

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, IP-5301, U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3190-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Perry Nuclear Power Plant, Unit 1 DOCKET NUMBER (2) 050004410 PAGE (3) 1 OF 03

TITLE (4) Inadequate Surveillance Instructions Result in 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)
12	11	1990	09	039	00	00	11	09			05000

OPERATING MODE (8) 4 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)

POWER LEVEL (10) <u>0100</u>	20.402(b)	20.406(a)	80.73(a)(2)(iv)	73.71(b)
	20.406(a)(1)(i)	80.36(a)(1)	80.73(a)(2)(v)	73.71(a)
	20.406(a)(1)(ii)	80.36(a)(2)	80.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 306A)
	20.406(a)(1)(iii)	X 80.73(a)(2)(i)	80.73(a)(2)(vii)(A)	
	20.406(a)(1)(iv)	80.73(a)(2)(ii)	80.73(a)(2)(vii)(B)	
	20.406(a)(1)(v)	80.73(a)(2)(iii)	80.73(a)(2)(v)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
<u>Henry L. Hegrat, Compliance Engineer, Extension 6855</u>	<u>2151621519-13171317</u>

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

On December 11, 1990, at 1300, it was discovered that inadequate instructions resulted in the inoperability of both loops of the Containment Spray Mode of the Residual Heat Removal (RHR) system in violation of Technical Specification 3.6.3.2. While performing a review of Surveillance Instruction (SVI-E12-T1182B), "RHR B LPCI Valve Lineup Verification and System Venting," it was discovered that the position of the second isolation valve in the RHR "B" Loop of Containment Spray was not verified by the SVI as required by Technical Specification Surveillance Requirement 4.6.3.2.a. Further research also revealed that the position of the second isolation valve position for the RHR "A" Loop of Containment Sprav was not verified by the applicable SVI and that no other SVI's met the requirement for these valves.

The cause of this event was inadequate instructions. SVI-E12-T1182A and B were initially written in 1986 to satisfy the surveillance requirements of Technical Specification 4.6.3.2.a but verification of the second isolation valves for each loop was not included. Additionally, periodic reviews of the instructions failed to identify the deficiency.

To prevent recurrence, SVI-E12-T1182A and B were revised to include the appropriate isolation valve for position verification. A review was performed to ensure that these valves were not omitted from other surveillance requirements. As part of an established administrative program, all surveillance instructions are required to be periodically reviewed on a two-year cycle to ensure fulfillment of appropriate Technical Specification requirements. Appropriate personnel are being provided additional training to reinforce the requirements for thorough and accurate two-year periodic procedure review.

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TEXT CONTINUATION

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

On December 11, 1990, at 1300, it was discovered that inadequate instructions resulted in the inoperability of both loops of the Containment Spray Mode of the Residual Heat Removal [BO] (RHR) system in violation of Technical Specification 3.6.3.2. At the time of discovery, the plant was in Operational Condition 4 (Cold Shutdown). Reactor coolant temperature was approximately 140 degrees Fahrenheit with reactor vessel [RPV] pressure at zero psig.

While performing a post-performance review of Surveillance Instruction (SVI-E12-T1182B), "RHR B LPCI Valve Lineup Verification and System Venting," it was discovered that the position of the second isolation valve [ISV] in the RHR "B" Loop of Containment Spray was not verified by the SVI. The surveillance requirement 4.6.3.2 states "The containment spray mode of the RHR system shall be demonstrated OPERABLE: a. At least once per 31 days by verifying that each valve, manual, power operated or automatic, in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position." Further research also revealed that the position of the second isolation valve for the RHR "A" Loop of Containment Spray was not verified by the applicable SVI (SVI-E12-T1182A) and that no other SVI's met the requirement for these valves. Because the action statements of Technical Specification 3.6.3.2 are applicable in Operational Conditions 1, 2 and 3 only, no immediate actions were required. However, because the Surveillance Instructions have not included the necessary position verifications, previous power operations were in violation of Technical Specification requirements.

The cause of this event was inadequate instructions. SVI-E12-T1182A and B were initially written to satisfy the surveillance requirements of Technical Specification 4.6.3.2.a in 1986 and the original revision of the instruction failed to include the verification of the subject isolation valves. Plant Administrative Procedure (PAP-0522) "Preparation, Review, and Approval of Instructions" requires surveillance instructions to be reviewed on a two year basis, to ensure that the instruction fully satisfies all Technical Specification requirements for which it is intended. Although these instructions had been reviewed as required in 1987 and 1989, the reviews failed to recognize that the valve position verifications were omitted. Because the function of the Containment Spray system is such that it cannot be actually tested under normal conditions, system operability is verified by confirmation of flowpath availability. The function of the valves and the unique nature of the surveillance is considered to have contributed to the oversight in the review process. Additionally, review of SVI-E12-T1182 A and B as well as SVI-T23-T1201, "Containment and Drywell Isolation Verification" and other stroke time tests have revealed no additional problems. Accordingly, this is considered to be an isolated event.

The containment spray system consists of two one hundred percent capacity loops, each with three spray rings located at different elevations about the inside circumference of containment. RHR pump A supplies one loop and RHR pump B supplies the other. Dispersion of the flow of water is effected by 346 nozzles

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TEXT (if more space is required, use additional NRC Form 368A's) (17)

in loop A and 344 nozzles in loop B, enhancing the condensation of water vapor in the containment volume and preventing over pressurization. Heat rejection is through the RHR heat exchangers. The turbulence caused by the spray system aids in mixing the containment air volume to maintain a homogeneous mixture for hydrogen control.

Although the lack of valve position verification was discovered while in Operational Condition 4, the surveillance requirement 4.6.3.2.a had not been completely met throughout plant operation. The isolation valve positions that had not been specifically verified were for valves that are normally closed and automatically open when Containment Spray is initiated. If these valves had been left in the open position, they still would have permitted the Containment Spray system to perform its intended function had Containment Spray been required. Under normal maintenance, power would be removed from the valves in accordance with tagout procedures and system operability would be addressed at that time. If power had been removed from the valves at a time when the systems were required to be operable, the power loss would have been indicated in the Control Room. Additionally, the automatic opening function of these valves is tested on an eighteen month frequency by logic system functional testing, and have tested satisfactorily during this current refueling outage. Also, since the first isolation valves in each line were verified closed, the Low Pressure Coolant Injection functions of the RHR loops would also have performed their functions. Based on the system design and the effectiveness of other administrative controls for system operability, both loops of the Containment Spray system were available to perform their intended functions when required and therefore this event is considered not to be safety significant. No events of inadequate Containment Spray surveillance instructions resulting in Technical Specification violations have been previously reported.

To prevent recurrence, SVI-E12-T1182A and B were revised to include the appropriate second isolation valve for position verification. A review to ensure that these valves were not omitted from other surveillance requirements was also performed and no additional unsatisfied requirements were found. As part of an established administrative program, all surveillance instructions are required to be periodically reviewed on a two-year cycle to ensure fulfillment of appropriate Technical Specification requirements. Appropriate personnel are being provided additional training to reinforce the necessity for thorough and accurate two-year periodic procedural review.

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