INSPECTION PROCEDURE 64705

PART 52, FIRE PROTECTION OPERATIONAL PROGRAM

PROGRAM APPLICABILITY: 2504

64705-01 INSPECTION OBJECTIVES

This inspection is performed during the plant construction and startup phases, prior to fuel load of the plant, to verify the operational readiness of the Fire Protection Program (FPP) as specified in the final safety analysis report (FSAR), and as required to transition to power operations. This inspection procedure addresses FPP features that are not examined by the Inspections, Tests And Acceptance Criteria (ITAAC) procedures.

64705-02 INSPECTION REQUIREMENTS

02.01 Verify that the COL holder has effectively implemented the operational features of the FPP to protect SSCs important to safety from the effects of fire and explosion and to ensure that a FP system failure or inadvertent operation does not adversely impact the ability of the SSCs important to safety to perform their safety function.

02.02 Verify the adequacy and operational readiness of FPP administrative policies, procedures and programs to ensure the protection of SSCs important to safety during and after a fire.

02.03 Verify that the FPP complies with the requirements of 10 CFR 50.48 for operational aspects of the program that are not assessed by the ITAAC inspections.

64705-03 INSPECTION GUIDANCE

03.01 The inspection should utilize a multi-disciplined team of inspectors, including a Fire Protection (FP) engineer and regional inspectors. In accordance with the scope and focus of the inspection, the members of the team should have experience in the following disciplines: fire protection; plant operations; abnormal and emergency operating procedures; fire response procedures; quality assurance (QA); and configuration control. The inspection team leader will develop an initial inspection plan outline and provide it to each team member.

03.02 The following information should be requested from the licensee as appropriate to support the scope and focus of the planned inspection:

a. Description of the license holder's FP and engineering organization, detailing the responsibilities', and authorities' of each position. The documents should also include managerial points of contact for engineering and operating organizations and should detail the availability of knowledgeable operating and engineering organization personnel who are to be identified as technical points of contact during the inspection.

b. A summary description of the FPP plant change evaluation process, including methodologies and acceptance criteria.

c. Specific unique licensee commitments and NRC approvals related to programmatic aspects of the FPP, e.g., deviations from regulatory requirements.

d. Sample procedure describing required fire brigade and operator actions in the event of a fire in a typical fire area.

e. Description of pre-operational and startup testing for FPP SSCs

f. Summary description of fire brigade qualification and training program, including drills and drill critiques (including drills with off-site responders).

g. If available, provide fire protection SERs, FSAR, fire hazard analysis (FHA), fire protection administrative procedures (i.e., general employee training, pre-fire plans, documents pertaining to fire watch training, control of ignition sources and combustibles, etc.), design certifications for FP systems, the COL, and a current approved controlled copy of the fire protection plan.

03.03 Prior to conducting the inspection, team members should review the approved FPP description in the FSAR including the FHA, the safety evaluation report for the design certification document (if applicable), and the License, as appropriate for the scope and focus of the inspection.

a. Review the FPP organization to verify that the staffing levels and qualifications are appropriate and in accordance with the approved FPP and that adequate management oversight is provided.

b. Review FPP procedures and programs to verify that they adequately implement the programmatic commitments in the FSAR and SERs.

c. Verify that general employee fire training includes employee knowledge of combustible and ignition source control procedures, classes of fire (by fuel type), extinguishing agent selection based on fire classification, and site-specific fire reporting procedures.

d. Verify that fire watch training includes annotation of fire watch tour and work control logs, control of work in accordance with work permits, plant area specific combustible control, fire reporting, proper use of extinguishing agents, and

knowledge of fire hazards associated with activities such as welding, grinding and cutting.

03.04 Verify that the implementation of the FPP includes administrative controls to minimize fire hazards in the areas containing SSCs important to safety through combustible and ignition source control.

a. Control of Combustibles - Verify that the license holder's administrative control procedures control transient combustible materials. Fire prevention procedures should consider potential vulnerabilities associated with large quantities of combustible material being temporarily or permanently stored in or adjacent to critical plant areas (e.g., ion exchange resins, lubrication oil, wooden scaffolding, anti-contamination clothing).

b. Control of Ignition Sources - (e.g. welding, brazing, flame cutting) Verify that the license holder's administrative control procedures control all welding, brazing, flame cutting, and other hot work performed in the plant. NFPA 51B, "Standard for Fire Prevention in Use of Cutting and Welding Processes." includes provisions for safeguarding the hazards associated with welding and cutting operations.

03.05 Verify that the license holder has established a qualified plant fire brigade program with appropriate procedures. Also, verify that the fire brigade is appropriately equipped (i.e., turnout gear, extra hose, communications equipment, pre-fire plans, etc.) for fighting fires.

a. Verify that the fire brigade includes the required number of trained fire fighting personnel whose expected responsibilities during a fire event do not conflict with their fire brigade duties.

b. Verify that fire fighting pre-plans identify the plant areas containing SSCs important to safety and the locations and layout of equipment, including power and communication (information and control) cables, important to safety within those areas. Verify that the pre-fire planning identifies hazards (i.e., energized equipment, radiation/contaminated areas, etc.) as necessary.

c. Verify that fire fighting planning identifies recommended suppression agent and fire fighting precautions (e.g., considerations to be taken when applying specific suppression agents in specific plant locations) for specific plant areas and equipment.

