

Appendix D-3
Fire Protection
Advanced-Level Training

Contents

Introduction	D3-3
Objectives of Advanced-Level Training	D3-3
Required Training Courses:	D3-3
Fire Protection Inspector On-the-Job Training Activity	D3-5
(OJT-FP-1) Fire Protection Inspection	D3-6
Fire Protection Inspector Advanced-Level Signature Card.....	D3-7
Form 1: Fire Protection Inspector Advanced-Level Equivalency Justification	D3-8
Revision History Sheet for IMC 1245, Appendix D-3.....	D3-9

Introduction

Completion of Appendix C-7, "Fire Protection Inspector Technical Proficiency Training and Qualification Journal," to Inspection Manual Chapter 1245, "Qualification Program for Operating Reactor Programs," is strongly recommended before beginning activities or courses in this advanced-level training. You may complete the general proficiency requirements contained in Appendix B, "General Proficiency-Level Training and Qualification Journal," and the technical proficiency requirements in Appendix C-7 together with requirements in this training standard. The courses and the on-the-job training activity listed in this standard are voluntary and are not required for certification as a U.S. Nuclear Regulatory Commission (NRC) fire protection inspector.

Objectives of Advanced-Level Training

The objective of this new training standard is to provide advanced-level training in fire protection and to assist inspectors in preparing to evaluate reactor facilities that have transitioned to National Fire Protection Association (NFPA) 805, "Performance-Based Standard for Fire protection for Light Water Reactor Electric Generating Plants."

Required Training Courses

The first four courses listed below give instruction and training in the inspection of plants that have transitioned to NFPA 805. The remaining courses give additional training in classical fire protection.

1. NRC/Electric Power Research Institute (EPRI) training on NUREG/CR-6850, "EPRI/NRC-RES Fire PRA Methodology for Nuclear Power Facilities," issued September 2005 (all **five** modules):
 - Module 1, Probabilistic Risk Assessment (PRA)
 - Module 2, Electrical Analysis
 - Module 3, Fire Analysis
 - **Module 4, Human Reliability Analysis for PRA**
 - **Module 5, Advanced Fire Modeling**
2. System Analysis Program for Hands-On Integrated Reliability Evaluation (SAPHIRE) Basics (P-201)
3. System Modeling Techniques for PRA (P-200)
4. Human Reliability Assessment (P-203)
5. NFPA National Fire Alarm Code Seminar (NFPA 72)
6. NFPA Installation of Sprinkler Systems Seminar (NFPA 13)
7. NFPA Fire Pumps Seminar (NFPA 20)
8. NFPA Sprinkler Hydraulics Seminar

9. NFPA Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems Seminar (NFPA 25)
10. NFPA e-learning series, "Fire Stopping Series" (introduces the essential of fire stopping and the applicable codes and criteria; covers fire stopping materials, system selection, installation, and inspection)

The schedule of classes for the NFPA seminars can be found at <http://www.nfpa.org/images/ProDevCatalog.pdf>.

The schedule of classes for the NFPA e-learning series can be found at <https://nfpa.nextlms.com/lms/index.php?mode=coursecatalog&submode=production>.

Other online fire protection courses are available from the following sources:

- University of Maryland
<http://www.fpe.umd.edu/grad/grad-online-learning.html>
- Oklahoma State University
<http://ce.ceat.okstate.edu/currentcourses.asp>
- Worcester Polytechnic Institute
<http://cpe.wpi.edu/Individual/Distance/fire.html>

