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FACIL:50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
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RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 94-003-01:on 940830,discovered surveillance testing of svc water pumps not in compliance w/TS requirements.Caused by inadequate managerial methods.Mgt review of procedure preparation increased.W/941031 ltr.

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NIAGARA MOHAWK

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October 31, 1994
NMP2L 1506

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

RE: Docket No. 50-410
LER 94-03, Supplement 1

Gentlemen:

In accordance with 10CFR50.73 (a)(2)(i)(B), we are submitting LER 94-03, Supplement 1, "Surveillance Tests of Service Water Not Performed Per Technical Specification Requirements Because of Inadequate Managerial Methods."

This Supplement is being issued to transmit the root cause and corrective actions for the incorrectly performed In-Service Testing of Service Water System valves 2SWP*MOV77A and 2SWP*MOV77B. LER 94-03 was originally submitted on September 29, 1994.

Very truly yours,

K. A. Dahlberg
Plant Manager - NMP2

KAD/RLM/kab
Attachment

xc: Mr. Thomas T. Martin, Regional Administrator, Region I
Mr. Barry S. Norris, Senior Resident Inspector

070061

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NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WTH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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) Surveillance Tests of Service Water not Performed per Technical Specification Requirements Because of Inadequate Managerial Methods

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 8	3 0	9 4	9 4	- 0 0 3	- 0 1	1 0	3 1	9 4	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, Manager Operations 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	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	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)

At 1430 hours on August 30, 1994, with the reactor at 100 percent power with the mode switch in RUN (Operational Condition 1), it was discovered that the surveillance testing of the service water pumps was not in compliance with Technical Specification requirements. At this time, it was also determined that the surveillance testing of the Intake Heater Deicing System was not in compliance with Technical Specification requirements. The required surveillance testing had been performed during plant operation, however, the Technical Specifications require that these specific surveillances be performed during shutdown. As a result of the investigation of these deviations, another similar deviation was identified. Two Service Water System valves were tested before rather than during the third refueling outage as required by the In-Service Testing (IST) program plan.

The root cause for the non-compliance with the Technical Specification requirements is inadequate managerial methods in that administrative procedures did not provide the necessary guidance and controls for procedure development. The root cause for the improperly performed IST test was inadequate managerial methods.

Corrective actions for these events included: Submitting an Application for Amendment to delete the "during shutdown" requirement for the referenced surveillance requirements; increased management review of procedure preparation and review activities; initiation of a comprehensive verification program of Technical Specification surveillance requirements; performing service water valve testing on a quarterly basis; and reviewing the IST program for other errors and revising the ambiguous "R" frequency code.

I. DESCRIPTION OF EVENT

At 1430 hours on August 30, 1994, with the reactor at 100 percent power with the mode switch in RUN (Operational Condition 1), it was discovered that the surveillance testing of the service water pumps was not in compliance with Technical Specification requirements. At this time, it was also determined that the surveillance testing of the Intake Heater Deicing System was not in compliance with the Technical Specification requirements. The required surveillance testing had been performed during plant operation, however, the Technical Specifications require that these specific surveillances be performed during shutdown. At this time the Service Water System was declared inoperable and Surveillance Requirement 4.0.3 was invoked. This provided a 24 hour delay before entering LCO 3.0.3 which would have required that Nine Mile Point Unit 2 (NMP2) be in cold shutdown within 37 hours. As a result of the investigation of these deviations, another similar deviation was identified. Two Service Water System valves were tested before rather than during the third refueling outage as required by the In-Service Testing program plan.

NMP2 Technical Specification Section 3/4.7.1.1 applies to the Service Water System during plant OPERATIONAL CONDITIONS 1, 2 and 3. Specifically, Surveillance Requirement 4.7.1.1.1.d.4 requires that at least once per 18 months during shutdown the service water pumps be run and that discharge pressure be equal to or greater than 80 psig with pump flow equal to or greater than 6,500 gpm. Surveillance Requirement 4.7.1.1.1.d.5 also requires that at least once per 18 months during shutdown the resistance of each feeder cable and associated heater element in the Intake Heater Deicing System be verified greater than or equal to 28 ohms.

