

FIRE PROTECTION AND PREVENTION

1.0 Objective

The objective of this surveillance is to ensure that the laboratory is implementing an effective program to minimize the potential for fires that could threaten the health and safety of the public or DOE's workers, or produce significant losses. In addition, the surveillance examines the effectiveness of steps taken to mitigate any fires that might occur. Finally, the surveillance provides an opportunity to evaluate compliance with requirements and standards for fire prevention and mitigation established by DOE.

2.0 References

- 2.1 DOE O 440.1A, *Worker Protection Management for DOE Federal and Contractor Employees*
- 2.2 29 CFR 1910, *Occupational Safety and Health Standards*
- 2.3 29 CFR 1926, *Safety and Health Regulation for Construction*
- 2.4 *DOE Fire Protection Manual*

3.0 Surveillance Activities

The surveillance activities involve verifying that (1) fire detection and suppression equipment is adequately tested; (2) controls are being effectively implemented to minimize the potential for fires; (3) documentation of potential fire hazards and plans to combat possible fires are current; and (4) design features to mitigate possible fires remain adequate.

The Facility Representative or Environmental, Safety, and Health Support Specialist performs the following activities:

- Activity 1 - Laboratory Walkdown
- Activity 2 - Observation of work involving a fire hazard
- Activity 3 - Review of Fire Hazards Analysis
- Activity 4 - Review of Pre-Fire Plans
- Activity 5 - Review of documentation for fire protection equipment testing

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Surveillance No.: _____

Facility: _____

Date Completed: _____

Activity 1 - Laboratory Walkdown

	<u>YES</u>	<u>NO</u>	<u>N/A</u>
1. Are fire extinguishers operable as evidenced by a current inspection tag?	_____	_____	_____
2. Are fire barriers intact?	_____	_____	_____
a. Are all penetrations located in fire barriers closed?	_____	_____	_____
b. Are seals present and intact around fire barrier penetrations?	_____	_____	_____
c. Are fire doors closed?	_____	_____	_____
3. Are isolation valves on fire protection headers locked in the open position or is the position electronically monitored in the control area or a Central Alarm Station?	_____	_____	_____
4. Are sprinklers unobstructed?	_____	_____	_____
5. Are other fire suppression systems such as gaseous, foam, or foam-water systems operable?	_____	_____	_____
6. Is the facility free from excessive accumulation of combustible materials?	_____	_____	_____
7. Are required fire mitigation equipment, including dampers, doors, detection systems, and suppression systems operable?	_____	_____	_____
8. If any components are inoperable, has appropriate compensatory action been taken?	_____	_____	_____
9. Can firefighters gain ready access to hose stations, standpipes, and fire hydrants?	_____	_____	_____

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YES NO N/A

10. Does the facility provide ready access to mobil fire fighting apparatus such as trucks?

Activity 2 - Observation of Work Involving a Fire Hazard

The Facility Representative or Environmental, Safety, and Health Support Specialist may select other activities that involve potentially significant fire hazards for observation. Such activities might include handling of flammable gases or materials, operations performed at high temperatures, or any other operations that may involve use of open flames.

11. If the work involves welding or brazing, has a Hot Work Permit been issued?

12. Are workers complying with the requirements of the Hot Work Permit?

13. If the work involves securing fire detection instruments, has a Fire Watch been established?

14. Is the Fire Watch performing effectively to detect possible fires?

Activity 3 - Review of Fire Hazards Analysis

The Facility Representative or Environmental, Safety, and Health Support Specialist selects an area of the facility covered by the fire hazards analysis and verifies that key assumptions in the analysis and important results from the analysis remain valid.

NOTE

Not all existing facilities will have fire hazards analyses. Skip this activity if a Fire Hazards Analysis has not been prepared.

