NIAGARA MOHAWK
GENERATION
BUSINESS GROUP

NINE MILE POINT NUCLEAR STATION/LAKE ROAD, P.O. BOX 63, LYCOMING, NEW YORK 13093

September 3, 1998
NMP1L 1356

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

RE: Docket No. 50-220
LER 98-15

Gentlemen:

In accordance with 10CFR50.73(a)(2)(i) and 10CFR50.73(a)(2)(v), we are submitting LER 98-15, "Breach of Primary Containment Due to Personnel Error."

Very truly yours,

Robert G. Smith

Robert G. Smith
Plant Manager - NMP1

RGS/GJG/kap
Enclosure

xc: Mr. H. J. Miller, Regional Administrator
Mr. B. S. Norris, Senior Resident Inspector
Records Management

IE22

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES:

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH 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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Nine Mile Point Unit 1	05000220	1 OF 6

TITLE (4)
Breach of Primary Containment Due to Personnel Error

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)
08	04	98	98		015		00	09	03	98	N/A	
											N/A	

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check one or more of the following)* (11)			
POWER LEVEL (10)	☐ 20.2201(b)	☐ 20.2203(a)(2)(v)	☒ 50.73(a)(2)(i)	☐ 50.73(a)(2)(viii)
100	☐ 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 and in Text, 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
D. Topley, Operations Manager - NMP1	(315) 349-1752

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
☐ YES *(If yes, complete EXPECTED SUBMISSION DATE)*	☒ NO				

ABSTRACT *(Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines)* (16)

On August 4, 1998, during planned maintenance on the Nine Mile Point Unit 1 (NMP1) Containment Spray (CS) System, primary containment was breached when an applied tagout caused an inadvertent path of communication from the torus to secondary containment. This breach of primary containment is a violation of NMP1 Technical Specification (TS) 3.3.3, Leakage Rate, which resulted in an entry into TS 3.0.1, Operability Requirement. Action was taken in accordance with TS 3.0.1 to place NMP1 in a condition which met the TS 3.3.3 requirements. NMP1 was operating at 100 percent power at the time of this event.

The root cause for this event was determined to be complacency on the part of the operators developing and approving a maintenance tagout.

The immediate corrective action was to close the heat exchanger vent valves and restore the torus pressure. Individual accountability has been appropriately addressed in accordance with Niagara Mohawk Power Corporation (NMPC) policies. Tagout expectations have been reiterated to department personnel. Tagout training will be evaluated, revised and conducted.

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

I. DESCRIPTION OF EVENT

On August 4, 1998, during planned maintenance on the Nine Mile Point Unit 1 (NMP1) Containment Spray (CS) System, primary containment was breached when an applied tagout caused an inadvertent path of communication from the torus to secondary containment. This breach of primary containment is a violation of NMP1 Technical Specification (TS) 3.3.3, Leakage Rate, which resulted in an entry into TS 3.0.1, Operability Requirement. Action was taken in accordance with TS 3.0.1 to place NMP1 in a condition which met the TS 3.3.3 requirements. NMP1 was operating at 100 percent power at the time of this event.

A CS System Loop 121 maintenance outage was planned for implementation on August 4, 1998. In preparation for the CS Loop 121 outage, Work Control personnel prepared eight separate work orders. Two of those work orders were to remove and clean the CS pump 121 strainers. The plant impact statement in those work orders stated that a vent path could be introduced from the torus through the CS heat exchanger if the heat exchanger was not isolated. A tagout request in the work order included tagging closed the inlet valve (80-11) to the heat exchanger which would isolate that vent path.

On July 31, 1998, maintenance personnel provided the work packages to the operations tagout Reactor Operator (RO) for integration of the eight packages for tagouts to encompass all of the work. Without reading the work order plant impact statement, the tagout RO drafted a tagout which did not include requested valve 80-11. The RO identified a different valve that he believed provided similar personnel protection.