Technical Specification Section 3/4.7.1.2 applies to the Service Water System during shutdown conditions, i.e., OPERATIONAL CONDITIONS 4 and 5. Specifically, Surveillance Requirements 4.7.1.2.1.d.4 and 4.7.1.2.1.d.5 are essentially the same as 4.7.1.1.1.d.4 and 4.7.1.1.1.d.5, respectively.

The surveillance testing discrepancy was identified during a review of the results of recent pump curve validation testing on the service water pumps. At the time the discrepancy was identified, Surveillance Requirements 4.7.1.1.1.d.4, 4.7.1.1.1.d.5, 4.7.1.2.1.d.4 and 4.7.1.2.1.d.5 had been satisfied with the exception of the specified plant shutdown condition requirement.

At 2222 hours on August 30, 1994, the NRC orally granted discretionary enforcement from LCO 3.0.3 and Action f of LCO 3.7.1.1. The NRC provided a written grant of discretionary enforcement on September 2, 1994. Because of the discretionary enforcement, a plant shutdown was not initiated.

No equipment failure resulted from this event, nor did any inoperable component or system contribute to this event. The non-compliance with respect to testing the service water pumps existed since the end of the last Unit 2 refueling shutdown in November 1993. The non-compliance with respect to the Intake Heater Deicing System existed since receipt of the initial license on October 31, 1986.

I. DESCRIPTION OF EVENT (Cont'd)

During the review prompted by this event, on September 20, 1994 another similar error was noted. Specifically, the Service Water System (SWP) traveling screen bypass valves 2SWP*MOV77A and 2SWP*MOV77B are required to be stroked in accordance with the In-Service Testing (IST) requirements of ASME Section XI and Technical Specification 4.0.5. The frequency for testing is dictated by a relief request and is set at "during each refueling outage." On August 23, 1993 the valves were stroked during a biocide treatment while the plant was in Operational Condition 1 at approximately 100 percent of rated thermal power. During the subsequent refueling outage, credit was taken for the valve stroking performed in August and consequently the valves were not restroked during the refueling outage as required by the IST program plan.

II. CAUSE OF EVENT

The root cause of the non-compliance with Technical Specification requirements was determined to be inadequate managerial methods which allowed approval of procedures without adequate critique or technical review. During the original production of procedures N2-ESP-SWP-R791, "Refueling Cycle SW Heater Resistance Test," and N2-OSP-SWP-Q002, "Service Water Pump and Valve Operability Test," the governing Administrative Procedures that were in place did not provide the necessary guidance and controls for procedure development and review to ensure that the procedures satisfied all the Technical Specification requirements. In particular, the Technical Specification Surveillance Requirement of performance once per 18 months during shutdown, was not identified in the procedures and, as a result, was not performed. Contributing factors to this event were poor written communications in the test procedures, poor training and qualifications of technical reviewers, and poor work practices by procedure preparers and reviewers.

Poor training and qualification of technical reviewers resulted in their failure to note that the surveillance requirement of "during shutdown" was not specified in any revision of Technical Specification procedure N2-OSP-SWP-Q002 or in Revisions 0 and 1 of Technical Specification procedure N2-ESP-SWP-R791. Both N2-OSP-SWP-Q002 and N2-ESP- SWP-R791 contained the proper Technical Specification references; 4.7.1.1.1.d.4 and 4.7.1.2.1.d.4 for N2-OSP-SWP-Q002 and 4.7.1.1.1.d.5 and 4.7.1.2.1.d.5 for N2-ESP-SWP-R791.

Procedures N2-OSP-SWP-Q002 and N2-ESP-SWP-R791 were poorly written in that relevant information was omitted. Revisions 0 and 1 of N2-OSP-SWP-Q002 did not contain the words "during shutdown" in the Frequency section of the procedure, nor was there a mode requirement in the Prerequisites section. The words "during shutdown" were added to the Frequency section of N2-ESP-SWP-R791 in Revision 2 (8/15/92), however, the prerequisite section maintained the word "ANY" under the Plant Condition heading. In addition, the test methodology of both procedures does not physically require the plant to be in a shutdown condition to be performed.

II. CAUSE OF EVENT (Cont'd)

Poor work practice on the part of the preparers and technical reviewers resulted in their failure to note that the surveillance requirement of "during shutdown" was not specified in any revision of Technical Specification procedure N2-OSP-SWP-Q002 or in Revisions 0 and 1 of Technical Specification procedure N2-ESP-SWP-R791. Both N2-OSP-SWP-Q002 and N2-ESP-SWP-R791 contained the proper Technical Specification references; 4.7.1.1.1.d.4 and 4.7.1.2.1.d.4 for N2-OSP-SWP-Q002 and 4.7.1.1.1.d.5 and 4.7.1.2.1.d.5 for N2-ESP-SWP-R791.

