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FACIL:50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
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SUBJECT: LER 93-003-00:on 930709,Unit 2 operated outside of Tech Spec Surveillance Requirement 4.6.1.1 b from initial plant startup.Caused by inadequate technical review.Technical review process for procedures revised.W/930809 ltr.

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August 9, 1993
NMP88387

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: Docket No. 50-410
LER 93-03

Gentlemen:

In accordance with 10 CFR 50.73 (a)(2)(i)(B), we are submitting LER 93-03, "Violation of Technical Specification Surveillance Requirement Due to an Inadequate Surveillance Procedure."

Very truly yours,

John H. Mueller
Plant Manager - NMP2

JHM/JTP/lmc
Attachment

xc: Mr. Thomas T. Martin, Regional Administrator, Region I
Mr. Wayne L. Schmidt, Senior Resident Inspector

160003



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NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

# LICENSEE EVENT REPORT (LER)

| FACILITY NAME (1) | DOCKET NUMBER (2) | PAGE (3) |
|---|---|---|
| Nine Mile Point Unit 2 | 0 5 0 0 0 4 1 0 | 1 OF 0 7 |

TITLE (4) Violation of Technical Specification Surveillance Requirement Due to an Inadequate Surveillance Procedure

| 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 NAMES | DOCKET NUMBER(S) |
| | | | | | | | | | N/A | 0 5 0 0 0 |
| 0 7 | 0 9 | 9 3 | 9 3 | — 0 0 3 | — 0 0 | 0 8 | 0 9 | 9 3 | N/A | 0 5 0 0 0 |

| OPERATING MODE (9) | 1 | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11) | | | |
|---|---|---|---|---|---|
| POWER LEVEL (10) | 1 0 0 | 20.402(b) | 20.405(c) | 50.73(a)(2)(iv) | 73.71(b) |
| | | 20.405(a)(1)(i) | 50.36(c)(1) | 50.73(a)(2)(v) | 73.71(c) |
| | | 20.405(a)(1)(ii) | 50.36(c)(2) | 50.73(a)(2)(vii) | OTHER (Specify in Abstract below and in Text, NRC Form 366A) |
| | | 20.405(a)(1)(iii) | X 50.73(a)(2)(i) | 50.73(a)(2)(viii)(A) | |
| | | 20.405(a)(1)(iv) | 50.73(a)(2)(ii) | 50.73(a)(2)(viii)(B) | |
| | | 20.405(a)(1)(v) | 50.73(a)(2)(iii) | 50.73(a)(2)(x) | |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER |
|---|---|
| John T. Conway, Operations Manager NMP2 | AREA CODE 3 1 5 3 4 9 - 2 6 9 8 |

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 fifteen single-space typewritten lines) (16)


On July 9, 1993, the Operations Department determined that Nine Mile Point Unit 2 (NMP2) had operated outside of Technical Specification Surveillance Requirement 4.6.1.1.b from initial plant startup in the Spring of 1987 until March 1993. Specifically, manual vent, drain, and test valves on primary containment penetrations of the Residual Heat Removal System (RHS) and the Reactor Core Isolation Cooling System (ICS) were not verified to be closed at least once per 31 days as required by the Technical Specification Surveillance Requirement. These valves are required to be closed during accident conditions. At the time of this determination, the reactor mode switch was in the "RUN" position (Operational Condition 1) with the plant operating at approximately 100 percent rated thermal power.

The root cause of this Technical Specification Surveillance Requirement violation is inadequate technical review in preparing the original surveillance procedure. Contributing causes were deficient engineering design basis documentation, specifying the valves required to be verified closed, and inadequate control of revisions to the engineering document.

Corrective actions consisted of revising the surveillance procedure, verifying the closed position of the valves, and revising the engineering documentation. Processes involving technical accuracy of engineering lists, revisions to surveillance procedures and timeliness of response to discrepancies are being further evaluated.

