

PPPL	PRINCETON PLASMA PHYSICS LABORATORY ES&H DIRECTIVES	
	ES&HD 5008 SECTION 5, CHAPTER 4 ENVIRONMENTAL and PUBLIC PROTECTION	
Approved	Date: 2/2/12 Revision 3	Page 1 of 2

4.1 FACILITY OPERATING PROCEDURES

4.1.1 Facility operating procedures or technical specifications address the fire protection features of the facility that are required for safe operation and to mitigate potential fire hazards and resulting damage. When a fire protection feature for a facility is out-of service or damaged, compensatory measures shall be implemented until the system or equipment is restored to service. The operating procedures shall specifically define the compensatory measures to be implemented consistent with the significance of the impairment.

4.2 SAFETY ANALYSIS REPORTS

4.2.1 All Safety Analysis Reports (SAR) shall include a Fire Hazard Analysis that addresses, as a minimum, the items identified in 4.3, "Fire Hazard Analysis." The SAR shall also identify the fire protection features that are required for safe operation and to mitigate potential fire hazards and resulting damage, as well as the compensatory measures required if a system is impaired or damaged (Reference 4.1, "Facility Operating Procedures").

4.3 FIRE HAZARD ANALYSIS

4.3.1 Fire Hazards Analyses. Fire hazard analyses (FHAs), using a graded approach, must be conducted for all hazard category 1, 2, and 3 nuclear facilities, facilities that represent unique fire safety risks, and for new facilities or major modification to an existing facilities with value greater than \$150 million, or when directed by the responsible DOE authority.

4.3.2 The Fire Hazard Analysis shall address the following items as a minimum:

- A. Description of construction
- B. Essential safety class systems
- C. Fire protection features
- D. Description of fire hazards
- E. Life safety considerations
- F. Critical process equipment
- G. High value property
- H. Damage potential: Maximum Possible Fire Loss (MPFL) & Maximum Credible Fire Loss (MCFL)
- I. Fire Department response
- J. Recovery potential
- K. Potential for a toxic, biological and/or radiological incident due to a fire
- L. Emergency planning
- M. Security and safeguards considerations related to fire protection
- N. Natural hazards (earthquake, flood, wind) impact on fire safety

O. Exposure fire potentials

4.4 FACILITY CONTAINMENT/CONFINEMENT

4.4.1 Facility ventilation systems shall be protected against fire to preclude the release of radioactive, toxic, or other hazardous materials above established limits.

4.4.2 Alternatives to consider for accomplishing this goal may include the following:

- A. Use of sand filters
- B. Automatic water spray systems with de-misters
- C. Fire screens
- D. High temperature HEPA filters
- E. In addition, the “Filter Plenum Fire Protection Criteria” shall be used to assist in determining the level of needed protection.

4.5 LIQUID RUN-OFF CONTROL

4.5.1 Natural or artificial means of controlling liquid run-off from a credible fire shall be provided so that contaminated or polluting liquids will not escape the site, including potentially contaminated water resulting from fire fighting operations. The amount of fire water that must be controlled and the design of the containment system shall be determined on a case-by-case evaluation.