The root cause for the improperly performed IST on valves 2SWP*MOV77A and 2SWP*MOV77B was inadequate managerial methods. Specifically, the "R" (Refueling) frequency code was not adequately defined by the IST program, allowing various interpretations, for example: 1) every 18 months; 2) not to exceed 24 months; 3) every other fuel cycle; and 4) strictly during the refueling outage. Interpretations were made by the IST program manager verbally to address various situations, but not all were documented in writing. In the case of 2SWP*MOV77A and 2SWP*MOV77B, the relief request frequency was misinterpreted to mean once per 18 months, and the test was removed from the third refueling outage scope. The valves were then stroke tested in August of 1993 as part of the Service Water System biocide treatment.

Contributing to the root cause was a misapplied procedure step. The prerequisite for the IST procedure, to be performed in Operational Condition 4 or 5, was marked "N/A" (not applicable) by the Station Shift Supervisor at the time of test performance. This bypassed the normal review processes of a procedure revision which may have detected the error.

III. ANALYSIS OF EVENT

These events are considered reportable in accordance with 10CFR50.73 (a)(2)(i)(B), because the surveillance tests were not performed in compliance with the condition required by the Technical Specifications. Surveillance Requirements 4.7.1.1.1.d.4 and 4.7.1.2.1.d.4 are performed to ensure operability of the service water pumps. Surveillance Requirements 4.7.1.1.1.d.5 and 4.7.1.2.1.d.5 are performed to ensure operability of the Intake Heater Deicing System. The Technical Specifications require that these tests be performed at least once every 18 months during shutdown. Also, the wording of the IST program plan required stroke testing of the traveling screen bypass valves "during each refueling outage." The test was not performed during the refueling outage, which was not in accordance with the IST program plan and surveillance requirement 4.0.5.

At the time the discrepancy was identified, Surveillance Requirements 4.7.1.1.1.d.4, 4.7.1.1.1.d.5, 4.7.1.2.1.d.4 and 4.7.1.2.1.d.5 were satisfied with the exception of the specified plant shutdown condition requirement. The service water pumps are tested at quarterly intervals in accordance with the ASME Section XI Pump and Valve Program. With the exception of the shutdown condition, the requirements of the ASME testing are the same as required by Surveillance Requirements 4.7.1.1.1.d.4 and 4.7.1.2.1.d.4. The Intake Heater Deicing System

III. ANALYSIS OF EVENT (Cont'd)

was also tested at least once every 18 months. This system is only required to be operable when intake tunnel water temperature is less than 39 degrees Fahrenheit. At the time the non-compliance was identified, the intake tunnel water temperature was approximately 68 degrees Fahrenheit.

Plant operation with Surveillance Requirements 4.7.1.1.1.d.4 and 4.7.1.1.1.d.5 having been performed during plant operation rather than during shutdown will not create any adverse consequences or safety issues. All service water pumps have been individually tested at quarterly intervals in accordance with the ASME Section XI Pump and Valve Program. Pump performance testing in this manner is not adversely impacted by any plant operating condition or system lineup. The service water pump operability test is a pump performance test and not a system flow test. Testing the resistance for each feeder cable and associated heater element in the Intake Heater Deicing System requires making the system inoperable, however, the test performance itself is not affected by the operational condition of the unit. In addition, performance of this test when the Intake Heater Deicing System is not required to be operable is a safety enhancement.

The basis for the relief request associated with stroke testing of valves 2SWP*MOV77A and 2SWP*MOV77B was to limit the frequency of the test. This would limit the amount of time the traveling screens were bypassed thus limiting the potential to foul the Service Water System with debris from Lake Ontario. The relief was granted for the IST program plan which required the valves be stroked during each refueling outage. Following identification of this event, Design Engineering re-examined the validity of the relief request. It was determined that the SWP was operable for some time without the traveling screens because the SWP pump suction strainers would remove debris prior to its fouling the system. It was also determined that there was no greater likelihood of fouling the system at power than during the refueling outage. The test that was performed August 23, 1993 did verify the operability of 2SWP*MOV77A and 2SWP*MOV77B and it did meet the technical test requirements of the IST program plan.

