Response Personnel, apparatus and equipment in compliance with industry standards, regulatory oversight requirement, and the departments BNA.
- 5.2.4 Assists FSM with selection and supervision of Fire Services Shift Commanders (FSSC) and Fire Services Training/Shift Commander (FST/SC) positions.
- 5.2.5 Ensures breathing air used in Self-Contained Breathing Apparatus (SCBA) meets a minimum quality of Grade D air.
- 5.2.6 Ensures adequate emergency response apparatus and equipment are available and operational meeting the department's response needs.
- 5.2.7 Ensures adequately shift staffing is in compliance with industry standards and regulatory oversight requirements.

5.3 Fire Services Shift Commander (FSSC)

NOTE

Relief Commander is responsible for relief of shift commander functions as well as special projects and activities as assigned by FSM.

- 5.3.1 Performs the daily management of the fire fighters, including the testing program, training, alarm receiving, and emergency response.
- 5.3.2 Maintains a working knowledge of FBP safety policies and procedures.
- 5.3.3 Ensures their supervised personnel perform their assigned tasks in a safe manner in accordance with the FBP safety policies and procedures.

5.4 Fire Services Training/Shift Commander (FST/SC)

- 5.4.1 Performs annual review of fire training needs to:
 - Develop any new fire services training needs.
 - Modify the program to meet identified needs.
 - Coordinate fire services training activities.
 - Prepare a training schedule for the upcoming year.
- 5.4.2 Maintains and/or ensures training records are filed with Records Management.
- 5.4.3 Maintains certification (or equivalent) as a State Fire Service Instructor.
- 5.4.4 Acts as a Relief Commander for FSSC as needed.

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5.5 Fire Protection Engineer (FPE)

- 5.5.1** Performs acceptance testing of new and modified Fire Protection Systems (FPSs) in conjunction with Fire Services.
- 5.5.2** Verifies repairs to a system are done with recognized and approved parts that are commercially available. Repair parts/replacement parts are specified and controlled by the Contractor Authority Having Jurisdiction (CAHJ).
- 5.5.3** Ensures use of latest edition of Underwriter's Laboratories listings and Factory Mutual approved lists in the preparation of specifications, material requests, and requests for proposals, etc., as applicable.
- 5.5.4** Ensures all fire code non-compliances discovered are presented to the AHJ for further evaluation acceptance and documentation as necessary.
- 5.5.5** Ensures modifications to PORTS facilities comply with all applicable National Fire Protection Association (NFPA) Standards.

5.6 Fire Fighters

- 5.6.1** Maintains Qualifications and Required Certifications - Fire Fighters' training is equivalent to the State Certified Fire Fighter training curriculum. Emergency medical response personnel (usually fire fighters) meet requirements for state certification as emergency medical technicians. Fire fighters have experience in firefighting, hazardous materials, radiological, environmental response, and emergency medical treatment.
- 5.6.2** Maintains physical fitness qualification as directed by FBP-FS-PRO-00082, *Fire Services Fitness Qualification Procedure*.

5.7 Contractor Authority Having Jurisdiction (CAHJ)

- 5.7.1** Determines fire protection requirements for PORTS facilities.
- 5.7.2** Assesses systems, programs, and facilities to assure regulatory compliance.
- 5.7.3** When identified by the Safety Basis (e.g., Documented Safety Analysis [DSA], Basis of Interim Operations [BIO]), ensures fixed fire suppression systems are provided for areas containing safety systems.
- 5.7.4** Ensures PORTS facility modifications comply with all applicable NFPA Standards.
- 5.7.5** Ensures any area where full compliance with these standards will not be observed are documented and justified by the AHJ.
- 5.7.6** Ensures any deviations found during future modifications are to be documented and justified by the AHJ or corrective actions are taken.

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5.7.7 Ensures FP Program requirements include configuration control, and procedures for the operation, testing, and inspection.

