NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
James A. FitzPatrick Nuclear Power Plant	05000333	01 OF 05

TITLE (4)
Fire Protection System Functional Test Procedure Weaknesses

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
12	21	93	93	027	00	01	20	94	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)					
		20.402(b)		20.405(c)		50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	100	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)	OTHER
		20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Mr. Donald Simpson, Senior Licensing Engineer	(315) 349-6361

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

The plant was operating at 100 percent power in the Run mode. Technical Services staff had completed an initial adequacy review of the fire protection functional test procedures using improved administrative controls for guidance in their review. The review identified that heat detectors located in the Standby Gas Treatment system filter trains were not being functionally tested as required by the Technical Specifications. Additional weaknesses associated with testing of the Reactor Building fire protection water spray curtains and pre-action sprinkler systems located in the Emergency Diesel Generator and Recirculation Motor Generator rooms are also reported in order to provide a complete summary of the adequacy review. The test program was not adequate to ensure proper automatic actuation of these systems in the event of a fire. Test procedures were revised and appropriate testing completed with satisfactory results. These testing weaknesses were the result of inadequate procedure development and poor administrative controls. Improved administrative guidance which controls the development, review and revision of test procedures will prevent these types of procedure weaknesses in the future.

EIIS Codes are in []

Event Description

On December 21, 1993, the plant was operating at 100 percent power with the reactor mode switch in Run. Technical Services engineers were conducting an adequacy review of all system functional test procedures using improved administrative controls for test procedure review. Fire protection functional test procedures were being given an accelerated adequacy review because of weaknesses identified during a review of the Carbon Dioxide [LW] fire suppression testing procedures in August, 1993. These weaknesses were reported in LER-93-018-01. A programmatic weakness in the testing of fire protection hose stations was reported in LER-93-024. NYPA committed to completion of an adequacy review of all fire protection functional test procedures by December 31, 1993.

On December 21, 1993, reviewers determined that heat detectors located in the Standby Gas Treatment (SGT) system [BT] filter trains were not being functionally tested. This testing omission was determined to be reportable in accordance with 10CFR50.73(a)(2)(i)(B).

The initial adequacy review of fire protection functional test procedures is now complete. In addition to the reportable December 21, 1993, event, this report describes additional test procedure weaknesses identified as a result of the review.

On December 10, 1993, it was determined that the functional test procedures for the Reactor Building [NG] fire protection [KP] water spray curtains were not adequately testing heat detector actuated solenoid valves to ensure that automatic operation of the spray curtains would occur in the event of a fire in the area. The test procedures, as written, verified proper operation of the heat detectors and independently confirmed that water would flow through the spray nozzles, however, testing did not adequately demonstrate that the heat detectors would energize the solenoid valve or that energizing the solenoid valve would open the spray curtain flow control valve. The spray curtains were declared inoperable and roving fire watch patrols established in the affected areas. The test procedures were revised and functional testing performed. All solenoid valves tested satisfactory except that one failed to reset upon system restoration to normal. This failure to reset did not impair proper initiation of water curtain sprays. Following repairs all Reactor Building fire protection water spray curtains were declared operable on December 11, 1993. The spray curtains were administratively inoperable for approximately one day.

On December 14, 1993, it was determined that the functional test procedures for the Emergency Diesel Generator room [EK] sprinkler systems were not adequately testing the electric actuation of the solenoid valves which control the automatic opening of the sprinkler flow control valves to charge the sprinkler header. The test procedures as written, verified proper operation of the heat detectors and independently confirmed proper manual actuation, however, testing did not adequately demonstrate that the heat detectors would energize the solenoid valves or that solenoid actuation would result in automatic charging of the sprinkler header. The Emergency Diesel Generator sprinkler systems were declared administratively inoperable and compensatory fire watches stationed. The test procedures were revised, testing completed satisfactorily and the sprinkler systems declared operable at 1952 hours on December 14, 1993. The sprinkler systems were administratively inoperable for approximately six hours.

On December 16, 1993, the functional test procedure for the Recirculation [AD] Motor Generator Set Room sprinkler system was found to have the same weakness that was identified in the Emergency Diesel Generator room sprinkler system test procedures. The test procedure was revised and retesting completed satisfactorily. The sprinkler system was administratively inoperable for less than one day.

On December 21, 1993, at approximately 1615 hours, it was determined that heat detectors located in the Standby Gas Treatment (SGT) system [BH] room, located several feet above the respective SGT train, were being tested to meet the requirement of Technical Specification Table 3.12.1. Heat detectors physically located inside the SGT filter trains, which should also have been tested in accordance with the Technical Specification, were not being functionally tested. The Standby Gas Treatment train water spray systems were declared inoperable, test procedures were immediately revised and testing completed with satisfactory results. The Standby Gas Treatment train water spray systems were administratively inoperable for less than one hour. This condition was determined to be reportable in accordance with 10CFR50.73(a)(2)(i)(B).

Cause

The test procedure weaknesses were caused by inadequate test procedure development, review and approval (Cause Code E). Poor administrative control over periodic review and approval of the surveillance test program permitted the testing weaknesses to go undetected since their initial implementation.

Analysis

These procedure weaknesses could have resulted in a condition where inoperability of these components would not have been detected and could have resulted in the failure of the affected system to automatically perform its intended function.

In the case of the Reactor Building fire protection water spray curtains, failure of the solenoid valves could have resulted in a failure of the fire curtains to automatically actuate in the event of a fire. The similar testing weakness of the Emergency Diesel Generator and Recirculation Motor Generator Room sprinkler flow control solenoid valves could have resulted in a failure of these systems to automatically charge the sprinkler header upon detection of a fire.

Because detection systems were operable at all times and revised testing demonstrated proper solenoid operation, the safety significance of these weaknesses is low. The site fire brigade would have been dispatched to the scene upon first indication of a fire and the water spray curtains or the sprinklers could have been manually actuated.

The Emergency Diesel Generator and Recirculation Motor Generator room sprinkler systems were backed up by continuously operable detection systems and other fire protection equipment. In addition, the sprinkler systems were manually operable as required by the Technical Specifications.

The failure to test the heat detectors located in the filter plenums of the Standby Gas Treatment System trains is a violation of Technical Specification Table 3.12.1, and is reported under 10CFR50.73(a)(2)(i)(B). The heat detectors that were being tested to meet the Technical Specification requirement are physically located in the room above the two Standby Gas Treatment trains. Although it is unlikely that those detectors would have provided early detection of combustion inside a filter train, they did ensure proper operation of the alarm function for the Standby Gas Treatment room. Because revised testing demonstrated proper operation of the detectors located in the filter plenums; the safety significance of this testing omission is low.