

LICENSEE EVENT REPORT (LER)

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 (P-570), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3180-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

Perry Nuclear Power Plant, Unit 1

DOCKET NUMBER (2)

050004401 OF 04

PAGE (3)

TITLE (4)

Pre-Modification Activities Result in Loss of Control Room Envelope Integrity and Technical Specification Violation

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 NAMES	DOCKET NUMBER(S)			
0	2	2	7	9	2	0	0	2	0	5	0	0	0
0	2	2	7	9	2	0	0	0	3	2	7	9	2

OPERATING MODE (9)

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)

POWER LEVEL (10)

110.0

20.402(a)

20.402(a)

50.73(a)(2)(i)

73.71(a)

20.405(a)(1)(i)

50.36(a)(1)

NE.73(a)(2)(i)

73.71(a)

20.405(a)(1)(ii)

50.36(a)(2)

50.75(a)(2)(i)

OTHER (Specify in Abstract below and in Test. NRC Form 360A)

20.405(a)(1)(iii)

X 50.73(a)(2)(ii)

50.73(a)(2)(i)(A)

20.405(a)(1)(iv)

50.73(a)(2)(i)

50.73(a)(2)(i)(B)

20.405(a)(1)(v)

50.73(a)(2)(iii)

50.73(a)(2)(i)

LICENSEE CONTACT FOR THIS LER (12)

NAME

Henry L. Hegrat, Compliance Supervisor, Extension 5185

TELEPHONE NUMBER

AREA CODE

216 259-3737

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THE 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

NRC (16) (See complete EXPECTED SUBMISSION DATE)

X NO

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

On February 28, 1992, at approximately 1130 hours, the removal of a 3 inch fire penetration plug for a pre-modification cable installation was identified as a violation of the integrity of the Control Room envelope. This condition renders both trains of the Emergency Recirculation mode of the Control Room Heating, Ventilation, and Air Conditioning (CRHVAC) system inoperable. A four-hour NRC notification was made to report the resulting Technical Specification violation and a condition which could have prevented the fulfillment of the safety function of a system that is needed to mitigate the consequences of an accident. The fire penetration plug was promptly reinstalled once the consequences of the condition were identified.

The primary cause of this event is a program deficiency which contributed to the failure to identify the pre-modification activity as a violation of the Control Room boundary.

Appropriate controls will be implemented to ensure that work activities which will breach the integrity of the Control Room envelope are uniquely identified and controlled. Additionally, all licensed and non-licensed plant operators will receive training on this event as part of requalification training.

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LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST. SEE NRS FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (R-270), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Perry Nuclear Power Plant, Unit 1	0500044092	0	02	0	02	OF 04

TEXT - If more space is required, use an additional NRC Form 388A (6-89)

I. Introduction

On February 28, 1992, at approximately 1130 hours, both trains of the Emergency Recirculation mode of the Control Room Heating, Ventilation, and Air Conditioning (CRHVAC) [VI] system were declared inoperable due to the identification of a breach of the Control Room envelope integrity. This condition was identified as a Technical Specification violation and a condition which could have prevented the fulfillment of a safety function that is needed to mitigate the consequences of an accident. A four-hour NRC notification was made at 1253 hours on February 28, 1992 pursuant to the reporting requirements of 10CFR50.72(b)(2)(iii)(D). This event is additionally being reported under the requirements of 10CFR50.73(a)(2)(i)(B) and 50.73(a)(2)(v)(D). At the time of the event, the plant was in Operational Condition 1 (Power Operation) at 100 percent of rated thermal power.

II. Description of the Event

On February 28, 1992 at approximately 1130 hours, the removal of a 3 inch fire penetration plug [SEAL] was identified as a violation of the integrity of the Control Room envelope. A review of the associated work documents revealed that the plug had been previously removed at approximately 0900 hours on February 27, 1992. On the morning of February 28, 1992, a Fire Protection Engineer reviewing the Impairment of Fire Protection Systems procedure for revision, recalled seeing an active permit for the penetration plug removal and recognized the evolution as a breach of the Control Room envelope integrity. The Shift Supervisor was subsequently notified of the discovery. The Shift Supervisor determined that the identified condition was a violation of Technical Specification 3.7.2 (Control Room Emergency Recirculation System) requiring entry into Technical Specification 3.0.3.

Appropriate NRC notifications were made, as indicated above. The fire penetration plug was reinstalled at 1200 hours on February 28, 1992 to restore the integrity of the Control Room envelope, thereby terminating the Technical Specification 3.0.3 initiating condition.