5.7.8 Provides oversight of the FPSs.

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6.0 ACTIONS

6.1 Program Elements

FSM

- 6.1.1 Analyze and evaluate data from field testing of FPSs to determine the capability of the system to operate within accepted design parameters.
- 6.1.2 Ensure FS personnel are on duty continuously to provide emergency response services and redundant firefighting capability to back-up the automatic fire detection and suppression systems installed through the site, and that they are trained and equipped to handle the anticipated types of emergencies.
- 6.1.3 Ensure proper personal protective equipment (PPE) is available and maintained for all FS/FP personal to allow them to safely perform required duties and emergency response operations.

NOTE

The minimum scheduled staff is nine (9) Fire Services personnel for each shift complement. This staffing level typically consists of one officer, an alarm room operator, two entry, two back-up, two Emergency Medical Technician (EMT), and one pump operations/decon/etc.. Personnel involved with an offsite hospital transfer are considered available.

- 6.1.4 Take efforts to maintain the minimum scheduled staffing of nine (9) Fire Services personnel in order to optimize emergency response capability.
- 6.1.5 Ensure required mobile fire apparatus are provided and maintained to support firefighting activities and back up the fixed fire suppression systems.
- 6.1.6 Ensure manual fire suppression equipment and/or systems are provided so that at least one effective hose stream can reach all areas within an important building.
- 6.1.7 Ensure SCBAs are available for use by trained personnel in connection with emergency activities including fire fighters.
- 6.1.8 Ensure breathing air used in SCBAs meets a minimum quality of Grade D air.
- 6.1.9 Ensure portable fire extinguishers are available throughout active parts of the plant commensurate with the hazard and that the size, selection, and distribution of extinguishers are determined by using NFPA 10, *Standard for Portable Fire Extinguishers*, as guidance.
- 6.1.10 Ensure fire alarm systems report to a continuously manned location.
- 6.1.11 Ensure modifications and repairs are coordinated between maintenance, contractors, and FS/FP personnel to ensure proper system work is completed.

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- 6.1.12** Ensure all reported fires are investigated using a graded approach which includes investigations by fire officers, engineers, or by multidiscipline teams as warranted.
- 6.1.13** Ensure procedures are in place for the operation, testing, inspection, and impairment control of FPSs.
- 6.1.14** Ensure closure of valves on the water systems supplying fire suppression systems is controlled by a written permit system.
- 6.1.15** Control the valve closure permit system for valves on water systems supplying fire suppression systems.
- 6.1.16** Provide authorization as applicable to groups that may need to issue permits and operate FP valves.
- 6.1.17** Ensure procedures are in place for the operation, testing, inspection, and impairment control of FPSs.

NOTE

Maintenance is responsible for maintaining a reliable water supply and operates, maintains, and test the Sanitary Fire Water supply and High Pressure Fire Water System (HPFWS) including storage tanks, pumps, and piping under maintenance procedures and policies. FS/FP provides assistance to the maintenance group during testing and maintenance under maintenance procedures.

- 6.1.18** Ensure staffing and resources are available to assist Maintenance group during testing and maintenance of reliable water supply components that supply water to FPSs as needed.
- 6.1.19** Review and approve the training schedule and any changes there to, as well as the technical content of the training sessions/lesson plans.
- 6.1.20** Prepare Annual Fire Protection Summary Report using DOE Order 231.1-1A, *Environment, Safety and Health Reporting Manual*.
- 6.1.21** Ensure welding/burning/hot work operations are controlled by a written permit system to minimize the fire hazards and are in accordance with FBP-FP-PRO-00072, *Welding, Burning, and Hot Work*.
- 6.1.22** Ensure professional fire protection engineer and/or fire protection engineering organization services are provided to ensure the automatic fire protection systems are designed to meet the intent of the "improved risk" criteria used in the fire insurance industry.

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- 6.1.23** Ensure FP system configuration is maintained through plant procedures which prescribe the requirements for configuration management of FPSs and ensure system modifications and repairs are under control of the AHJ.
- 6.1.24** Ensure administrative procedures in effect require the operating staff to:
- Eliminate fire hazards by properly maintaining equipment and implementing good housekeeping practices.
 - Take prompt actions to manually suppress fires where possible without endangering personnel safety.
 - Take actions to mitigate the consequences of fires which cannot be manually suppressed which may involve shutdown and isolation of equipment containing toxic materials which are located in the fire area.

