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DEC 19 2013

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

Serial No. 12-740A
MPS Lic/TGC R0
Docket No. 50-336
License No. DPR-65

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 2
LICENSEE EVENT REPORT 2012-003-01
POTENTIAL FOR A LOSS OF SAFETY FUNCTION
DUE TO POSTULATED FLOOD CONDITIONS

This letter forwards Licensee Event Report (LER) 2012-003-01 documenting a condition discovered at Millstone Power Station Unit 2 on October 15, 2012. This LER supplement is being submitted pursuant to 10 CFR 50.73(a)(2)(v)(A) and (B).

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

Sincerely,

Stephen E. Scace
Site Vice President – Millstone

Attachments: 1

Commitments made in this letter: None

IE22
NRR

cc: U.S. Nuclear Regulatory Commission
Region I
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King of Prussia, PA 19406-2713

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NRC Senior Resident Inspector
Millstone Power Station

ATTACHMENT

LICENSEE EVENT REPORT 2012-003-01
POTENTIAL FOR A LOSS OF SAFETY FUNCTION DUE TO POSTULATED FLOOD CONDITIONS

MILLSTONE POWER STATION UNIT 2
DOMINION NUCLEAR CONNECTICUT, INC.

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 F52), 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)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Millstone Power Station - Unit 2	05000336	1 OF 3

4. TITLE

Potential For a Loss of Safety Function Due to Postulated Flood Conditions

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
10	15	2012	2012	– 003 –	001	12	19	2013	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE

5

10. POWER LEVEL

000

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)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
William D. Bartron, Supervisor, Nuclear Station Licensing	860-444-4301

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (*If yes, complete 15. EXPECTED SUBMISSION DATE*) ☒ NO

15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR

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

On October 15, 2012 during a Millstone Power Station Unit 2 beyond design basis flooding walkdown, with the unit shutdown in MODE 5 (cold shutdown), a total of 20 four (4) inch and 2 two (2) inch unsealed electrical conduits, connecting the service water pump room of the intake structure and the turbine building, were identified. These conduits penetrated the wall above the design basis flood height of 22 feet mean sea level (MSL), but below the maximum standing wave height of 26.5 feet MSL inside the intake structure service water pump room. Because these conduits were unsealed at both ends, this condition could have resulted in flooding of the turbine building such that it could have rendered the turbine-driven auxiliary feedwater (AFW) pump inoperable. Additionally, several other unsealed conduit penetrations, conduit penetrations with damaged seals, or wall cracks were identified within the design basis flood zone during these walkdowns. Engineering analysis concluded these additional leak paths would have no impact to equipment needed to perform during the design basis flood without the concurrent intake structure standing wave. However, there was a potential to affect the functionality of the AFW pumps, the power operated relief valves and the high pressure injection system if the standing wave condition occurred, as assumed, for a duration of one hour at 26.5 ft. MSL concurrent with the design basis maximum storm surge. Engineering concluded this event was of very low safety significance. These deficiencies were historical in nature and appear to be original construction deficiencies. Upon discovery the identified deficiencies were repaired to restore the design basis for flood protection.

This condition is being reported under 10 CFR 50.73(a)(2)(v)(A) and (B). "Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to shutdown the reactor and maintain it in a safe shutdown condition, or remove decay heat."

NARRATIVE

1. **EVENT DESCRIPTION:**

On October 15, 2012 during a Millstone Power Station Unit 2 (MPS2) beyond design basis (BDB) flooding walkdown, with the unit shutdown in MODE 5 (cold shutdown), a total of 20 four (4) inch, and 2 two (2) inch unsealed electrical conduits, connecting the service water pump room of the intake structure [NN] and the turbine building [NM], were identified. These conduits penetrated the wall above the design basis flood height of 22 feet mean sea level (MSL), but below the maximum standing wave height of 26.5 feet MSL inside the intake structure service water pump room. Because these conduits were unsealed at both ends, this condition could have resulted in flooding of the turbine building such that it could have rendered all the auxiliary feedwater pumps [BA] [P], turbine-driven (TDAFW) as well as the electric driven, inoperable. Additionally, several other unsealed conduit penetrations, conduit penetrations with damaged seals, or wall cracks were identified within the design basis flood zone during these walkdowns.

