



**BOSTON EDISON**

Pilgrim Nuclear Power Station  
Rocky Hill Road  
Plymouth, Massachusetts 02360

**George W. Davis**  
Senior Vice President — Nuclear

April 8, 1991  
BECo Ltr. 91- 046

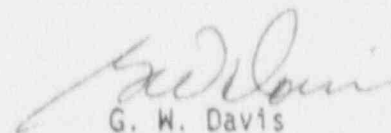
U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555

Docket No. 50-293  
License No. DPR-35

Dear Sir:

The enclosed Licensee Event Report (LER) 91-003-00, "High Pressure Coolant Injection System Made Inoperable Per Technical Specifications Due To Reactor Pressure Transmitter Replacement", is submitted in accordance with 10 CFR Part 50.73.

Please do not hesitate to contact me if there are any questions regarding this report.



G. W. Davis

DWE/bal

Enclosure: LER 91-003-00

cc: Mr. Thomas T. Martin  
Regional Administrator, Region I  
U.S. Nuclear Regulatory Commission  
475 Allendale Rd.  
King of Prussia, PA 19406

Sr. NRC Resident Inspector - Pilgrim Station

Standard BECo LER Distribution

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## LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 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.

FACILITY NAME (1) Pilgrim Nuclear Power Station DOCKET NUMBER (2) 0 5 0 0 0 2 9 3 1 OF 0 5

TITLE (4) High Pressure Coolant Injection System Made Inoperable Per Technical Specifications Due to Reactor Pressure Transmitter Replacement

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 (5)	
03	07	91	19	003	0	04	08	91	N/A	0 5 0 0 0	
									N/A	0 5 0 0 0	

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5 (Check one or more of the following) (11)									
N	20.402(b) 20.405(e) 50.73(a)(2)(iv) 73.71(b)									
POWER LEVEL (10) 2 5	20.405(a)(1)(i) 50.73(a)(2)(v) (D) 73.71(c)									
	20.405(a)(1)(ii) 50.73(a)(2)(vi) 73.71(d)									
	20.405(a)(1)(iii) 50.73(a)(2)(vii)(A) 73.71(e)									
	20.405(a)(1)(iv) 50.73(a)(2)(vii)(B) 73.71(f)									
	20.405(a)(1)(v) 50.73(a)(2)(viii) 73.71(g)									

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Douglas W. Ellis - Senior Compliance Engineer	AREA CODE 5 0 8 7 4 7 - 8 1 6 0

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
B	I	G	P	T	R	3	6	9	Y

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input checked="" type="checkbox"/>	<input type="checkbox"/>				

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

On March 7, 1991 at 1315 hours, the High Pressure Coolant Injection (HPCI) System was made inoperable and a seven day Limiting Condition for Operation began in accordance with Technical Specification (TS) 3.5.C.2. The system was made inoperable because the two HPCI turbine steam exhaust vacuum breaker containment isolation valves were closed. The valves were closed because the operability of the circuitry that controls the valves was questioned due to the removal from service for replacement of one of four reactor pressure transmitters that function to provide an isolation signal to the valves. Because the operability of the circuitry for the isolation valves was questioned, a utility licensed operator decision was made to close the valves in accordance with TS 3.7.A.2.b. Because the valves were closed, the HPCI System was declared and made inoperable.

The cause for the removal from service of the transmitter was a gradual loss of fill-oil in the transmitter's sensing module. The transmitter was replaced and the HPCI System was returned to service on March 7, 1991 at approximately 1516 hours. The transmitter was manufactured by Rosemount Incorporated, model number 1153GB9RCN0012, serial number 412894, and was originally put into service in May 1987. The Reactor Core Isolation Cooling System was operable. This event occurred during power operation while at 25 percent reactor power. The reactor mode selector switch was in the RUN position. The reactor vessel (RV) pressure was 965 psig with the RV water temperature at approximately 540 degrees Fahrenheit. This report is submitted in accordance with 10 CFR 50.73(a)(2)(v)(D) and this event posed no threat to the public health and safety.

LICENSEE EVENT REPORT (LER)  
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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		0 0	3	0	0	2	OF 0 5

TEXT (If more space is required, use additional NRC Form 306A's) (17)

EVENT DESCRIPTION

On March 7, 1991 at 1315 hours, the High Pressure Coolant Injection (HPCI) System was made inoperable and a seven day Limiting Condition for Operation (LCO) began in accordance with Technical Specification 3.5.C.2. The system was made inoperable in accordance with Technical Specification 3.7.A.2.b, Primary Containment Isolation Valves.

The HPCI System was made inoperable because the two HPCI turbine exhaust vacuum breaker containment isolation valves (MO-2301-33 and -34) were closed. The valves were closed because the operability of the circuitry that controls the valves was questioned due to the removal from service of one of four reactor pressure transmitters. The transmitters function to provide an isolation signal to the valves. The transmitter (PT-263-50B) was removed from service for replacement. The redundant pressure transmitters were operable and capable of providing the isolation function. Because the operability of the circuitry was questioned, a licensed utility operator decision was made to close the valves. The valves were closed and valve MO-2301-34 was then de-energized in accordance with Technical Specification 3.7.A.2.b.

These in-series valves (MO-2301-33 and -34) are located in the vacuum relief line that is connected to the HPCI turbine steam exhaust piping. The valves are normally in the open position to allow installed check valves to provide a vacuum relief function. Vacuum relief prevents water from being drawn into the HPCI turbine exhaust piping from the Torus/Suppression Pool and aids in draining condensed steam to the Torus/Suppression Pool. Because valves MO-2301-33 and -34 were closed, the HPCI System was made inoperable. Operability testing of the Reactor Core Isolation Cooling (RCIC) System began in accordance with Technical Specification 3.5.C.2 on March 7, 1991 at 1335 hours.

