

James A. FitzPatrick
Nuclear Power Plant
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Resident Manager

June 15, 1992
JAFP-92-0462

United States Nuclear Regulatory Commission
Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

SUBJECT: DOCKET NO. 50-333
LICENSEE EVENT REPORT: 92-021-00 - Unauthorized
Temporary Modification of
Relay Room Cooling

Dear Sir:

This report is submitted in accordance with 10 CFR 50.73(a)(2)(ii)(B).

Questions concerning this report may be addressed to
Mr. W. Verne Childs at (315) 349-6071.

Very truly yours,

HARRY P. SALMON, JR.

HPS:WVC:KA:lar

Enclosure

cc: USNRC, Region I
USNRC Resident Inspector
INPO Records Center

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ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) James A. FitzPatrick Nuclear Power Plant										DOCKET NUMBER (2) 0 5 0 0 0 3 3 3			PAGE (3) 1 OF 0 5		
TITLE (4) Installation of Unauthorized Temporary Modification Causes Operation of Relay Room Cooling in a Manner Outside of Plant Design Basis															
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(S)			
0 5	1 4	9 2	9 2	0 2 1	0 0 0	6	1 5	9 2				0 5 0 0 0			
												0 5 0 0 0			
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50. (Check one or more of the following) (11)													
N		20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)	
POWER LEVEL (10)		0 0 0				20.406(a)(1)(i)				50.73(a)(2)(iv)				73.71(c)	
		20.406(a)(1)(ii)				50.38(c)(1)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text NRC Form 366A)	
		20.406(a)(1)(iii)				50.38(c)(2)				50.73(a)(2)(viii)					
		20.406(a)(1)(iv)				50.73(a)(2)(i)				50.73(a)(2)(ix)(i)					
		20.406(a)(1)(v)				X 50.73(a)(2)(iv)				50.73(a)(2)(ix)(ii)					
		20.406(a)(1)(vi)				50.73(a)(2)(ii)				50.73(a)(2)(ix)(iii)					
LICENSEE CONTACT FOR THIS LER (12)															
NAME W. Verne Childs, Senior Licensing Engineer										TELEPHONE NUMBER					
										AREA CODE 3 1 5 3 4 9 - 6 0 7 1					
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)															
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE					SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		
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 fifteen single-space typewritten lines) (16)

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The plant was shutdown and in the cold condition for maintenance and refuel with the reactor defueled. One train of relay room [NA] cooling was declared inoperable on 4/7/92 when a walkdown of the Emergency Service Water (ESW) [BI] system revealed the presence of an unauthorized temporary modification of a temperature control valve (TCV) on one train of redundant relay room air handling-cooling units. The TCV had been temporarily modified on 9/6/90 when the TCV actuator was removed for shipment to the manufacturer for repair. The TCV valve stem was restrained in the fail-safe maximum cooling position by using wire. The method of restraining the valve stem in the desired position was not subjected to an engineering evaluation. Since 9/6/90, the back-up cooling for the redundant cooling train was out of service for maintenance for a total of 18 hours. During this 18-hour period the plant was operated outside of the design basis as described in the Final Safety Analysis Report. An engineered temporary modification of the TCV will be completed prior to fuel loading. LER-92-030 reported a similar event involving an unauthorized modification.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (PA30), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

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Event Description

The plant was shutdown and in the cold condition for maintenance and refuel with all irradiated fuel stored in the spent fuel pool. On April 7, 1992 plant engineering personnel discovered that a temperature control valve associated with one relay room [NA] air handling unit cooling coil had been temporarily modified on September 6, 1990 resulting in one train of cooling for the relay room being considered inoperable since September 6, 1990. During the ensuing time period the back-up cooling water supply to the redundant air handling unit was removed from service on two (2) occasions during December 1990 for maintenance. As a result, the plant was operated outside of the design bases as described in the Final Safety Analysis Report (FSAR) for two periods of time totaling approximately 18 hours.

The relay room ventilation system [VI] is serviced by two full capacity redundant units, each consisting of air handling-cooling units (70AHU-12A and 70AHU-12B) and recirculation exhaust fans. In the event of failure of both chilled water systems [KM], the air handling-cooling unit coils are supplied with normal service water [KG] or emergency service water [BI] by manual realignment of valves in the cooling water piping. Operation of one air handling-cooling unit is necessary during normal plant operation, during shutdown, and during design basis accident conditions.

The cooling water piping and valve arrangement for each air handling-cooling unit includes temperature control valves (70TCV-120A and 70TCV-120B) which are designed to control temperature by modulating the position of the temperature control valve in response to temperature control signals. The position of the temperature control valves (and thus the amount of cooling water which bypasses the cooling coil) is controlled by an electro-hydraulic actuator. Since it was necessary to return the actuator to the manufacturer for repair, a work request was prepared for removal of the actuator and to secure the temperature control valve in the "maximum cooling" (no bypass flow) position.