The design of MPS2 provides for flood protection up to an elevation of 22 feet MSL for the containment [NH], turbine and auxiliary buildings [NF]. All penetrations into these structures are provided with either normally-closed, air-tight penetrations (i.e., containment) or with hinged flood gates or stop logs (i.e., auxiliary and turbine buildings) to assure water tightness against both water and debris. Likewise, the MPS2 intake structure is also flood protected up to an elevation of 22 feet MSL, including the service water pumps which are important to the safe shutdown of the plant.

Because the maximum water level inside the intake structure caused by the standing wave condition is calculated to reach an elevation of 26.5 feet MSL, additional measures were necessary to protect one service water pump motor and associated electrical and control equipment up to the 26.5 foot MSL elevation. Station abnormal operating procedure (AOP) 2560, "Storms, High Winds and High Tides," provides the steps for protecting one of the service water pump motors in the event a flood in excess of 22 feet MSL is anticipated. As described in the MPS2 FSAR, the duration of time the intake water level could exceed 22 feet MSL is calculated to be 2.3 hours.

During the design basis hurricane, the plant must be able to be maintained in a safe shutdown condition where the major concern is removal of decay heat from the core. Although actions have been taken to ensure continued operation of at least one emergency diesel generator (EDG), the incorporation of a steam-driven (or turbine-driven) auxiliary feedwater pump and manually-positionable components into the plant design provides for decay heat removal without dependence on emergency power from the EDGs. This is supported by the May 10, 1974, safety evaluation report (SER) for MPS2 where the NRC credits only the TDAFW pump for decay heat removal.

The MPS2 TDAFW pump is located in the basement (elevation 1 foot 6 inches MSL) on the eastern side of the turbine building. The pump is housed in a vault, physically separated from other plant equipment by reinforced concrete walls, with access means only through a water-tight fire door.

The existence of these unsealed penetrations between the intake structure service water pump room and the turbine building was not consistent with the plant's design basis for flood protection of the turbine building. Upon discovery of this condition, the openings on both ends of the conduits were sealed to restore the design basis for flood protection.

Engineering performed an analysis that modeled the postulated effects of the compromised flood barriers. The evaluation postulated the time based impact of the design basis probable maximum hurricane (tidal surge, using data (including wave runup above the still water heights) from Table 2.5-1 of the UFSAR, with and without the concurrent +26.5 ft. MSL water level in the intake structure. The engineering calculations demonstrated no impact to equipment needed to perform during the design

basis flood without the concurrent intake structure standing wave. However, there was a potential to affect the function of the auxiliary feedwater pumps, the DC switchgear rooms, which power the power operated relief valves, and the high pressure safety injection system if the standing wave condition occurred, as assumed, for a duration of one hour at 26.5 ft. MSL concurrent with the design basis maximum storm surge. This scenario is expected to be mitigated by the station storm preparation procedure, which pre-stages equipment (sand bags, portable pumps, and generators) and personnel to respond such that external flood water is diverted away from the critical equipment listed above.

This condition is being reported under 10 CFR 50.73(a)(2)(v)(A) and (B). "Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to shutdown the reactor and maintain it in a safe shutdown condition, or remove decay heat."

2. **CAUSE:**

These deficiencies are historical in nature and appear to be original construction deficiencies.

3. **ASSESSMENT OF SAFETY CONSEQUENCES:**

The identified deficiencies have been addressed under the work control program. Since there has been no flooding approaching the design basis limits, there were no adverse consequences to the health and safety of the public or the plant and its personnel as a result of these deficiencies.

Based on the engineering analysis described above, engineering determined that this condition was of very low safety significance with an estimated increase in core damage frequency of less than one in one million reactor years. This was based on available frequency information and on the likelihood of preventing a short duration external flood scenario from compromising core damage mitigation equipment.

4. **CORRECTIVE ACTION:**

The identified deficiencies have been repaired.

5. **PREVIOUS OCCURRENCES:**

No previous similar events/conditions were identified.

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