## I. DESCRIPTION OF EVENT

On July 9, 1993, the Operations Department determined that Nine Mile Point Unit 2 (NMP2) had operated outside of Technical Specification Surveillance Requirement 4.6.1.1.b from initial plant startup in the Spring of 1987 until March 1993. Specifically, 11 manual vent, drain, and test valves on primary containment penetrations of the Residual Heat Removal System (RHS) and the Reactor Core Isolation Cooling System (ICS) were not verified to be closed at least once per 31 days as required by the Technical Specification Surveillance Requirement. These valves are required to be closed during accident conditions. At the time of this determination, the reactor mode switch was in the "RUN" position (Operational Condition 1) with the plant operating at approximately 100 percent rated thermal power.

Niagara Mohawk Power Corporation instituted a self-assessment review of the NMP2 10 CFR 50 Appendix J program to assure that compliance is maintained. During that review in December 1992, a discrepancy was identified between the valves listed in Nuclear Engineering Design Document M2-0001, Revision 3, "List of Primary Containment Penetrations Required to be Closed During Accident Conditions per Technical Specification Section 3/4.6.1.1.b," and Operations Surveillance Procedure N2-OSP-CNT-M001, Revision 3, "Primary Containment Penetration Verification Test." The following nine valves were included in the engineering document but not in the surveillance procedure: 2RHS*V317, 2RHS*V318, 2RHS*V405, 2RHS*V431, 2RHS*V266, 2RHS*V267, 2ICS*V17, 2ICS*V18, and 2ICS*V19. Additionally, valves 2RHS*V268 and 2RHS*V269 were not in either the engineering document M2-0001 or the surveillance procedure N2-OSP-CNT-M001. The engineering document serves as the basis document for the surveillance procedure. The surveillance procedure implements Technical Specification surveillance requirement 4.6.1.1.b, which states "Primary containment integrity shall be demonstrated at least once per 31 days by verifying that all primary containment penetrations** not capable of being closed by OPERABLE containment automatic isolation valves and required to be closed during accident conditions are closed by valves, blind flanges, or deactivated automatic valves secured in position, . . ."

A Deviation Event Report (DER) was written on January 27, 1993, to document and resolve this discrepancy. At that time, it was difficult to determine which document was correct. However, surveillance procedure N2-OSP-CNT-M001 was revised in March 1993 to include all 11 of the above listed valves because it was realized that they might be added to engineering document M2-0001 after complete evaluation of the noted discrepancy. The closed position of these valves was verified in March 1993.

Nuclear Engineering Design, Licensing, and Operations reviewed and subsequently revised the criteria for selection of valves to be included in engineering document M2-0001. Revision 4 of M2-0001 was approved June 1, 1993 and included all 11 of the above listed valves. Subsequently, the review of the reportability of this issue continued resulting in the conclusion, on July 9, that a violation of Technical Specifications surveillance requirements had occurred.

## II. CAUSE OF EVENT

The root cause of this Technical Specification Surveillance Requirement violation is inadequate technical review in preparing the original surveillance procedure, N2-OSP-CNT-M001. This procedure was prepared in 1985, prior to initial plant startup, and did not include the 11 valves listed above. No engineering list was available during preparation of this procedure and the original criteria for determining which valves needed to be verified to satisfy Technical Specifications cannot be re-created at this time.

A contributing cause was an inadequate original engineering document M2-0001 (written in 1989) and its subsequent revisions, in that valves 2RHS*V268 and 2RHS*V269 were not included. Another contributing cause was inadequate control of revisions to engineering document M2-0001 in that the affected surveillance procedure was not triggered for revision when M2-0001 was revised.

## III. ANALYSIS OF EVENT

This condition is reportable per 10 CFR 50.73 (a)(2)(i)(B), "any operation or condition prohibited by the plant's Technical Specifications."