On September 6, 1990, Maintenance personnel electrically isolated the actuator for 70TCV-120B using the protective tagging procedure and removed the actuator. Maintenance personnel also, as directed by the work request, physically restrained the valve stem of 70TCV-120B in the maximum cooling position by using wire to hold the valve stem in position. No documentation of the temporary modification of valve 70TCV-120B by using wire to restrain the valve stem in the maximum cooling position was initiated.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

As a result, no engineering evaluation of the adequacy of restraining the valve stem (in the maximum cooling position) by using wire under normal or design basis conditions (such as during postulated seismic events) was conducted. The unauthorized temporary modification of 70TCV-120B remained undiscovered until the emergency service water system engineer discovered it during a system walkdown on April 7, 1992.

Following discovery of the unauthorized temporary modification of 70TCV-120B, relay room air handling-cooling unit 70AHU-12B was administratively declared inoperable and an investigation was initiated to determine if the redundant unit (70AHU-12A) had been inoperable at any time during the period when 70AHU-12B was inoperable due to the unauthorized temporary modification of 70TCV-120B.

Investigation revealed that emergency service water Train A supply (back-up cooling water supply) for 70AHU-12A was out of service on two occasions for time periods totaling approximately 18 hours. While cooling for the relay room was never actually lost during the 18-hour time period, because the normal chilled water supply to 70AHU-12A and 70AHU-12B was in service and valve 70TCV-120B remained in the proper (maximum cooling) position, both air handler-cooling units are considered to have been inoperable during the 18-hour period.

The Plant Operating Review Committee reviewed the engineering evaluation of the unauthorized temporary modification and the evaluation of system operability on May 14, 1992. As a result of this review, it was determined that the condition required a report under 10 CFR 50.73.

Cause

The event was caused by personnel error (Cause Code A). Operating and maintenance personnel failed to consider the restraining of the valve stem of 70TCV-120B in the maximum cooling position to be a temporary modification which required prior evaluation and approval. The operating and maintenance personnel involved in removing the actuator for valve 70TCV-120B and restraining the valve stem in the maximum cooling position (as stated on the work request) did not question whether or not such action effected operability of the equipment or deviated from the design of the system as described in the FSAR for design basis events such as seismic events and did not request engineering assistance to provide assurance that the planned work was acceptable with respect to the design basis.

Since Operations personnel did not consider 70AHU-12B inoperable following the unauthorized temporary modification of 70TCV-120B, the planned maintenance work which removed emergency service water Train A

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from service on two occasions for approximately 18 hours was not recognized as an activity which resulted in both trains being inoperable.

Analysis

FSAR, Section 9.9.3.11, discusses cooling of the relay room including the use of normal service water or emergency service water in the event of failure of both chilled water systems. The FSAR discussion also notes that the relay room air handling and cooling must operate at all times during normal, shutdown, and design basis conditions. During the 18 hours when emergency service water Train A was not available to supply 70AHU-12A due to the maintenance outage, and while redundant air handling-cooling unit 70AHU-12B is considered to have been inoperable due to the unauthorized temporary modification of 70TCV-120B, the FSAR design basis requirement to provide relay room cooling at all times (including during design basis seismic events) could not be met.

Specifically, the restraining of the valve stem on 70TCV-120B was not an "engineered" device and thus no engineering basis exists to provide assurance that valve 70TCV-120B would remain in the maximum cooling position during design basis accident conditions.

The event is being reported under 10 CFR 50.73(a)(2)(ii)(B) as a condition that is outside the design basis of the plant.

Corrective Action

1. The wire used to restrain 70TCV-120B in the maximum cooling position will be replaced with an "engineered" device capable of withstanding design basis accident conditions (including seismic events) prior to the loading of fuel. This approved temporary modification will provide assurance that redundant relay room air handling-cooling units 70AHU-12A and -12B will remain operable during postulated fuel handling accidents and other design basis events such as seismic events. Due date July 1, 1992.
2. Operations, Work Control Center, and Maintenance personnel will be required to review this LER and procedural requirements for the control of temporary modifications to reduce the probability of recurrence. Due date August 15, 1992.

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ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 800 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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3. A plan for review of work requests and associated documentation for safety-related systems and components will be developed and implemented to evaluate the potential for the presence of additional unauthorized temporary modifications. Evaluation of the nature and number of deficiencies discovered by the review (if any) will provide an indication of the scope of the problem and will be used to determine if additional corrective action is necessary prior to plant start-up. Scheduled completion date August 15, 1992.
4. A plan will be developed and implemented for walkdown (inspection) of a portion of safety-related electrical and fluid systems for the presence of unauthorized temporary modifications. Potential radiation exposure will be considered in the selection of the systems (or portions of systems) to be subjected to the walkdown. This action will also complement the review of work requests discussed in Corrective Action 3 above and assist in evaluating the effectiveness of the review in discovering the presence of unauthorized temporary modifications (if any). The walkdowns will be completed prior to start-up. Scheduled completion date August 15, 1992.

Additional Information

Failed Components: None

Similar Events: LER-91-030 reported a similar event in which the primary containment high range radiation monitors were found to contain an unauthorized assembly in the signal cable.