The events described above had no adverse safety consequences at any power level. They did not adversely affect any other safety system nor the operators ability to maintain safe reactor plant conditions. These events in no way adversely affected the safety of the general public or plant personnel.

IV. CORRECTIVE ACTIONS

Corrective actions taken as a result of this event are: requested Discretionary Enforcement from LCO 3.0.3 and Action f for LCO 3.7.1.1; submitted an Application for Amendment to delete the "during shutdown" requirement for the referenced surveillances; and incorporated quarterly testing of valves 2SWP*MOV77A and 2SWP*MOV77B into the IST Program plan.

IV. CORRECTIVE ACTIONS (cont.)

Other actions that will be taken are:

1. An inadequate technical review has been recognized in the past as being one of the major reasons for violating specific requirements. Niagara Mohawk has upgraded specific programs whose purpose is not only to ensure that adequate procedures are written but also to ensure the review of these procedures is carried out in a manner that should eliminate events such as these. These include, but are not limited to the following procedurally controlled programs:

   - NIP-SEV-01, APPLICABILITY REVIEWS AND SAFETY EVALUATIONS
   - NIP-PRO-03, PREPARATION AND REVIEW OF TECHNICAL PROCEDURES
   - PWM-PRO-0105, TECHNICAL PROCEDURE VERIFICATION AND VALIDATION

   Adherence to these requirements will be re-enforced by Senior Branch Supervision (General Supervisors or higher) reviewing selected revised procedures prior to publication with the procedure author and Qualified Technical Reviewer to ensure the procedure preparation and review activities were performed in full compliance with program requirements and management expectations.

2. As a result of previous similar events, Niagara Mohawk has initiated a program to perform a Technical Specification validation at Nine Mile Point Unit 2. Included in this validation will not only be a verification that all surveillance requirements are being performed, it will also ensure that all the implementing procedures contain any special mode restraints that apply. The validation program will also include a complete validation of the Preventive Maintenance Surveillance Test database with regards to Technical Specification surveillance requirements including frequencies and special mode requirements.

3. The IST Program Plan will be revised by January 31, 1995 to clarify and define the test frequency codes. The more precise definitions will limit interpretation of these codes.

4. The requirements of Nuclear Interfacing Procedure NIP-PRO-01, "Use of Procedures," regarding the use of "Not Applicable" and notes in procedures will be reiterated with Operations personnel during continued training. This training will be implemented by March 31, 1995.

5. The investigations of the IST Program initiated by this event identified several previously unrelated Deviation Event Reports (DERs) that may indicate potential weaknesses in the IST Program management. An evaluation of the IST Program is underway, and any other weaknesses identified will be evaluated and corrected under the DER process.

V. ADDITIONAL INFORMATION

A. Failed components: none.

B. Previous similar events: NMP2 has had a number of instances of missed or inadequately performed Surveillance Tests. Since 1991 there have been seven LERs involving events and causal factors similar to this event; specifically, LERs 91-021, 92-002, 92-005, 92-012, 93-003, 93-004, and 93-005.

The corrective action for the first four events focused on the specific circumstances of the event and would not have prevented this event. The last three LERs involved deficiencies in the implementation of 10CFR50 Appendix J testing and were identified as a result of a thorough independent review of the NMP2 Appendix J program. This review was initiated as a result of a perceived problem trend in the Appendix J program, and the corrective actions for the resulting LERs focused on the program improvements generated by the review. The corrective actions of these LERs would not have prevented this event.

This LER describes corrective actions, initiated as a result of previous similar events, which will result in a thorough review, similar to that performed for Appendix J requirements, for the remainder of the Technical Specification requirements. While this review may initially result in identification of additional deviations, a long term reduction of similar events is expected as a result of correcting any existing deficiencies and establishing a comprehensive reference for use by personnel administering the surveillance testing programs.

C. Identification of components referred to in this LER:

COMPONENT	IEEE 803 EIIS FUNCTION	IEEE 805 SYSTEM ID
Pump	P	KG
Cable, Low Voltage Pwr	CBL4	KG
Service Water System	N/A	KG
Valve	V	KG
De-Icing Heater	EHTR	KG