The closed position of the 11 valves has been verified, since initial plant startup, after completion of Local Leak Rate Tests (LLRTs), during an Integrated Leak Rate Test (ILRT), and during system valve line-ups following the refueling outages. LLRTs have been performed on the isolation valves in the RHS heat exchanger vent lines and the ICS turbine exhaust line three times since initial plant startup. The restoration to normal section of the procedure requires that valves 2RHS*V317, 2RHS*V318, 2RHS*V266, 2RHS*V267, 2RHS*V268, 2RHS*V269, 2ICS*V17, 2ICS*V18, and 2ICS*V19 have been verified closed and the lines capped. An ILRT was performed on the primary containment in January 1991 and the "as found" and "as left" values were well within the acceptance criteria. The restoration to normal section of the ILRT procedure requires that valve 2RHS*V405 be closed and valve 2RHS*V431 be closed and capped. Further, following both of NMP2's refueling outages, the closed position of the 11 valves was verified during system valve line-ups.

Also, the configuration of the valves on the RHS heat exchanger vent lines and the ICS turbine exhaust line is designed to prevent the release of radioactive material from the primary containment in the event of an accident. The RHS heat exchanger vent lines penetrate the primary containment and ultimately discharge to the suppression pool, (see Figure 1a and 1b for a simplified diagram). The manual vent, drain, and test valves are sets of double valves connected in series on piping between the primary containment and the outboard containment isolation valve. The isolation valves are normally closed, remote, motor operated valves with position indication in the Control Room. Additionally, the vent, drain, and test lines are capped.

The ICS turbine exhaust line penetrates the primary containment and discharges to the suppression pool, (see Figure 2 for a simplified diagram). The manual test valves are located on piping between two automatic isolation valves on the vacuum breaker line. The automatic

## III. ANALYSIS OF EVENT (cont.)

isolation valves are normally open, remote, motor operated valves with position indication in the Control Room. The test lines are either capped or plugged.

Therefore, based on verification of the closed position of the valves, and the configuration, as described above, primary containment integrity was maintained when required and, in the event of an accident, there would have been no adverse consequences to the health and safety of the general public or plant personnel.

## IV. CORRECTIVE ACTIONS

Corrective actions taken as a result of this event are:

1. The technical review process for procedures was revised in October 1992 to improve the technical accuracy of surveillance procedures. The last periodic review for surveillance procedure N2-OSP-CNT-M001 was in 1991.

2. Surveillance procedure N2-OSP-CNT-M001 was revised in March 1993 (prior to determining that a Technical Specification surveillance requirement violation existed) to include all 11 of the above listed valves, because it was realized that they might be added to engineering document M2-0001 after complete evaluation of the discrepancy identified in the self-assessment review in December 1992. The closed position of the valves was verified in March 1993.

3. Revision 4 of M2-0001 was approved in June 1993. All 11 of the above listed valves are now included in M2-0001. All valves listed in M2-0001 are either verified closed by surveillance procedure N2-OSP-CNT-M001 or their closed position is controlled administratively in satisfaction of the technical specification requirements.

4. A sample of similar surveillance procedures associated with engineering lists were reviewed. Surveillance procedures N2-OSP-CNT-CS001, "Primary Containment Penetration Cold Shutdown Valve Line-up Verification Test," and N2-OSP-CNT-M003, "Reactor Building Integrity Verification Test," were compared to their respective engineering lists. No violations of Technical Specifications were found. Three discrepancies were identified which will be resolved by an appropriate revision to the engineering list.

5. A Deviation Event Report (DER) has been initiated to determine the cause of the failure to maintain Technical Specifications surveillance procedures in agreement with their respective engineering lists.

6. The Engineering Department will develop a schedule for performing a review of the engineering controlled lists identified in procedure NIP-DES-04, "List of Controlled Lists," for technical accuracy. This schedule will be presented to the Station Operations Review Committee for approval.

## IV. CORRECTIVE ACTIONS (cont.)

7. A DER has been written to address the process of updating affected surveillance procedures upon revision of engineering lists.

8. A DER has been written to address the lack of timely resolution of the initial discrepancy identified in the self-assessment review in December 1992. The DER will include a root cause evaluation and any necessary corrective actions.

