

LICENSEE EVENT REPORT (LER)

(See reverse for required number of
digits/characters for each block)ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY
INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS
LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED
BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN
ESTIMATE TO THE INFORMATION AND 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.

FACILITY NAME (1)

Millstone Nuclear Power Station Unit 1

DOCKET NUMBER (2)

05000245

PAGE (3)

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TITLE (4)

Failure to Perform Applicable 10CFR50 Appendix J Tests to Satisfy Technical Specifications

| EVENT DATE (5) | | | LER NUMBER (6) | | | REPORT DATE (7) | | | OTHER FACILITIES INVOLVED (8) | |
|--------------------|-----|------|---|-------------------|-------------------|-----------------|--|------|---|---------------|
| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REVISION | MONTH | DAY | YEAR | FACILITY NAME | DOCKET NUMBER |
| 06 | 27 | 96 | 96 | 046 | 01 | 11 | 15 | 96 | FACILITY NAME | DOCKET NUMBER |
| OPERATING MODE (9) | | N | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11) | | | | | | | |
| POWER LEVEL (10) | | 000 | 20.2201(b) | | 20.2203(a)(2)(v) | | <input checked="" type="checkbox"/> 50.73(a)(2)(i) | | 50.73(a)(2)(viii) | |
| | | | 20.2203(a)(1) | | 20.2203(a)(3)(i) | | <input type="checkbox"/> 50.73(a)(2)(ii) | | 50.73(a)(2)(x) | |
| | | | 20.2203(a)(2)(i) | | 20.2203(a)(3)(ii) | | <input type="checkbox"/> 50.73(a)(2)(iii) | | 73.71 | |
| | | | 20.2203(a)(2)(ii) | | 20.2203(a)(4) | | <input type="checkbox"/> 50.73(a)(2)(iv) | | OTHER | |
| | | | 20.2203(a)(2)(iii) | | 50.36(c)(1) | | <input type="checkbox"/> 50.73(a)(2)(v) | | Specify in Abstract below or in NRC Form 366A | |
| | | | 20.2203(a)(2)(iv) | | 50.36(c)(2) | | <input type="checkbox"/> 50.73(a)(2)(vii) | | | |

LICENSEE CONTACT FOR THIS LER (12)

| | | | |
|------|--|--------------------------------------|---------------|
| NAME | Robert W. Walpole, MP1 Nuclear Licensing Manager | TELEPHONE NUMBER (Include Area Code) | (860)440-2191 |
|------|--|--------------------------------------|---------------|

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPROS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPROS |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
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SUPPLEMENTAL REPORT EXPECTED (14)

| | | | | | |
|---|-----------------------------|---------------------|-------|-----|------|
| <input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE). | <input type="checkbox"/> NO | EXPECTED SUBMISSION | MONTH | DAY | YEAR |
| | | | 03 | 01 | 97 |

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

On June 27, 1996, with the plant shut down and the reactor in the COLD SHUTDOWN condition, a self assessment program review determined that several containment penetrations did not have adequate local leak rate tests (LLRTs) performed pursuant to the requirements of 10CFR50 Appendix J. Not all testable connections were tested on ten 18" atmospheric control system valves, and there are no testable flanges on two 2" atmospheric control system valves. Additionally, a piping flange in the head spray system is not appropriately tested.

The failure to perform individual Type B leakage tests in accordance with the requirements of 10CFR50 Appendix J results in the inability to adequately demonstrate primary containment integrity, which is required to be maintained by Millstone Unit 1 Technical Specification 3.7.A.3. This event is reportable pursuant to 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications.

Modifications to make the penetrations testable and subsequent testing will be completed prior to startup from the current refueling outage. All penetrations have been tested as part of the Type A integrated leak rate testing (ILRT) program. There were no safety consequences as a result of this event.

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

I. Description of Event

On June 27, 1996, with the plant shut down and the reactor in the COLD SHUTDOWN condition, a self assessment program review determined that several containment penetrations did not have adequate LLRTs performed pursuant to the requirements of 10CFR50 Appendix J. Not all testable connections were tested on ten 18" atmospheric control system valves, and there are no testable flanges on two 2" atmospheric control system valves. Additionally, a piping flange in the head spray system is not appropriately tested.

The failure to perform individual Type B leakage tests in accordance with the requirements of 10CFR50 Appendix J results in the inability to adequately demonstrate primary containment integrity, which is required to be maintained by Millstone Unit 1 Technical Specification 3.7.A.3. This event is reportable pursuant to 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications.

Modifications to make the valves testable and subsequent testing will be complete prior to startup from the current refueling outage. All penetrations have been tested as part of the ILRT program. There were no safety consequences as a result of this event.

II. Cause of Event

The cause of this event is personnel error, in that the "as-built" systems and equipment configuration were not identified as needing modification when the 10CFR50 Appendix J criteria were implemented at Millstone Unit No. 1. Construction of Millstone Unit No. 1 and the plant's initial criticality pre-date 10CFR50 Appendix J. These deficiencies were discovered during a self assessment of the Appendix J program, and a walkdown of the containment penetrations conducted during an extended refuel outage. The Systematic Evaluation Program (SEP) and other reviews failed to identify the penetrations as not meeting Appendix J criteria.

