Northeast
Nuclear Energy

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The Northeast Utilities System

DEC 30 1999

Docket No. 50-336
B17948

Re: 10 CFR 50.73(a)(2)(i)(B)

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

Millstone Nuclear Power Station, Unit No. 2
Licensee Event Report 99-016-00
Technical Specification Surveillance Requirements of Seismic Instrumentation Were Not Historically Met

This letter forwards Licensee Event Report (LER) 99-016-00, documenting an event that occurred at Millstone Nuclear Power Station, Unit No. 2, on December 1, 1999. This LER is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B).

Northeast Nuclear Energy Company's (NNECO) commitments made within this letter are included in Attachment 1.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

C. J. Schwarz
Station Director

cc: See page 2

IE22

OS3422-5 REV. 12-95

PDR ADOCK 05000336

Attachments: 1. List of Regulatory Commitments
2. LER 99-016-00

cc: H. J. Miller, Region I Administrator
R. B. Eaton, NRC Senior Project Manager, Millstone Unit No. 2
D. P. Beaulieu, Senior Resident Inspector, Millstone Unit No. 2

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Attachment 1

Millstone Nuclear Power Station, Unit No. 2

Commitments

December 1999

Attachment 1

Regulatory Commitment Enclosure
List of Regulatory Commitments

The following table identifies those actions committed to by NNECO in this document.

REGULATORY COMMITMENT	COMMITTED DATE OR OUTAGE
B17948.01: A briefing is being conducted to the appropriate I&C Department personnel to discuss the correct interpretation of the TRM Section 4.4, "Seismic Instrumentation," item no. 4, "Response Spectrum Recorder."	March 15, 2000
B17948.02: The surveillance procedure SP 2405E will be revised to correct the number of reeds to be calibrated per procedure performance.	March 15, 2000

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Attachment 2

Millstone Nuclear Power Station, Unit No. 2

LER 99-016-00

December 1999

NRC FORM 366 (6-1998) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 06/30/2001

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If 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)

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TITLE (4)

Technical Specification Surveillance Requirements of Seismic Instrumentation Were Not Historically Met

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 NAME	DOCKET NUMBER
12	01	99	99	-- 016 --	00	12	30	99	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)					
POWER LEVEL (10)	093	20.2201(b)	20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
		20.2203(a)(1)	20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
		20.2203(a)(2)(i)	20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
		20.2203(a)(2)(ii)	20.2203(a)(4)		50.73(a)(2)(iv)		OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
		20.2203(a)(2)(iv)	50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
R. Joshi, MP2 Acting Regulatory Compliance Supervisor	(860) 440-2080

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

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

On December 1, 1999 at 1230, it was discovered that the Technical Specification Surveillance Requirements (TSSR) for the seismic instrumentation were not historically met. The seismic instrumentation TS was subsequently relocated to the TRM upon receiving the Nuclear Regulatory Commission's (NRC) approval on July 13, 1999. The surveillance procedure called out calibration of four reeds (out of 12) at each eighteen (18) month interval while the TSSR called out for complete calibration of the recorder every eighteen months.

The cause of this event was lack of understanding of the TSSR. Historically, the TSSR requirement for calibration every eighteen months was being used, but the original manufacturer's recommendations for the definition of a calibration were used, in lieu of the TSSR's definition of a CHANNEL CALIBRATION.

As a result of this event, a briefing is being conducted to the appropriate I&C Department personnel to discuss the correct interpretation of the TRM Section 4.4, "Seismic Instrumentation," item no. 4, "Response Spectrum Recorder." Additionally, surveillance procedure SP 2405E will be revised to correct the number of reeds to be calibrated per procedure performance.

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

I. Description of Event

On December 1, 1999 at 1230, it was discovered that the Technical Specification Surveillance Requirements (TSSR) for the seismic instrumentation [IN] were not historically met. The seismic instrumentation TS was subsequently relocated to the TRM upon receiving the Nuclear Regulatory Commission's (NRC) approval on July 13, 1999. The surveillance procedure called out calibration of four reeds (out of 12) at each eighteen (18) month interval while the TSSR called out for complete calibration of the recorder every eighteen months. At the time of this event, the plant was in Mode 1 at approximately ninety three (93) percent power.

The current revision of Surveillance Procedure SP 2405E, "Spectral Response Seismic Monitor Calibration Peak Shock Recorder (NR-9453)," was made effective on June 2, 1997. This procedure provides instructions for calibration of the seismic recorder. The procedure only requires that four (4) reed assemblies per box be calibrated per procedure performance, which is every eighteen months. This procedural requirement existed in previous revisions of the surveillance procedure dating back to October of 1976. This calibration requirement was based upon the original manufacturer's recommendation.

In a letter dated September 21, 1995 from the equipment manufacturer (Engdahl Enterprises) to Northeast Nuclear Energy Company (NNECO), the manufacturer recommended an increase in the frequency of calibration previously recommended in their vendor technical manual, and refurbishment or replacement of existing recorders. NNECO did not incorporate the recommended calibration frequency information into the surveillance procedure and the vendor technical manual, nor did NNECO respond to the manufacturer recommendations on replacement/refurbishment of the recorders. NNECO is currently considering the replacement of the existing Spectral Response Recorder with a comparable new recorder.