## V. ADDITIONAL INFORMATION

A. Failed components: none.

B. Previous similar events:

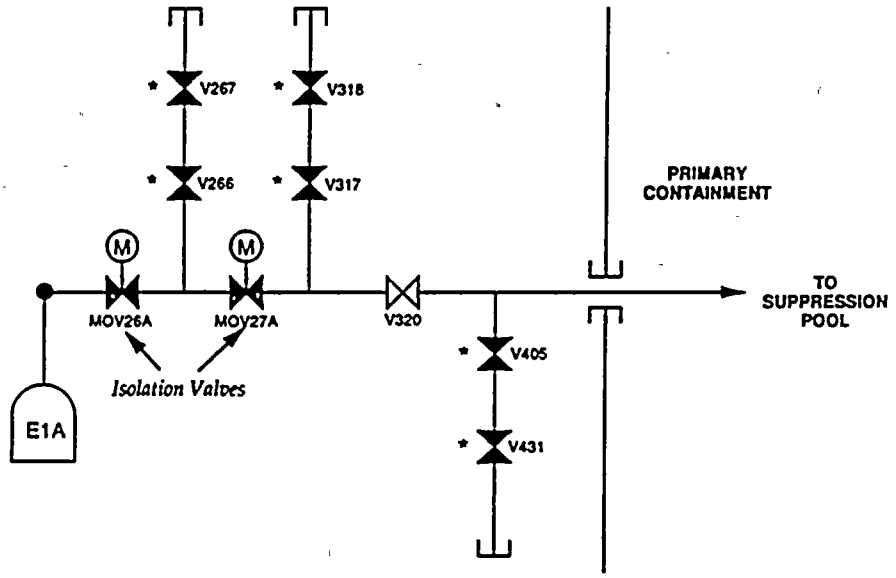
Nine Mile Point Unit 2 has experienced numerous LERs that were caused by inadequate technical review of procedures: LERs 92-15, 92-12, 92-05, 92-02, 91-15, 90-23, 90-14, 90-11, 90-10, 90-07, 89-20, 89-18, 89-15, 88-16, and 87-28. Generally, the corrective actions from these LERs were specific to their events and thus would not have prevented this LER. A corrective action from LER 92-12, "Technical Specification Violation as a Result of a Failure to Test Valves in Accordance with ASME Section XI due to Personnel Error," addressed an improvement in the technical review of procedures. Specifically, technical and periodic reviewers are required to utilize source documents to ensure commitments and codes are satisfied. However, these corrective actions had not been implemented prior to the last periodic review of procedure N2-OSP-CNT-M001 which took place in 1991.

LER 88-40, "Niagara Mohawk Management Deficiency Results in Missed Snubber Inspection in Violation of Technical Specifications," has a similar cause in that a proper engineering list was not written and proper controls were not in place to ensure a Technical Specifications required surveillance was implemented. Corrective Actions from this LER would not have prevented this Technical Specification Surveillance Requirement violation.

C. Identification of components referred to in this LER:

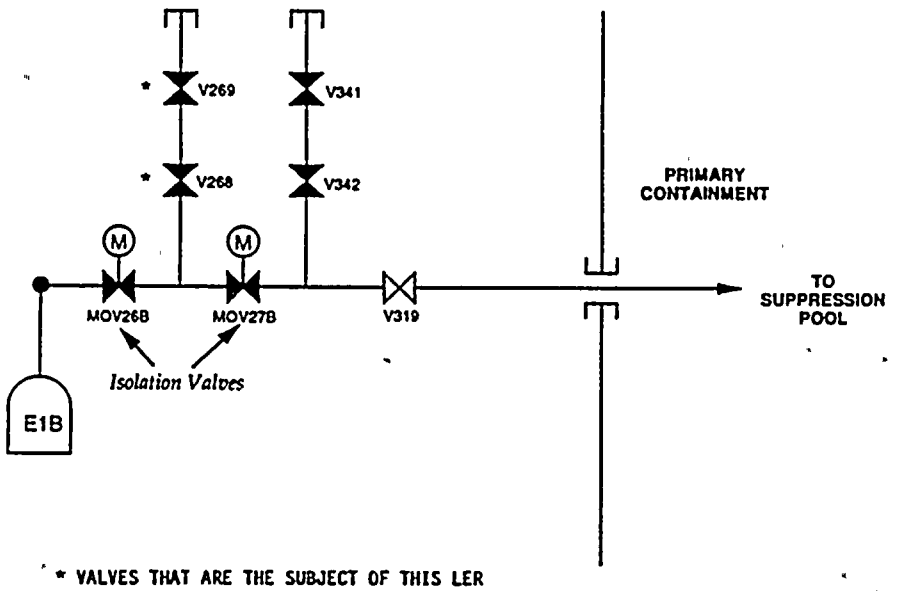
| COMPONENT | IEEE 803 EIIS FUNCTION | IEEE 805 SYSTEM ID |
|---|---|---|
| Primary Containment | NA | NH |
| Penetration | PEN | NH |
| RHR System | N/A | BRO |
| Reactor Core Isolation Cooling System | N/A | BN |