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	<u>YES</u>	<u>NO</u>	<u>N/A</u>
15. Does the fire hazards analysis accurately identify the following:			
a. Combustible loadings in the area?	_____	_____	_____
b. Fire protection features?	_____	_____	_____
c. Safety class equipment present?	_____	_____	_____
d. Fire hazards?	_____	_____	_____
e. Means of egress from the area?	_____	_____	_____
f. Security considerations?	_____	_____	_____
g. Potential for release of toxic chemicals or radiological hazards?	_____	_____	_____
h. Potential for the fire to spread to other areas?	_____	_____	_____

Activity 4 - Review of Pre-Fire Plan

The Facility Representative or Environmental, Safety, and Health Support Specialist selects a pre-fire plan for a portion of their assigned facility and verifies that the plan reflects current conditions.

16. Does the pre-fire plan accurately reflect the following:			
a. Fire suppression equipment, including sprinklers, hose connections, and fire extinguishers?	_____	_____	_____
b. Safety-related equipment, wiring, and ventilation systems?	_____	_____	_____
c. Major fire vulnerabilities such as tanks, cabinets or drums containing combustibles, reactive chemicals, radioactive materials, or toxic chemicals?	_____	_____	_____
d. Means of attacking fires?	_____	_____	_____
e. Means of smoke removal?	_____	_____	_____
f. Fire barriers?	_____	_____	_____
g. Combustible loading?	_____	_____	_____
17. Does the pre-fire plan include a drawing of the area that accurately reflects the arrangement of major equipment, access and egress, and major fire vulnerabilities?	_____	_____	_____

18. Has the fire department conducted a walkthrough or facility tour within the last six months? _____

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	<u>YES</u>	<u>NO</u>	<u>N/A</u>
Activity 5 - Review of Documentation for Fire Protection Equipment Testing.			
19. Does documentation demonstrate that required tests have been completed to verify operability of fire and smoke detectors within the prescribed intervals?	_____	_____	_____
20. Do tests verify performance of the following for fire detection systems:			
a. Sensors?	_____	_____	_____
b. Local alarms?	_____	_____	_____
c. Alarms in local control areas?	_____	_____	_____
d. Remote alarms at central alarm stations or fire houses?	_____	_____	_____
21. Do tests ensure that fire detection equipment is returned to operable status after testing is completed?	_____	_____	_____
22. Does documentation substantiate that required tests to verify flow through the fire suppression system have been completed within the prescribed interval?	_____	_____	_____
23. Are flow tests completed for all portions of the fire suppression system?	_____	_____	_____
24. Are tests completed to verify that other fire-suppression systems such as gaseous, foam, or foam-water systems will perform as required?	_____	_____	_____
25. Do tests verify that alarms are generated by flow switches installed to detect discharges from the fire suppression system?	_____	_____	_____
26. Do tests ensure that equipment is returned to the required lineup following completion of the testing?	_____	_____	_____
27. Is documentation available to substantiate that installed fire pumps	h	a	v

e been tested to verify operability within the prescribed interval?

28. Do fire pump tests verify the following:

- | | | | |
|--|-------|-------|-------|
| a. Required flow at specified net developed head? | _____ | _____ | _____ |
| b. Proper functioning of auto-start instrumentation? | _____ | _____ | _____ |
| c. Proper performance of alignment for primary driver and pump? | _____ | _____ | _____ |
| d. Performance of support systems such as seal flush, service water cooling to motors, etc.? | _____ | _____ | _____ |

OTHER:

[illegible]

NOTES/COMMENTS:

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PERSONNEL CONTACTED: _____

**IF MORE SPACE IS NEEDED FOR FINDINGS, OBSERVATIONS, AND FOLLOWUP
ITEMS - USE ADDITIONAL SHEETS**

FINDINGS:

Finding No.: _____

Description: _____

Finding No.: _____

Description: _____

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Finding No.: _____

Description: _____

OBSERVATIONS:

Observation No.: _____

Description: _____

Observation No.: _____

Description: _____

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Observation No.: _____

Description: _____

FOLLOWUP ITEMS:

Followup Item No.: _____

Description: _____

Followup Item No.: _____

Description: _____

Followup Item No.: _____

Description: _____

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LABORATORY MANAGEMENT DEBRIEFED AND RESULTS: _____

Signature: _____ Date: _____

Facility Representative or
Environmental, Safety, and Health Support Specialist