TS, "Seismic Instrumentation," required that this seismic instrumentation be demonstrated OPERABLE (channel calibration) once per eighteen (18) months. The surveillance procedure did not meet the TSSR for frequency of calibration, since only a portion of the recorder is calibrated per eighteen (18) months. The seismic instrumentation TS was subsequently relocated to the TRM upon receiving the NRC's approval on July 13, 1999.

This event is being reported in accordance with 10 CFR 50.73(a)(2)(i)(B), any operation or condition prohibited by the plant's Technical Specifications.

II. Cause of Event

The cause of this event was lack of understanding of the TSSR. Historically, the TSSR requirement for calibration every eighteen months was being used, but the original manufacturer's recommendations for the definition of a calibration were used, in lieu of the TSSR's definition of a CHANNEL CALIBRATION.

III. Analysis of Event

The Unit 2 Seismic Monitoring System consists of the following: 1) five (5) triaxial history accelerographs (strong motion accelerographs), 2) four (4) peak accelerographs, and one (1) triaxial response spectrum recorder. The subject of this event is the triaxial response spectrum recorder. The triaxial response spectrum recorder is a mechanical device that records peak acceleration at each of twelve frequencies for three orthogonal directions. This mechanical device consists of three boxes, one for each direction, each containing twelve (12) reed assemblies. Each reed assembly has a stylus mounted on its end and a corresponding metal plate for (a total of 12 metal plates per box). Each metal reed vibrates at its natural frequency. During a seismic event, the maximum

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movement of each reed is scribed into its corresponding metal plate by the stylus mounted on its end. The twelve reeds in each box are resonant at frequencies in the range of 2.02 to 26.1 HZ. Following a seismic event, all plates are removed and the length of each scribe line is measured and converted to a corresponding peak acceleration.

The triaxial history accelerographs (strong motion accelerographs) and the peak accelerographs have been operable and available for earthquake data analysis. Following an earthquake, although operations will obtain preliminary data from the peak response spectrum recorder, data from the strong motion accelerographs will also be obtained and analyzed to accurately determine the actual seismic acceleration spectrum experienced. The results from the strong motion accelerographs will be considered accurate and will override the information from the spectral response recorder. These results will be used for comparison with the Operating Basis Earthquake (OBE) data to determine whether the plant should continue to operate. Hence, the Spectral Response Recorder is a secondary source of earthquake data. The assumed loss of it's function did not hinder the plant's capability to obtain the data needed to determine necessary operator actions following an earthquake. Additionally, the Unit 3 Seismic Monitoring System's data is available for analysis.

The capability of the plant to withstand a seismic event or other design basis accident is determined by the initial design and construction of systems, structures, and components. This instrumentation is used to alert plant personnel to the seismic event and evaluate the plant response. This instrument is not used to measure a process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier. Furthermore, this seismic instrumentation does not serve as a protective design feature or part of a primary success path for events which challenge fission product barriers. The failure to historically meet the TSSR for the seismic instrumentation had no safety impact on fission barriers, plant operation, accident detection, or accident mitigation.

The assumed loss of function of the Spectral Response Recorder did not hinder the plant's capability to obtain the data needed to determine necessary operator actions following an earthquake, neither did it have safety impact on fission barriers, plant operation, accident detection or accident mitigation. Therefore, this event was not safety significant.

IV. Corrective Action

As a result of this event, 1) a briefing is being conducted to the appropriate I&C Department personnel to discuss the correct interpretation of the TRM Section 4.4, "Seismic Instrumentation," item no. 4, "Response Spectrum Recorder." This action will be completed by March 15, 2000. 2) Additionally, surveillance procedure SP 2405E will be revised to correct the number of reeds to be calibrated per procedure performance. This action will also be completed by March 15, 2000.

V. Additional Information

Similar Events

LER 98-023: On September 24, 1998, during an integrated assessment of the Containment Air Recirculation (CAR) system, it was identified that a potential condition existed involving the methodology used to test the CAR fan motor's low-speed startup circuitry. It was revealed that the current surveillance procedure may not adequately satisfy TSSR 4.6.2.1.2 (a). While in Modes 1 through 3, SR

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4.6.2.1.2 (a) required that the CAR fans be started in low speed, every 31 days from the control room. Although the CAR surveillance procedure adequately tested the low speed circuitry, it did not "start" each of the four CAR fan motors from a stopped position. As a result, on October 20, 1998, it was determined that the testing methodology used did not satisfy the literal interpretation of the SR and historically, when the CAR fans were tested while in an operating mode, the SR was not met. The cause of this condition was misinterpretation of SR 4.6.2.1.2(a) resulting in the implementation of an inadequate testing methodology that did not comply with the literal interpretation of the TS surveillance requirement. In response to this condition, the applicable surveillance procedure will be revised to ensure that periodic testing of the CAR fans satisfies SR 4.6.2.1.2(a).

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