

Dominion Nuclear Connecticut, Inc.
Millstone Power Station
Rope Ferry Road, Waterford, CT 06385



DEC 19 2008

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Serial No.	08-0764
MPS Lic/GJC	R0
Docket No.	50-423
License No.	NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
LICENSEE EVENT REPORT 2008-004-00
GAS VOID DISCOVERED IN THE EMERGENCY
CORE COOLING SYSTEM SUCTION LINE

This letter forwards Licensee Event Report (LER) 2008-004-00 documenting a condition discovered at Millstone Power Station Unit 3 on October 20, 2008. This LER is being submitted pursuant to the following: 10 CFR 50.73(a)(2)(i)(B), 10 CFR 50.73(a)(2)(v)(B) and (D), and 10 CFR 50.73(a)(2)(vii).

If you have any questions or require additional information, please contact Mr. William D. Bartron at (860) 444-4301.

Sincerely,

A. J. Jordan
Site Vice President - Millstone

Attachments: 1

Commitments made in this letter: None

JE22
NRR

cc: U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

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Project Manager
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NRC Senior Resident Inspector
Millstone Power Station

ATTACHMENT

LICENSEE EVENT REPORT 2008-004-00
GAS VOID DISCOVERED IN THE EMERGENCY CORE COOLING SYSTEM
SUCTION LINE

**MILLSTONE POWER STATION UNIT 3
DOMINION NUCLEAR CONNECTICUT, INC.**

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

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 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollect@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOF-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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.

1. FACILITY NAME Millstone Power Station - Unit 3	2. DOCKET NUMBER 05000423	3. PAGE 1 OF 3
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4. TITLE
Gas Void Discovered in the Emergency Core Cooling System Suction Line

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV. NO.	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	20	2008	2008-004-00			12	19	2008	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE 5	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)				
	20.2201(b)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)	
10. POWER LEVEL 000	20.2201(d)	20.2203(a)(4)	50.73(a)(2)(iii)	50.73(a)(2)(x)	
	20.2203(a)(1)	50.36(c)(1)(i)(A)	50.73(a)(2)(iv)(A)	73.71(a)(4)	
	20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)	50.73(a)(2)(v)(A)	73.71(a)(5)	
	20.2203(a)(2)(ii)	50.36(c)(2)	X 50.73(a)(2)(v)(B)	OTHER	
	20.2203(a)(2)(iii)	50.46(a)(3)(ii)	50.73(a)(2)(v)(C)	Specify in Abstract below or in NRC Form 366A	
	20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)	X 50.73(a)(2)(v)(D)		
	20.2203(a)(2)(v)	X 50.73(a)(2)(i)(B)	X 50.73(a)(2)(vii)		
	20.2203(a)(2)(vi)	50.73(a)(2)(i)(C)	50.73(a)(2)(viii)(A)		
20.2203(a)(3)(i)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(B)			

12. LICENSEE CONTACT FOR THIS LER

NAME William D. Bartron, Supervisor Nuclear Station Licensing	TELEPHONE NUMBER (Include Area Code) 860-447-1791 x4301
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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

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

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

On October 20, 2008, with Millstone Unit 3 at 0% power in Mode 5, as part of Generic Letter 2008-01 activities, ultrasonic testing (UT) performed on a portion of the common suction line from the refueling water storage tank to the suction of the emergency core cooling system (ECCS) pumps indicated the accessible portion of the 24" diameter pipe was 85% full. No immediate actions were necessary since ECCS is not required in Mode 5.

Engineering determined for break sizes that would result in low head safety injection there was the potential to transport the gas void/water mixture to specific ECCS pumps during the injection phase of an accident. Of the scenarios with the potential to transport the gas void/water mixture, only those scenarios with a low reactor coolant system pressure were determined to adversely impact the accident mitigation capability of affected ECCS pumps.

The cause of this condition was determined to be a latent design error. The original design of the plant did not include a vent path for this section of piping. Subsequent to the discovery of the gas void, the plant was modified to install a vent valve on this line to provide a venting location. The operators utilized this vent valve upon returning the unit to service to fill the common suction line and confirmatory UTs were performed to verify the line was full.