FSSM

- 6.1.25** Maintain FS/FP inspection, test, and maintenance (ITM) program.
- 6.1.26** Ensure required mobile fire apparatus are provided and maintained to support firefighting activities and back up the fixed fire suppression systems.
- 6.1.27** Ensure PPE is provided and maintained for FS/FP personnel to allow them to safely perform their duties.
- 6.1.28** Develop and maintain procedures and other FS/FP documents necessary to meet DOE, NFPA, and other requirements as necessary

FSSC

NOTE

The Relief Commander is responsible for relief of the FSSC functions as well as special projects and activities as assigned by FSM.

Technical Safety Requirements (TSR) minimum staffing levels include four Fire Services (Fire Fighters) personnel in addition to one FSSC which maintains consistency with industry standard (two for entry, sufficient backup support, and one officer). Personnel are on duty continuously to provide emergency response services and redundant firefighting capability to back up the automatic fire detection and suppression systems installed through the site.

Personnel involved with an offsite hospital transfer are considered available.

- 6.1.29** Ensure minimum staffing.

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- 6.1.30** Ensure Fire Fighters are trained and equipped to handle the anticipated types of emergencies.
- 6.1.31** Provide and maintain required fire apparatus to support firefighting activities and back up the fixed fire suppression systems.
- 6.1.32** Provide SCBAs for use by trained personnel in connection with emergency activities including firefighters.
- 6.1.33** Conduct FP assessments of facilities as scheduled.
- 6.1.34** Notify Utilities and other appropriate parties regarding status of FPS.
- 6.1.35** Notify the Plant Shift Superintendent (PSS) to support status assessments of FPS.
- 6.1.36** Ensure fire alarm systems report to a continuously manned location.
- 6.1.37** Ensure modifications and repairs, in conjunction with FPE, are coordinated between maintenance, contractors, and FS/FP personnel to ensure proper system work is completed.
- 6.1.38** Ensure emergency medical transportation by ambulance is operated by qualified personnel and equipped with necessary emergency equipment and supplies.
- 6.1.39** Enter work requests for maintenance or repairs on FPS and FP equipment as needed.
- 6.1.40** Conduct and oversee post-maintenance testing on FPS or FP equipment.
- 6.1.41** Maintain the Fire Protection Impairment permit system for applicable fire protection/suppression equipment that are impaired.
- 6.1.42** Provide authorization as applicable to groups needing impairment permits and to operate valves affecting FP systems.
- 6.1.43** Ensure emergency response to emergency incidents (such as: fire, rescue, process problems, spills, confined space rescue, hazardous materials, emergency medical, etc.) is provided.

FST/SC

- 6.1.44** Train FS/FP personnel in methods of confined space entry and hazardous material response.

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NOTE

The training program is equivalent to the State Certified Fire Fighter training curriculum and Emergency Medical Response personnel meet the requirements for state certification as emergency medical technicians. Qualified instructors provide a range of classroom and hands-on training to maintain standards of performance for all response personnel.

- 6.1.45** Maintain the FS training program and ensure it is in place to ensure firefighting personnel are adequately trained to handle the types of activities that may be called upon to perform, and to handle the anticipated types of emergencies encountered under the unique conditions found on-site.
- 6.1.46** Utilize the topics and associated frequencies as listed in this procedure in preparing a training schedule, which is forwarded to the FSM for approval.

NOTE

In general, training activities include firefighting, hazardous material response, confined space rescue, emergency medical response, radiological emergencies, and rescue. A live fire training facility is onsite to augment firefighting training.