d. Verify that fire fighting planning addresses expected requirements for smoke removal during and after the fire.

e. Verify that fire fighting planning prepares the fire brigade members to overcome potential security related access problems (such as locked or electrically failed-shut doors) and health physics related issues affecting access for fires in

radiologically controlled/high radiation areas. Verify that enhanced modes of security response will not impede the fire brigade's ability to respond to a fire.

f. Verify that fire drill procedures include requirements for the number and identity of participants; effective/challenging scenarios; qualification of participants; procedures on documentation; and drill reports with critiques.

g. Verify that the implementation of the FPP includes a procedure to ensure that specified fire fighting agents are available in appropriate quantities for the expected fires.

h. Verify that the pre-fire plans include fire brigade fire fighting strategies appropriate for the expected fire hazards in each fire area containing important-to-safety equipment and cables.

i. Verify that the offsite fire fighting organization can provide adequate backup and support for the plant fire brigade, that procedures are in place for coordinating fire fighting activities, including drills, and that the offsite organization will receive appropriate training for dealing with nuclear plant fires and plant-specific conditions.

03.06 Verify that the license holder has effectively implimented a QA program that provides assurance that the FP systems are designed, fabricated, erected, tested, maintained, and operated so that they will function as intended.

03.07 Verify license holder's operational readiness of the FPP.

a. Verify that the permanent FPP is in place and operational according to program requirements.

b. Verify that punch list items for construction and installation of FP systems that have been transferred to the operations organization for completion are either completed or are converted to maintenance work order items with appropriate expected completion times. Assess the status of punch list items which constitute incomplete construction work for which management controls and possible temporary compensatory measures are required to ensure operational readiness. Evaluate management oversight and involvement in daily work activities.

03.08 Verify that the license holder has implemented an appropriate change evaluation program for the FPP that conforms to 10 CFR § 50.59, "Changes, Tests and Experiments."

a. Verify that the implementation of the engineering design change process for the FPP is sufficient to ensure that unapproved FPP modifications are not made.

b. Verify that the guidance contained in the procedures is sufficient to evaluate the engineering design changes for the FPP to ensure that plant safety is

maintained. Guidance should include acceptance criteria for changes that do not require review and approval by the NRC.

c. Verify that the change process requires reporting all changes to the FSAR as required by 10 CFR § 50.71(e), Maintenance of Records, Making of Reports.

d. Verify that the training and qualification requirements for personnel that prepare, review, or approve 10 CFR § 50.59 safety evaluations and applicability determinations, and for personnel that conduct 10 CFR § 50.59 training are in accordance with commitments.

03.09 Verify that the pre-operational and startup testing program for FP systems and components provide assurance that the equipment is ready for plant commercial operation.

a. Verify that the pre-operational tests planned or performed demonstrate that FP systems and equipment are ready for startup testing.

b. Verify that the startup tests planned or performed demonstrate that FP systems and equipment are ready for full operation to support plant commercial operation.

c. Review test data and results to evaluate the performance and integrity of the as-built FP systems and components. This includes test acceptance criteria and test procedures. Written test procedures for startup tests should incorporate the requirements and acceptance limits contained in applicable design documents.

64704-04 RESOURCE ESTIMATE

Approximately 180 hours of direct inspection effort should be required to implement this inspection procedure. The inspection of the licensee's operational readiness of the FPP will require three individuals with the knowledge base outlined above. The actual hours required to complete this inspection may vary from the estimate. The 180 inspection hours are an estimate for planning, budgeting and scheduling purposes.

64704-05 REFERENCES

Regulations:

Code of Federal Regulations, Title 10, "Energy," Section 50.48, "Fire protection."

Code of Federal Regulations, Title 10, "Energy," Section 50.59, "Changes, tests, and experiments."

Code of Federal Regulations, Title 10, "Energy," Part 50, Appendix A, "General Design Criterion 3 - Fire Protection."

Code of Federal Regulations, Title 10, "Energy," Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel reprocessing Plants."

Code of Federal Regulations, Title 10, "Energy," Part 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants."

Regulatory Guides:

Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants," Revision 1 (in preparation).

Generic Letter:

Generic Letter 77-02, "Fire Protection Functional Responsibilities," August 1977. (ML010850152)

National Fire Protection Association Codes and Standards:

NFPA 1, Uniform Fire Code," National Fire Protection Association, Quincy, Massachusetts.

NFPA 51B, "Standard for Fire Prevention During Welding, Cutting, and Other Hot Work," National Fire Protection Association, Quincy, Massachusetts.

NFPA 600, "Standard on Industrial Fire Brigades," National Fire Protection Association, Quincy, Massachusetts.

64704-06 PROCEDURE COMPLETION

The procedure is completed when the plant is transitioned to inspection under the ROP. Inspection sample size shall be determined based on the plant design, and the licensee's performance.

END

Attachment 1: Revision History

Attachment 1

REVISION HISTORY FOR IP64705

Commitment Tracking Number	Issue Date	Description of Change	Training Required	Training Completion Date	Comment Resolution Accession Number
		Completed 4 year historical CN search. Completed incorporation of comments from all 4 regions.	None	N/A	N/A
	10/03/07 CN 07-030	Initial Issue to support inspections of operational programs described in IMC 2504, NON-ITAAC INSPECTIONS.	None	N/A	ML070570153