This condition is being reported pursuant to 10 CFR 50.73(a)(2)(i)(B) as any operation or condition prohibited by the plant's Technical Specifications, 10 CFR 50.73(a)(2)(v)(B) and (D) as any condition or event that could have prevented fulfillment of a safety function, and 10 CFR 50.73(a)(2)(vii) as any event or condition where a single cause or condition caused at least one independent train or channel to become inoperable in multiple systems or two independent trains or channels to become inoperable in a single system.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Millstone Power Station - Unit 3	05000423	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		2008	-- 004 --	00	

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

1. EVENT DESCRIPTION:

On October 20, 2008, with Millstone Unit 3 (MPS3) at 0% power in Mode 5, as part of Generic Letter 2008-01 activities, ultrasonic testing (UT) on a portion of the common suction line from the refueling water storage tank (RWST) [TK] to the suction of the emergency core cooling system (ECCS) pumps indicated the accessible portion of the 24" diameter pipe was 85% full. No immediate actions were necessary since ECCS is not required in Mode 5. The ECCS suction piping from the RWST is a 24" diameter line that reduces to a 16" line. Significant portions (approximately 93 ft.) of the 24" pipe run is underground and oriented horizontally. Void measurement of the underground piping was determined to be impractical. The 16" line is fully accessible and was verified full.

The subsequent investigation determined the design of the ECCS suction piping did not permit full venting of the 24" portion. A vent valve was added and the system filled prior to entry into Mode 4.

The ECCS for MPS3 consists of charging (CHS)[CB], high head safety injection (SIH)[BQ] and residual heat removal (RHR)[BP] pumps, accumulators, containment recirculation (CR) pumps, containment recirculation heat exchangers, RHR heat exchangers, and the RWST, along with the associated piping, valves, instrumentation, and other related equipment.

In Modes 1, 2, and 3, plant Technical Specification (TS) 3.5.2 "ECCS Subsystems – Tavg Greater Than or Equal to 350°F," requires two independent ECCS subsystems be operable, with each subsystem comprised of a minimum of one CHS pump, one SIH pump, one RHR pump, one CR pump, one RHR heat exchanger, and one CR heat exchanger together with associated valves and piping to assure adequate core cooling in the event of a design basis loss of coolant accident (LOCA).

In Mode 4, plant TS 3.5.3 "ECCS Subsystems – Tavg Less Than 350°F," requires one ECCS subsystem be operable with each subsystem comprised of a minimum of, one CHS pump, one RHR pump, one CR pump, one RHR heat exchanger, and one CR heat exchanger together with associated valves and piping to assure adequate core cooling in the event of a design basis LOCA.

Engineering determined for break sizes that would result in low head safety injection there was the potential to transport the gas void/water mixture to specific ECCS pumps during the injection phase of an accident. Of the scenarios with the potential to transport the gas void/water mixture, only those scenarios with a low reactor coolant system pressure (i.e., break sizes that would result in low head safety injection) were determined to adversely impact the accident mitigation capability of affected ECCS pumps. Break sizes that do not result in low head safety injection would briefly transport only minimal gas (~ 1%) to the CHS pumps and would have no significant impact.

Since a gas void/water mixture could be transported to the ECCS pumps and the gas void could adversely impact specific ECCS pumps during the injection phase of an accident, this condition is being reported pursuant to 10 CFR 50.73(a)(2)(i)(B) as any operation or condition prohibited by the plant's Technical Specifications, 10 CFR 50.73(a)(2)(v)(B) and (D) as any condition or event that could have prevented fulfillment of a safety function, and 10 CFR 50.73(a)(2)(vii) as any event or condition where a single cause or condition caused at least one independent train or channel to become inoperable in multiple systems or two independent trains or channels to become inoperable in a single system.

2. CAUSE:

The cause was determined to be a latent design error as the system design did not account for the pipe size transition that trapped gas in the 24" section of pipe. The pipe should have had either a greater slope towards the RWST or a vent valve installed in the 24" section. Engineering determined the most likely source of gas was from restoration of the system after dewatering for maintenance activities. Dewatering this line is a rarely performed activity.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
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NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

3. ASSESSMENT OF SAFETY CONSEQUENCES:

Past ECCS operability was affected for postulated accident scenarios for the ECCS pumps. However, the combination of available systems and system performance during postulated accident conditions with the identified gas void indicates there would be adequate ECCS flow for core cooling.

Thermal-hydraulic and void size modeling was used as the basis for the conclusion that the SIH pumps would have been able to perform their safety function for all postulated accident scenarios. For postulated scenarios when the charging pumps were rendered inoperable, the RHR system pumps were determined to remain functional. Also, when the RHR system pumps were determined to be inoperable, the charging system pumps remained functional. Adequate ECCS pump functionality has been demonstrated to support required core cooling such that this condition is of low safety significance and the health and safety of the public was maintained for postulated accident scenarios within the MPS3 design basis.

4. CORRECTIVE ACTION:

Subsequent to the discovery of the gas void, a modification to the plant was implemented. This modification installed a vent valve on the 24" diameter section of this line to provide a venting location. The operators utilized this vent valve to vent the line upon returning the unit to service and confirmatory UTs were performed to verify the line was full. Additional corrective actions have been included in the station's corrective action program.

5. PREVIOUS OCCURRENCES:

No previous similar events/conditions were identified.

Energy Industry Identification System (EIS) codes are identified in the text as [XX].