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Michael J. Colomb
Site Vice President

BVY 11-032

April 14, 2011

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Licensee Event Report 05000271/2011-001-00, Inoperability of the High Pressure Coolant Injection System due to Failure to Follow Procedures
Vermont Yankee Nuclear Power Station
Docket No. 50-271
License No. DPR-28

Dear Sir or Madam:

As defined by 10 CFR 50.73(a)(2)(v)(D) and 10 CFR 50.73(a)(2)(i)(B), we are submitting the attached Licensee Event Report, LER 05000271/2011-001-00.

There are no new regulatory commitments contained within this correspondence.

Should you have any questions concerning this letter, please contact Mr. Robert J. Wanczyk at (802) 451-3166.

Sincerely,

[MJC/JMD]

Attachment: LER 05000271/2011-001-00, Inoperability of the High Pressure Coolant Injection System due to Failure to Follow Procedures

cc list: (next page)

IE22
NRR

cc: Mr. William M. Dean
Region 1 Administrator
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Mr. James S. Kim, Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

USNRC Resident Inspector
Vermont Yankee Nuclear Power Station
320 Governor Hunt Road
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Ms. Elizabeth Miller
Commissioner
VT Department of Public Service
112 State Street, Drawer 20
Montpelier, VT 05620-2601

NRC Form 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES 10/31/2013

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F55), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

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4. TITLE

Inoperability of High Pressure Coolant Injection System due to Failure to Follow Procedures

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
									N/A	
02	16	2011	2011	-- 001 --	00	04	14	2011	FACILITY NAME N/A	DOCKET NUMBER

9. OPERATING MODE

N

10. POWER LEVEL

100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☒ 50.73(a)(2)(v)(D)	

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
Chris Wamser, General Manager Plant Operations	(802) 257-7711

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
A	BJ	TRB	T147	Yes						

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES (If Yes, complete EXPECTED SUBMISSION DATE). ☒ NO				

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

On February 16, 2011 with the plant at 100 percent power, Vermont Yankee was preparing to perform a scheduled quarterly surveillance on the High Pressure Coolant Injection (HPCI) system. During initial startup of the system, audible and visual indications of steam leakage were observed. The investigation determined that a flanged connection associated with steam trap ST-23-3 was the source of the leak. This steam trap is on a line that maintains the steam supply piping to the HPCI turbine free of accumulated water. The event was attributed to a maintenance activity that was performed on February 1, 2011 where the steam trap was disassembled to facilitate a piping weld repair. The cause of this event was a failure to follow procedures that resulted in incorrect gasket material being used as a replacement for spiral wound gasket material. This event was determined to be reportable per 10CFR50.73(a)(2)(v)(D) as an event or condition that could have prevented fulfillment of a safety function and under 10CFR50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications. The Automatic Depressurization System (ADS) serves as a backup to the HPCI system. If the HPCI System does not operate and one of the low pressure coolant injection pumps is available, the Nuclear System is depressurized using ADS to permit the Low Pressure Coolant Injection (LPCI) and Core Spray (CS) systems to operate to protect the fuel barrier. This event did potentially affect the ability of HPCI to perform its safety function from February 1, 2011 through February 19, 2011 when the system was returned to service. During that time period, ADS and either LCPI or CS were available to perform the required safety functions. Therefore, this event did not pose a threat to public health and safety.

LICENSEE EVENT REPORT (LER)

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form (366A)*

Description of Event

On February 16, 2011 with the plant at 100 percent power, Vermont Yankee (VY) was preparing to perform a scheduled quarterly surveillance on the High Pressure Coolant Injection (HPCI) system (EIIS=BJ). During initial startup of the HPCI system audible and visual indications of steam leakage were observed by personnel in the vicinity of the HPCI room. A local fire alarm was received in the control room and operators were dispatched and confirmed that the alarm was due to the steam leak in the HPCI room. The HPCI steam supply was isolated and an eight-hour notification was made to the NRC per 10CFR50.72(b)(3)(v)(D). The event was entered into the Corrective Action Program.

The investigation determined that a flanged connection associated with steam trap ST-23-3 was the source of the leak. This steam trap is on a line that maintains the steam supply piping to the HPCI turbine free of accumulated water. The event was attributed to a maintenance activity that was performed on February 1, 2011 where the steam trap was disassembled to facilitate a piping weld repair. Following the pipe repair, the steam trap was reassembled using a Garlock 9920 gasket material because there was no spiral wound gasket material available. The investigation determined that the Garlock 9920 gasket was not appropriate for this application. In addition, post maintenance testing was performed but it was subsequently determined that the system configuration did not expose the affected flanges to full operating pressure and temperature.

This event was determined to be reportable per 10CFR50.73(a)(2)(v)(D) as an event or condition that could have prevented fulfillment of a safety function needed to mitigate the consequences of an accident and since the condition existed longer that the limiting condition for operability of the HPCI system (i.e., 14 days) the event is also reportable under 10CFR50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

Cause of Event

The cause of this event was a failure to follow procedures that resulted in the incorrect gasket material being used as a replacement for the original gasket material.

Analysis of Event

The Core and Containment Cooling System (CSCS) is described in Updated Final Safety Analysis Report. The CSCS consists of the following systems;

HPCI
Automatic Depressurization System (ADS)
Core Spray System (CS) (EIIS=BM)
Low Pressure Coolant Injection (LPCI)(EIIS=BO)

The HPCI system provides and maintains an adequate coolant inventory inside the reactor vessel to prevent fuel clad conditions from exceeding 10CFR50.46 criteria as a result of postulated small breaks in the Nuclear System process barrier. A high pressure system is needed for such breaks because the reactor vessel depressurizes slowly, preventing low pressure systems from injecting coolant. The HPCI system includes a turbine-driven pump powered by reactor steam. The system is designed to accomplish its function on a short-term basis without reliance on station auxiliary power supplies other than the dc power supply.

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form (366A)*

The ADS acts to rapidly reduce reactor vessel pressure in a loss-of-coolant accident situation in which the HPCI system fails to automatically maintain reactor vessel water level. The depressurization provided by the ADS system enables the low pressure standby cooling systems (i.e., CS and LPCI) to deliver cooling water to the reactor vessel. The ADS uses the relief valves which are part of the Nuclear System Pressure Relief System. The automatic relief valves are arranged to open upon conditions indicating that a break in the Nuclear System process barrier has occurred and that the HPCI system is not delivering sufficient water to the reactor vessel to maintain the water level above a preselected value. The ADS serves as a backup to the HPCI system. The Nuclear System can be depressurized using ADS to permit the LPCI and CS Systems to operate to protect the fuel barrier.

This event did potentially affect HPCI's ability to perform its safety function from February 1, 2011 through February 19, 2011 when the system was returned to service. A review of control room logs for the subject time period confirmed that ADS and either LPCI or CS were available to perform the required safety functions.

Based on the above there was no potential adverse impact on public health and safety.

Corrective Actions

1) The gasket material was replaced and the HPCI system was successfully tested and returned to service.

2) Lessons learned from the cause evaluation will be incorporated into training programs for Maintenance and Operations personnel and the causes and consequences will be reviewed with Maintenance and Planning personnel.

3) The use of Garlock 9920 gasket material in other systems will be evaluated to ensure it is appropriate.

4) Governing procedures will be revised to address the weaknesses identified during the investigation.

Previous Similar Events

No previous similar events have been reported in the last 5 years.