Failure and Malfunction Report 91-77 was written to document this event. The REC Operations Center was notified on March 7, 1991 at 1745 hours. The notification exceeded the four hour notification requirement of 10 CFR 50.72(b)(2)(iii) by approximately 30 minutes.

This event occurred during power operation while at 25 percent reactor power for the replacement of Recirculation System motor generator set 'A' brushes. The reactor mode selector switch was in the RUN position. The Reactor Vessel (RV) pressure was 965 psig with the RV water temperature at approximately 540 degrees Fahrenheit.

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 (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 386A's) (17)

CAUSE

The cause for the replacement of reactor pressure transmitter PT-263-50B was a gradual loss of fill-oil of the transmitter's sensing module. Transmitter PT-263-50B was manufactured by Rosemount Incorporated, model number 1153GB9RCN0012, serial number 412894, and was originally put into service in May 1987. The cause for a loss of fill-oil of Rosemount model 1153 transmitters was previously identified by Rosemount and described in NRC Information Notice 89-42 and Bulletin 90-01, "Loss Of Fill-Oil In Transmitters Manufactured by Rosemount". According to Rosemount, as the oil leaks out of the sensing module the transmitter's performance gradually deteriorates and may eventually lead to a detectable failure.

The discovery occurred on March 6, 1991 as a result of a routine operator tour that is conducted daily per Procedure 2.1.15 (currently Rev. 84), "Daily Surveillance Log", Attachment 1 (daily log test number 29). During a check of instrumentation that includes reactor pressure instruments, PIS-263-50B (from reactor pressure transmitter PT-263-50B) was observed to be indicating lower than the redundant reactor pressure instruments and the trip light of PIS-263-50B was illuminated. Immediate actions were taken to remove PT-263-50B from service for a calibration check. The calibration was initiated at 1753 hours and was performed per procedure 8.M.1-8.2 (Rev. 5), "Calibration of ATS Transmitters Rack C2206". The response of PT-263-50B during the calibration exhibited symptoms similar to those identified by Rosemount for a gradual loss of fill-oil.

Failure and Malfunction Report 91-74 was written to document the problem with PT-263-50B. Reactor pressure transmitter PT-263-50B and associated instrument channels were left in a tripped condition until a spare replacement transmitter could be installed.

CORRECTIVE ACTION

The replacement of transmitter PT-263-50B was completed and the new transmitter was put into service on March 7, 1991 at approximately 1430 hours. The new transmitter (model number 1153GB9RCN0012, serial number 412943A) is a transmitter that was rebuilt by Rosemount Incorporated using a manufacturing process which eliminates the likelihood of a loss of fill-oil. Therefore, the replacement of the transmitter is consistent with the recommendation identified in NRC Bulletin 90-01.

After the transmitter was put into service, the HPCI vacuum breaker containment isolation valve MO-2301-34 was re-energized and valves MO-2301-33 and -34 were reopened. The HPCI System was returned to service on March 7, 1991 at 1516 hours.

The Senior Licensed Operator (Nuclear Watch Engineer) who was on shift at the time the HPCI System was made inoperable and was responsible for notifying the NRC Operations Center in accordance with 10 CFR 50.72 was counseled regarding the timeliness of the notification on March 7, 1991.



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3160-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

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

This report will be updated if significant new information is identified or if significant corrective action is necessary.

SAFETY CONSEQUENCES

This event posed no threat to the public health and safety.

The RCIC System was operable during the period of operation that the HPCI System was inoperable. During the brief period that the HPCI System was inoperable, LCO testing was conducted in accordance with procedure 8.5.5.4 (Rev. 19), "RCIC Motor Operated Valve Operability Test Monthly/Quarterly".

Reactor pressure transmitter PT-263-50B provides signals to four analog trip units. The trip units are part of the Residual Heat Removal (RHR) System channel 'B' circuitry, Core Spray System channel 'B' circuitry, and the HPCI System channel 'B' circuitry. During the period that PT-263-50B was not in service, the redundant pressure transmitters for these systems were operable.

During the period that PT-263-50B was not in service, the HPCI System circuitry was capable of providing an automatic isolation signal to the HPCI vacuum breaker containment isolation valves.

This report is submitted in accordance with 10 CFR 50.73(a)(2)(v)(D) because the HPCI System was inoperable.

SIMILARITY TO PREVIOUS EVENTS

A review was conducted of Pilgrim Station LERs submitted since January 1984. The review focused on LERs submitted in accordance with 10 CFR 50.73(a)(2)(v) involving the HPCI System, or LERs involving a similar event. The review identified a related event reported in LER 50-293/89-011-00.

For LER 89-011-00, an automatic actuation of a portion of the Primary Containment Isolation Control System and the Reactor Protection System occurred during a coastdown of the Turbine-Generator on March 4, 1989 while at 10 percent reactor power. Unrelated to the cause for the event was the failure (spurious upscale trip) of one of 16 differential pressure transmitters that function to monitor Main Steam System flow. The transmitter (DPT-261-2N) was manufactured by Rosemount Incorporated, model number 1153DB7RCN0012, serial number 418336, and was replaced.

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) CODES

The EIIS codes for this report are as follows:

COMPONENTS

Transmitter, Pressure (PT-263-50B)

CODES

PT

SYSTEMS

Core Spray System

Excore Monitoring System

High Pressure Coolant Injection System (HPCIS)

Residual Heat Removal (RHR) System

BM

IG

BJ

BO