

HIGHLY PROTECTED RISK INSPECTION PROGRAM

INTRODUCTION

The 6000 series of the Fermilab Environment, Safety, and Health Manual chapters describe the organization and structure of the Laboratory Fire Protection Program, incorporates the requirements of DOE Order 420.1, and complies with applicable laws, regulations, and the Work Smart set of ES&H standards included in the DOE contract.

This program is to provide an inspection methodology of all FNAL facilities consistent with the best protected class of industrial risks (“Highly Protected Risk”) and a method by which the facility data and inspection results are recorded and retained.

DEFINITIONS

Facility File – The master historical/ living document reflecting all changes to the building. Retained on the ESH Server.

Finding - A violation of a published standard. Published standards are FESHM chapters, the work smart standard set, and applicable DOE and executive orders (See FESHM [1040.1](#)).

Fire Protection Engineer (FPE) - trained and educated professional responsible for overseeing the overall implementation and development of the Fermilab fire protection systems.

frESHTRK- Environmental, Safety and Health Tracking System

Highly Protected Risk – a facility that is characterized by a level of fire protection of the best protected class of industrial risks.

Inspection Report – A report in letter format of the items identified during the HPR inspection. Serves as the support document to FrESHTRK entries. The document provides synopsis to the Division/Section (D/S) Head of the HPR inspection and the entries placed into frESHTRK by ESH requiring action on the part of the D/S.

Recommendation - An opportunity for improvement of a work process or practice that does not rise to the level of a finding. May also be referred to as a Best Management Practice (See FESHM [1040.1](#)).

RESPONSIBILITIES

The Division/Section (D/S) Heads are responsible for assuring that findings identified through the HPR Inspection process are addressed in a timely manner.

The Senior Safety Officer (SSO) or designee is responsible for:

- Facilitating the conduct of HPR inspections
- Addressing the issues placed in frESHTRK. (*See Note*)
- Only when required, updating the contents of the facility file and returning the report to ES&H within the allocated time period.

The Building Manager (FESHM 2050) is responsible for carrying out the responsibilities assigned to him/her in FESHM 2050 as they may be required in the HPR inspection process.

The ESH Fire Protection Engineer and Emergency Planner are responsible for:

- Developing and issuing a yearly schedule of buildings requiring an HPR inspection. Specific dates and times will be individually coordinated with the D/S SSO.
- During the course of the inspection providing possible solutions to findings for the D/S to consider, as appropriate.
- Drafting HPR Inspection report and providing to the Facility D/S Head SSO and ESH representative a letter of the issues identified during the inspection.
- Enter the issues identified in the inspection into frESHTRK.

PROGRAM ELEMENTS

The HPR program encompasses all aspects of fire protection at the Laboratory. The program includes inspection of fire prevention practices and procedures, quality construction, fire detection and suppression systems, verification of testing and maintenance of fire protection systems and equipment, and general review of processes and activities occurring within the building including basic housekeeping.

Highly Protected Risk – Facility Inspections

Fermilab maintains facilities that are characterized as a “best protected” class of industrial risk (Highly Protected Risk), equipped with an appropriate level of fire protection. The frequency of inspection depends on the mission criticality of the facility to the Laboratory. The loss of those facilities that would have an adverse impact on the Laboratory would have a higher frequency of inspection. The inspection schedule ranges from annually to once every 5 years. The ES&H FPE oversees the inspection process and maintains the inspection schedule. Nexus report format may be found at Appendix A.

Scheduling of Inspections

Prior to the beginning of the new calendar year, the ESH Emergency Planner will identify all building schedule for inspection during the upcoming year. This list will include the date of the last inspection to be used as a benchmark for scheduling purposes. Coordination with the D/S SSO will occur arranging the specific date and time of inspection for a facility.

Conduct of Inspection

On the date and time specified, the ES&H inspectors will meet the D/S representatives. It is recommended that someone familiar with the building and its operation accompany the D/S representatives and the inspectors. If there is a previous HPR inspection on file, the document will be used by the inspectors to spot check previous findings and to record new items.

During the inspection the ES&H Inspectors will be accompanied by a D/S representative with or without a building representative. DOE-FSO may elect to accompany the inspectors for select buildings.

Violation of life, health, safety orders, codes, or acceptable practices will be recorded by the inspection team. If the violation can be immediately corrected, then a comment on the correction will be annotated next to the finding.

Pictures will be taken of violations of life, health, or safety orders, codes or of acceptable practices. Pictures will be provided to the D/S, electronically, upon request.

The ESH inspectors will use the previous HPR inspection report to spot-check earlier findings and their status.