Fire Protection Inspector On-the-Job Training Activity

Advanced Fire Protection Training

- TOPIC:** (OJT-FP-1) Fire Protection Inspection
- PURPOSE:** The purpose of this activity is to acquaint you with the fire protection inspection process by having you participate in an inspection of a reactor facility that has transitioned to National Fire Protection Association (NFPA) 805, "Performance Based Standard for Fire Protection for Light Water Reactor Electric generating Plants."
- COMPETENCY AREAS:** TECHNICAL AREA EXPERTISE
- LEVEL OF EFFORT:** 40 hours
- EVALUATION CRITERIA:** At the completion of this activity, you should understand the regional fire protection inspection process for a plant that has transitioned to NFPA 805.
1. Explain the objectives of the triennial fire protection inspection for a plant that has transitioned to NFPA 805.
 2. Explain the difference between the triennial fire protection inspection for a plant that has transitioned to NFPA 805 and one that has not transitioned.
 3. Explain the regulatory requirements and licensing basis against which postfire safe-shutdown capability is assessed.
- TASKS:** The activities listed below shall be performed under the guidance of a subject matter expert.
1. Accompany a team of regional inspectors during a fire protection inspection at a plant that has transitioned to NFPA 805.
 2. Discuss the evaluation criteria with a subject matter expert.
 3. Before the inspection, review any documents the team leader deems necessary.
 4. Participate with the inspection team leader and the regional senior risk analyst in the selection process to determine which fire areas or zones are to be inspected in this particular inspection.
 5. Review NFPA 805, 2001 Edition.
 6. Complete any other task given by the inspection team leader.
- DOCUMENTATION:** Fire Protection Inspector Advanced-Level Signature Card OJT-FP-1.

Fire Protection Inspector Advanced-Level Signature Card

Inspector Name: _____	Employee Initials/ Date	Supervisor's Signature/ Date
Training Courses for Fire Protection Inspector		
NRC/EPRI NUREG/CR-6850 Training (all five modules): Module 1 PRA Module 2 Electrical Analysis Module 3 Fire Analysis Module 4 Human Reliability Analysis for PRA Module 5 Advanced Fire Modeling	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____
System Analysis Program for Hands-On Integrated Reliability Evaluation (SAPHIRE) Basics (P-201)		
System Modeling Techniques for PRA (P-200)		
Human Reliability Assessment (P-203)		
National Fire Protection Association National Fire Alarm Code Seminar (NFPA 72)		
National Fire Protection Association Installation of Sprinkler Systems Seminar (NFPA 13)		
National Fire Protection Association Fire Pumps Seminar (NFPA 20)		
NFPA Sprinkler Hydraulics Seminar		
NFPA Inspection, Testing and Maintenance of Water Based Fire Protection Systems (NFPA 25)		
NFPA e-Learning Series "Fire Stopping Series"		
On-the-Job Training Activity		
OJT-FP-1 Participate in a regional fire protection inspection of a plant that has transitioned to NFPA 805		

This signature card must be accompanied by the appropriate Form 1, Advanced-Level Equivalency Justification, if applicable.

Supervisor's signature indicates successful completion of all required courses and activities listed in this training standard.

Supervisor's Signature/Date _____

Copies to: Inspector
Human Resources Office
Supervisor

Form 1: Fire Protection Inspector Advanced-Level Equivalency Justification

Inspector Name: _____	Identify equivalent training and experience for which the inspector is to be given credit
Training Courses for Fire Protection Inspector	
NRC/EPRI NUREG/CR-6850 Training (all five modules): Module 1 PRA Module 2 Electrical Analysis Module 3 Fire Analysis Module 4 Human Reliability Analysis for PRA Module 5 Advanced Fire Modeling	_____ _____ _____ _____
System Analysis Program for Hands-On Integrated Reliability Evaluation (SAPHIRE) Basics (P-201)	
System Modeling Techniques for PRA (P-200)	
Human Reliability Assessment (P-203)	
National Fire Protection Association National Fire Alarm Code Seminar (NFPA 72)	
National Fire Protection Association Installation of Sprinkler Systems Seminar (NFPA 13)	
National Fire Protection Association Fire Pumps Seminar (NFPA 20)	
NFPA Sprinkler Hydraulics Seminar	
NFPA Inspection, Testing and Maintenance of Water Based Fire Protection Systems (NFPA 25)	
NFPA e-Learning Series "Fire Stopping Series"	
On-the-Job Training Activity	
OJT-FP-1 Participate in a regional fire protection inspection of a plant that has transitioned to NFPA 805	

Supervisor's Recommendation Signature/Date _____

Division Director's Approval Signature/Date _____

Copies to: Inspector
 Human Resources Office
 Supervisor

Revision History Sheet for IMC 1245, Appendix D-3

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
N/A	07/08/09 CN-09-017	Initial issuance. Completed 4-year historical CN review.	None	N/A	ML091590710
N/A	12/29/11 CN-11-044 ML11166A136	This revision updates required training.	None	N/A	ML11340A128