*Figure 1a: RHS "A" Valve Locations*



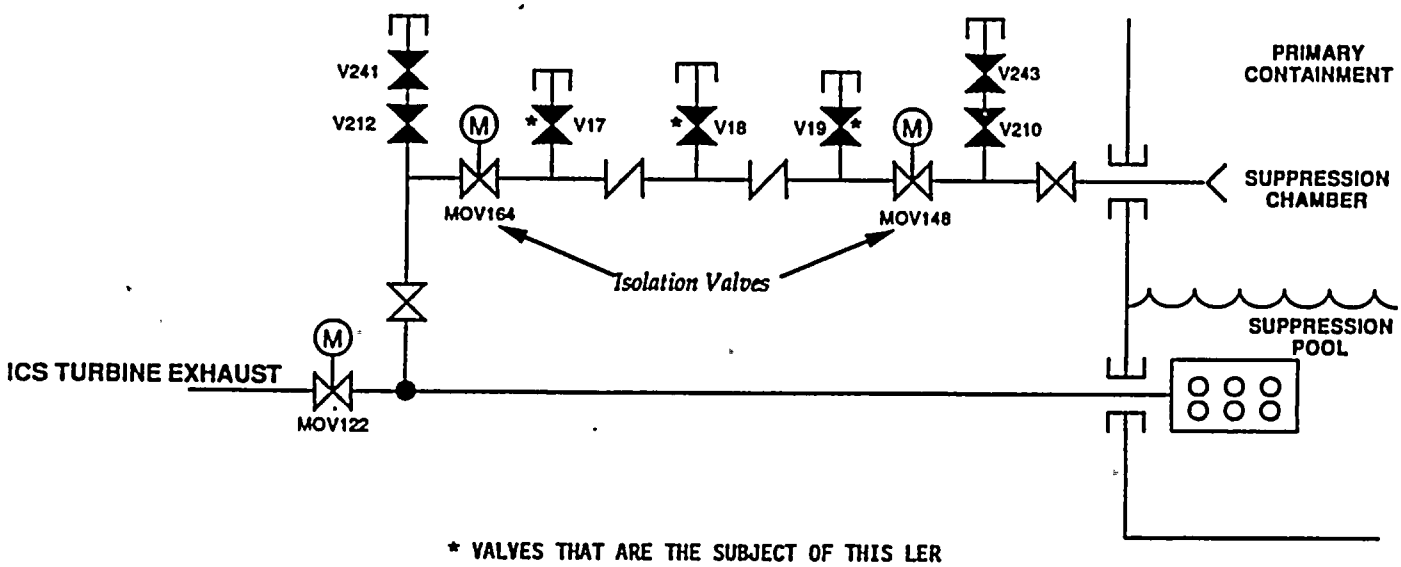

* VALVES THAT ARE THE SUBJECT OF THIS LER

*Figure 1b: RHS "B" Valve Locations*




* VALVES THAT ARE THE SUBJECT OF THIS LER

*Figure 2: ICS Valve Locations*




* VALVES THAT ARE THE SUBJECT OF THIS LER