At the conclusion of the inspection, the Inspector will debrief all parties as to items found during the inspection which will require attention.

Reporting

The ESH Emergency Planner will include the addition of the findings and recommendations of the recent inspection to the Facilities File. Items will be annotated with the year of inspection followed by the sequence number of the item, (i.e. 06-01 inspection year 2006 and the first item recorded).

Information about the building or a process which is no longer valid will be struck through and current information included. If a finding has been corrected, the date that it has been noted will be recorded and precede the finding.

Processing of the Inspection Report

Within 48 hours of the date of the inspection, an Inspection Report will be electronically transmitted to the division/section SSO for action and to the D/S Head.

This report will identify only the current finding, recommendations and if there are any open findings from the last inspection.

D/S will be informed that the findings will be placed into frESHTRK and assigned to the D/S SSO or D/S designee for processing in accordance with the FNAL Quality Assurance process.

In the event there is significant change to the facility, contents or its mission, ES&H will provide to the D/S a copy of the Facility File (less all historical references), including the current findings and recommendations for updating. It is requested that within 30 days the D/S provide back to the ESH an update to the Facility File information.

Maintenance of Records

Facility Reports will be maintained in a PDF format on the ES&H Shared Volume/Fire Protection/Active Inspections, in the appropriate Division/Section CY folder.

Division/section responses will be filed by CY under a separate cover from the final report. Working documents will be filed under a third separate cover. The Inspection Report will serve as the support document to any frESHTRK entries.

Photographs

Photographs will be maintained on the ESH HSTG Server by year and D/S. Each picture will be named with the D/S name, building name, and the nature of problem. Division/Section may request copies of pictures taken during the inspection. Only pictures of the requestor's D/S will be released.



AD- BGW-sprinkler.jpg

Translates to Accelerator Division, Booster Gallery West issue with the sprinkler head.

APPENDIX A NEXUS REPORT OUTLINE

INTRODUCTION

Beginning in 1992, Fermilab contracted to have all real property accessed to determine the degree of compliance with the applicable fire and life safety standards. The intent of this report is to outline the obvious deficiencies or deviations from the codes and standards.

STANDARDS AND CODES

At the time of the original inspection the applicable portions of the following documents were used to originally evaluate the facility:

- a. DOE 6430.1A General Design (4/6/89)
- b. DOE Fire Protection Resource Manual
- c. DOE 5480.7A, Fire Protection (1/93)
- d. NFPA codes and standards including NFPA 101-1991 and NFPA 101M-1988. NFPA codes and standards available on 12/31/93 were used.
- e. The 1991 editions of the Uniform Building Code and Uniform Fire Code. The editions of the Uniform Building Code which the buildings were originally built under.
- f. Factory Mutual Loss Prevention Data Sheets. Data sheets available at Fermilab were used.

REPORT OUTLINE

- 1.0 PURPOSE
- 2.0 STANDARDS AND CODES
- 3.0 EVALUATION INPUT DATA
- 4.0 FACILITY DESCRIPTION
 - 4.1 CONSTRUCTION
 - 4.2 INTERIOR FINISH, FURNISHINGS AND DECORATIONS
 - 4.3 OCCUPANCY CHARACTERISTICS
 - 4.4 FACILITY CRITICALITY
 - 4.5 FACILITY VALUE
 - 4.6 MPFL AND MCFL
- 5.0 ALARM AND DETECTION SYSTEM DESCRIPTION
- 6.0 FIRE SUPPRESSION SYSTEM DESCRIPTION
 - 6.1 EXTERIOR FEATURES
 - 6.2 INTERIOR FEATURES
- 7.0 FIRE HAZARD DESCRIPTION AND EVALUATION
 - 7.1 EXTERIOR HAZARD DESCRIPTION AND EVALUATION
 - 7.2 INTERIOR HAZARD DESCRIPTION AND EVALUATION
- 8.0 LIFE SAFETY EVALUATION
 - 8.1 OCCUPANCY SEPARATION
 - 8.2 OCCUPANT LOAD
 - 8.3 NUMBER AND ARRANGEMENT OF EXITS
 - 8.4 EXIT CAPACITY
 - 8.5 TRAVEL DISTANCE, DEAD ENDS AND COMMON PATH OF TRAVEL
 - 8.6 EGRESS FIRE BARRIER EVALUATION
 - 8.7 EXIT MARKING AND LIGHTING

8.8 EMERGENCY PLANNING

9.0 FINDINGS

Items identified as a result of an HPR inspection which will require correction.

10.0 RECOMMENDATIONS

Items identified as a result of an HPR inspection that may be implemented by the division/section.