III. Cause Analysis

The failure to control the evolution which initiated this event is attributed to a program deficiency. None of the work documents associated with the plug removal directly identified it as an activity which would affect the Control Room envelope boundaries. Barrier penetration removal is normally performed using a Standing Work Order. The Standing Work Order requires that a Fire Barrier Removal Permit be generated prior to removing a penetration seal. Administrative Procedure PAP 1914, "Impairment of Fire Protection Systems," requires the initiation of an Impairment/Barrier Removal Notice for any maintenance or modification Work Order that may be required on any type of Control Room boundary penetration. This form does not distinguish Control Room boundary penetrations or barriers from other barriers which may affect the operability of plant

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 900 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545 AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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Perry Nuclear Power Plant, Unit 1	0 5 0 0 0 4 4 0	9 2	0 0 2	0 0 0 3	OF 0 4	

TEXT (If more space is required, use additional NRC Form 366A's) (13)

systems. Additionally, neither the form nor procedure provide specific guidance or instruction for the performance of activities affecting the Control Room boundary. The System Operating Instruction (SOI) M25/26 for the CRHVAC system requires that work that could create an opening in the system be reviewed by the Responsible System Engineer and Unit Supervisor to determine the affect on system operability prior to creating the opening. However, this requirement is not carried through to interfacing documents which control work activities. The existing controls relied on the expertise of personnel involved in the activity performed to prevent breaches of Control Room integrity. Several short term corrective actions were initiated to preclude the occurrence of a similar event. Long term corrective actions have been evaluated for implementation.

IV. Safety Analysis

The Control Room Heating, Ventilation, and Air Conditioning (CRHVAC) system provides two independent trains of cooling, heating, ventilation, and when required, smoke removal for the Control Room and equipment areas during normal plant operation and during emergency conditions (loss-of-coolant accident or high radiation conditions). The Emergency Recirculation mode of the CRHVAC system provides the necessary supplementary particulate and halogen filtration of the air supplied to the Control Room areas during emergency and abnormal conditions to reduce the radiation dose for personnel protection. During the period when both trains of the Emergency Recirculation mode were considered inoperable due to the plug removal, leakage into the Control Room in the event of a design basis accident could have caused the radiation dose to inhabitants of the Control Room to exceed the design basis for exposure. Initiation of the Emergency Recirculation mode of CRHVAC would result in Control Room air being discharged outside the Control Room envelope. The eventual decrease in Control Room pressure would result in negative Control Room pressure and in-leakage in excess of design requirements. Therefore, this event is considered to be safety significant. The consequences of this event were mitigated by the fact that no challenges to the system occurred during the period when the Emergency Recirculation mode of the CRHVAC system was considered inoperable, and that the impairment was such that the Control Room integrity could be immediately restored. A review of outstanding barrier removal requests was performed which ensured that no additional requests had been approved which could create a similar condition.

V. Similar Events

A previous event having similar consequences was documented in LER 90-20. In the August 1990 event, maintenance activities were performed on a common plenum for the CRHVAC system which caused both trains of the Emergency Recirculation mode of the CRHVAC system to be inoperable. After that event, it was determined that the maintenance activity performed, and other previous preventive and corrective maintenance activities had also resulted in the loss of both trains of the Emergency Recirculation mode of the CRHVAC system.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 300 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 (2150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			OF (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Perry Nuclear Power Plant, Unit 1	0 15 0 0 0 4 4 0	9 2	— 0 0 2	— 0 0	0 4	OF 0 4

TEXT (if more space is required, use Additional NRC Form 36A's) (17)

As part of the corrective actions for LER 90-20, periodic and outstanding corrective maintenance tasks which may have potentially compromised the Control Room integrity were identified and rescheduled to be performed during plant outages. Additionally, training was conducted for groups involved in the planning and execution of the maintenance activity which initiated the event.

VI. Corrective Actions

As stated previously, the fire penetration plug, whose removal initiated the February 27, 1992 event, was promptly reinstalled once the consequences of its removal were recognized. Subsequent to this event a memorandum was issued to the plant Maintenance Manager which directed that all work which actually or potentially penetrated or violated the Control Room boundary be suspended. A review of previous work activities affecting the CRHVAC system was performed to determine if any additional activities may have resulted in the inoperability of the system in the Emergency Recirculation mode. This review concluded that there had been no similar occurrences since those documented in LER 90-20. The remaining job tasks which had a potential to breach the Control Room envelope integrity were identified and rescheduled for completion during Refueling Outage (RFO) 3 which began March 21, 1992. These actions should preclude repetition of a similar occurrence in the near future.

PAP 1914 is currently under revision for non-related changes. Additions will be incorporated into this revision to address problems referenced in this LER. The changes to PAP 1914 will be completed by July 1, 1992. The Standing Work Order for penetration seal has been revised to include precautions regarding Control Room boundary work. Additionally, all licensed and non-licensed operators will receive training on this event as part of requalification training.

Energy Industry Identification System Codes are identified in the text as [XX].