Training Topics Covered and Associated Frequency

A. Annual Training Requirements

- SCBAs
- Hose Handling and Fire Streams
- Protective Clothing & Equipment
- Confined Space/Rescue Equipment
- Live Fire Training/Fire Ground Safety
- Bloodborne Pathogens
- Hazmat Refresher/DeCon Process/Level A Suites

B. Two Year Training Requirements

- Cardiopulmonary Resuscitation (CPR)
- Gas/Liquid Release Equipment

C. Three Year Training Requirements

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- Emergency Driving Skills
- D.** As Required (such as procedure changes, drill deficiencies, etc.)
- Fire Alarm Systems
 - Suppression Systems
 - Radiation/Gas/O₂ Instrumentation
 - Emergency Medical Technical (EMT) Refresher/Update (per state)
 - Fire Extinguishers (inspection, maintenance)
 - Radiological Worker
 - Fire Truck Operations
 - Firefighting Foam (equipment, methods)
 - Emergency Driving Skills
 - Fire fighter refresher and update (per state)
- E.** Drills
- Drills are conducted quarterly, as part of the plant emergency plan, as defined by FBP-EM-PRO-00037, *Emergency Management Drill and Exercise Program*.
 - Drills can cover/address topics such as firefighting, search/rescue, confined space, EMT, and Hazmat.

NOTE

Lessons learned, industry events, and results of problem report database reviews are also considered when revising and/or developing training sessions and lesson plans.

- 6.1.47** Revise and/or develop on an as needed basis training sessions/lesson plans taking into consideration unique site issues, national standard emergency response methodologies, and specific departmental needs.
- 6.1.48** Ensure training records are kept for all training activities.

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Fire Protection Engineer (FPE)

NOTE

The Fire Hazard Analysis (FHA) is documented in accordance with FBP-FP-PRO-00006, *Fire Hazard Analysis*.

- 6.1.49** Conduct a FHA for planned, new, or existing facilities meeting the requirements of DOE Order 420.1C Change 3, *Facility Safety*, using the guidance set forth in DOE STD 1066-2023, *Facility Safety*.
- 6.1.50** Perform and document periodic fire safety walk-downs of FBP PORTS Facilities, as necessary.
- 6.1.51** Coordinate testing of FPS, collect field data, and analyze and evaluate data from field testing of FPS to determine the capability of the system to operate within accepted design parameters.
- 6.1.52** **WHEN** identified, **THEN** assure automatic fire suppression systems are provided for areas containing safety systems.
- 6.1.53** Perform assessments as scheduled in the PORTS facilities in accordance with FBP-FP-PRO-00042, *Fire Protection Facility Assessments*.
- 6.1.54** Ensure building life safety features are maintained in an operable condition at all times including:
 - Exit passageways are clear of obstruction.
 - Fire/egress doors and associated hardware is functional.
 - Fire barriers are maintained.
 - FP systems are functional.
 - Emergency lighting is tested and remains operational.
- 6.1.55** Verify minimum requirements for operation of the following FP features are maintained, as required:
 - Fire doors
 - Fire rated walls
 - Fire detection and alarm systems
 - Fire suppression systems

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- Portable fire extinguishers

6.1.56 Verify the storage, processing, and handling of flammable and combustible materials are in accordance with applicable codes, standards, and procedures, as necessary.

Fire Fighters

6.1.57 Maintain a presence in the X-1007 Fire Station Alarm Room at all times, unless directed by the FSSC to vacate and support emergency field operations.

6.1.58 Perform inspection, testing, and surveillance of FPS as directed by the FSSC.

6.1.59 Respond to emergencies as instructed and perform required mitigation tasks as directed under the Incident Command System (ICS).

6.1.60 Perform tasks within the scope of training, protocols, procedures, and as directed by supervision.

CAHJ

6.1.61 Determine FP requirements for PORTS facilities.

6.1.62 Assess systems, programs, and facilities to assure regulatory compliance.

6.1.63 Provide oversight for the FP Program.

7.0 RECORDS

7.1 Records Generated

- A. Fire Protection Facility Assessments
- B. Fire Hazard Analysis Reports
- C. Lessons Learned documents
- D. Annual Fire Protection Summary Report

7.2 Requirements

Records generated or received as a result of performing this procedure shall be managed according to FBP-BS-PRO-00062, *Records Management Process*.