III. Analysis of EventAtmospheric Control Vacuum Breakers 1-AC-1A- J; Penetration X-202A - H

The self actuated check valves (vacuum breakers) of the drywell to torus penetrations form a part of the atmospheric control system and the valve components are part of the reactor building boundary. Five testable gasketed joints exist on each of the valves, namely the flanged body cover, and the shaft packing gland and the stuffing box located at both ends of the disc shaft. Each of these containment boundaries is testable and should receive a Type B LLRT in accordance with Appendix J. However, only the double gasketed flanged body cover was appropriately tested per Appendix J. The shaft packing gland and stuffing box (at each shaft end) utilize pipe plugs to communicate between the inner and outer barrier at the lantern gland and between the o-rings respectively. These boundaries have not been LLRT tested. When the pipe plugs are removed, a Type B test can be performed to verify the leak tightness of these potential leak paths. This configuration exists on all ten of the Atwood & Morrill Co., 18 inch Vacuum Breakers used in the Torus to drywell penetrations.

Overall containment integrity has been demonstrated during the Type A ILRT, on numerous occasions. A review of these test results has not shown that the lack of performing a Type B test adversely affected the results of the Type A test. Since the Type B test is performed on static seals, both the shaft packing and o-ring seals, it is unlikely that degradation of the leak tightness would result in a failed test. The review of the historical data of Type B test results of the body flange for all vacuum breakers has shown consistent leak

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tightness. The flange seals have shown continued LLRT performance and have not degraded during subsequent refuel outages. Vacuum breakers are manually exercised quarterly to confirm operability and no significant changes have been observed in the unseating torque values. Since the unseating torque is unchanged, it is inferred that there is no change in the shaft seal characteristics, and hence no change in the shaft sealing capability. Furthermore, two vacuum breakers are overhauled each refueling outage. The overhaul includes replacement of the packing and o-rings, and a complete inspection of all internal parts.

Torus Exhaust Bypass Valve 1-AC-9 & 1-AC-12 (X-25/202D)

The torus exhaust bypass valves are 2" air operated containment isolation valves located on a branch line from drywell vent penetration X-25/202D. Valves 1-AC-9 & 1-AC-12 exhibit standard fiber gasket material on both the upstream and down stream flange connections and do not exhibit testable flanges in either the upstream or downstream direction. The gaskets in the downstream direction (outside of containment) are tested during Type C testing of the system valves; however the inboard gaskets are only tested during the Type A ILRT of the overall containment. Consecutive ILRTs have been performed during 1991 (RFO13), 1994 (RFO14) and is scheduled for current RFO15. No leakage has been observed at these locations. The ILRT "as-left" results of .4077 wt. %/day and .3143 wt. %/day have shown acceptable (1.2 wt. %/day Technical Specification limit) and improved containment integrity performance.

Head Spray System Flange X-17

A piping system flange exists between the inboard containment isolation check valve 1-HS-5 and the outboard motor operated containment isolation valve 1-HS-4 to allow removal of the head spray piping when removing the reactor head cover. The flange only receives a leak test during Type A ILRT of the overall containment. The configuration does not provide for an appropriate Type B LLRT of this flange.

The failure to adequately perform Appendix J testing on these penetrations calls into question the ability to demonstrate the operability of the primary containment during the past operating cycles. Since Millstone has failed to adequately demonstrate primary containment integrity, as required by Technical Specification 3.7.A.3, this event is reportable pursuant to 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications.

IV. Corrective Action

The qualifications and experience of the individual currently responsible for the Millstone Unit No. 1 Appendix J program has been reviewed and has been verified to be satisfactory. The individuals responsible for Appendix J are now part of the Condition Based Maintenance (CBM) group. The CBM group has been organized to include personnel from the same discipline to work together across all five units on areas such as the Appendix J program. The Appendix J group, as part of the IST organization, now reports to one manager. Therefore, the individuals are able to establish uniformity among the Appendix J programs and specialize in the area of leak rate testing.

The Appendix J program review is ongoing. Any additional discrepancies which affect the LLRT will be included in a supplement to this LER. In addition, it will be investigated as to whether any of the issues would have impacted the ILRTs. This self-assessment will be completed and the final results reported to the NRC via a supplement to this LER.

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Modifications will be made to the procedure for performing the local leak rate test on the vacuum breakers to include testing of the shaft packing and stuffing box. LLRTs will be performed before the overall containment Type A ILRT, and prior to startup for operating cycle 16.

Modifications will be made to the containment side bolting flange of valves 1-AC-9 & 1-AC-12, as well as to the bolted flange between valves 1-HS-4 and 1-HS-5 during refueling outage 15. LLRTs will be performed before the overall containment Type A ILRT, and prior to startup for operating cycle 16.

V. Additional Information

The following are Northeast Nuclear Energy Company's (NNECO's) commitments contained within this letter. All other statements contained within this letter are for information only.

- B15820-1 NNECO commits to modify the procedure for performing the LLRT on the vacuum breaker to include testing of the shaft packing and stuffing box. LLRTs will be performed before the overall containment Type A ILRT prior to startup for operating cycle 16.
- B15820-2 NNECO commits to modify the containment side bolting flange of valves 1-AC-9 & 1-AC-12 during refueling outage 15. LLRTs will be performed before the overall containment Type A ILRT prior to startup for operating cycle 16.
- B15820-3 NNECO commits to modify the bolted flange between valves 1-HS-4 and 1-HS-5 during refueling outage 15. LLRTs will be performed before the overall containment Type A ILRT prior to startup for operating cycle 16.
- B15820-4 NNECO commits that the self-assessment of the Appendix J program will be completed and the final results reported to the NRC via a supplement to this LER by March 1, 1997.

Similar Events

LER 96-026-00

Manufacturer Data

None.