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8.0 DEFINITIONS/ACRONYMS

8.1 Definitions

- A. Authority Having Jurisdiction (AHJ)/Contractor Authority Having Jurisdiction (CAHJ)** – 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.
- B. Equivalency** – An alternate means of providing an equal or greater degree of fire safety than that afforded by strict conformance to prescribed codes and standards, or an applicable DOE directive requirement.
- C. Exemption** – The release from one or more requirements in a DOE directive.
- D. Fire** – Unplanned destructive and uncontrolled burning, including detonation and deflagration, as manifested by any or all of the following: flame, heat, or smoke.
- E. Fire Fighter** – A certified professional specialist who provides emergency response, fire safety and fire prevention functions, as well as the inspection, maintenance and testing of related equipment, under the direction of the FSSC.
- F. Fire Hazard Analysis (FHA)** – A comprehensive assessment of the hazards of and potential damage from fire in a building or group of buildings, which takes one of the following forms:
- **Building/Facility FHA** – Establishes the fire safety of the facility at the time it is issued.
 - **Preliminary/Project FHA** – Which establishes the fire protection requirements for a new building or a modification to an existing building.
 - **Transitional FHA** – Which evaluates the minimum fire protection needs during a major transition from an operating status to some other status.
- G. 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).
- H. Fire Protection Systems (FPSs)** – Any system designed to detect, extinguish, and limit the extent of fire damage or enhance life safety. Where redundant FPSs are required, any two of the following will satisfy that requirement. These include:

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- Automatic suppression systems, such as fire sprinklers, foam, gaseous, explosion suppression, or other specialized extinguishing systems plus appropriate alarms. An adequate supply, storage, and distribution system is an essential element.
- Automatic fire detection, occupant warning, manual fire alarm, and fire alarm reporting systems combined with properly equipped and adequately trained fire departments or brigades.
- Fire barrier systems or combinations of physical separation and barriers for outdoor locations.
- Other systems, such as alternate process control systems, as approved by the AHJ.

I. Fire Protection Design Analysis (FPDA) – An engineering analysis for non-nuclear facilities during or preceding the preliminary design to establish fire protection design criteria, including applicable national codes and consensus standards. Updated during the design process, the FPDA provides a comprehensive design review that ensures the fire protection requirements are incorporated into the design.

J. Fire Services Training Officer – The FSSC who maintains the training and certification program that ensures firefighting personnel are adequately trained to respond to various types of fire, rescue and emergency medical situations.

K. Safety Basis – Those aspects of the facility design basis and operational requirements relied upon by DOE to authorize operation. These aspects are considered to be important to the safety of facility operations.

8.2 Acronyms

- A. DSA** – Documented Safety Analysis
- B. EMT** – Emergency Medical Technician
- C. FPE** – Fire Protection Engineer
- D. FSM** – Fire Services Manager
- E. FSSC** – Fire Services Shift Commander
- F. FSSM** – Fire Services Section Manager
- G. HPFWS** - High Pressure Fire Water System
- H. SCBA** - Self-contained breathing apparatus

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9.0 SOURCE REFERENCES

- A. 10 CFR 851, *Worker Safety and Health Program*
- B. 29 CFR 1910, *Occupational Safety & Health Standards*
- C. 29 CFR 1926, *Safety and Health Regulations for Construction*
- D. DOE Order 420.1C, Chg 3, *Facility Safety*
- E. DOE Standard 1066-2023, *Fire Protection*
- F. FBP-FP-PDD-00001, *Fire Protection Program Description*
- G. FBP-PM-PDD-00001, *Integrated Safety Management System*
- H. FBP/PORTS-446, *Technical Safety Requirements for the X-345 and X-744G Facilities Portsmouth Gaseous Diffusion Plant Piketon, Ohio*
- I. National Fire Protection Association (NFPA), *All applicable Codes and Standards*
- J. NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*
- K. NFPA 801, *Standard for Fire Protection for Facilities Handling Radioactive Materials*
- L. POEF-FBP-001, *Basis for Interim Operation of Former Uranium Enrichment Facilities (FUEF) At the Portsmouth Gaseous Diffusion Plant Piketon, Ohio*

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Appendix A
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None