On August 3, 1998, during the day shift, another RO was assigned the task of preparing the CS System tagout. The RO inadequately verified that the draft tagout provided adequate personnel protection, and did not review the work order plant impact statement as required by procedure. The RO noted that the original tagout request included valve 80-11. He contacted the RO who prepared the draft tagout and was told that the valve was not needed for personnel protection.

The evening Station Shift Supervisor (SSS) on August 3, 1998 inadequately verified the tagout. The SSS did not review the work order plant impact statement for the CS pump 121 strainer work. He reviewed the plant impacts for the other six work orders but not the strainer work orders because he relied on his familiarity with those jobs. He reviewed the Piping and Instrument Drawing (P&ID) for the CS System but failed to separately evaluate the heat exchanger details which included the vents. Consequently he failed to recognize the flowpath. The deficient tagout was approved, and was to be placed by the oncoming shift on August 4, 1998.

I. DESCRIPTION OF EVENT (Cont'd)

On August 4, 1998, at 0805 hours, the day shift personnel began hanging the tags for the approved tagout on the CS System. At approximately 0830 hours, operation personnel began draining the CS system for the CS pump strainer work. At approximately 1445 hours, an operator reported what appeared to be air flow coming from the Containment Spray 121 discharge strainer drains to the reactor building floor drain sump. Concurrent with the field report, operators received a low torus pressure alarm. Operators determined that containment atmosphere was escaping from the torus through the CS heat exchanger vents due to an inadequate tagout. At 1500 hours, the SSS directed reactor operators to shut the heat exchanger vent valves (80-180 and 80-184) to secure the leak path, and to add the vent valves to the tagout. Operators restored torus pressure to the normal band by adding nitrogen through the vent and purge system.

II. CAUSE OF EVENT

The root cause for this event was complacency on the part of the operators developing and approving the tagout. The operators relied on others, or their past experience, rather than performing their own review of applicable drawings and did not adequately verify acceptable lineups.

A contributing factor to this event was failure to follow the tagout procedure as a tool for the preparation of a tagout by operations personnel. Specifically, failure to review the work order plant impact resulted in a tagout that did not provide adequate isolation.

An additional contributing factor to this event has been determined to be inadequate corrective actions. A 1994 Deviation Event Report (DER) documented a similar event. The actions taken as a result of that DER were short-term in nature and not effective in preventing this event.

III. ANALYSIS OF EVENT

This event is reportable in accordance with 10CFR50.73(a)(2)(i)(B), "any operation or condition prohibited by the plant's Technical Specifications" and 10CFR50.73(a)(2)(v), "any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to: C) Control the release of radioactive material."

The leakage path which was introduced was a one inch line from the torus, through a one quarter inch flow orifice, through a three quarter inch globe valve (two in parallel), through the high point vents of the heat exchanger to the pump discharge strainer vents and drains into the secondary containment. An engineering

III. ANALYSIS OF EVENT (Cont'd)

evaluation has determined that this leakage path resulted in an additional primary containment leakage of 3.6 times the 1.5 percent per day leakage rate allowed by TS 3.3.3.a. Given this additional leakage, the UFSAR doses for a Design Basis Accident remain within the 10CFR100 limits (UFSAR Rev. 15 Section XV 5.2). A review of control room operator doses from an NMPC letter to the NRC, dated March 19, 1984 lists a dose of 9.68 Rem thyroid, 0.077 Rem gamma (whole body), and 0.841 Rem beta (skin) due to containment leakage. Increasing this dose contribution due to containment leakage by a factor of 3.6 results in exceeding GDC-19 limits for the thyroid. Whole body and skin dose remain less than 5 Rem and 30 Rem, respectively. However, the control room operators would take Potassium Iodide (KI) per the NMPC Emergency Plan, which would eliminate the thyroid dose as a concern.

The preceding analysis assumed a constant flow rate through the leakage path at the peak containment pressure of 35 psig. However, due to the configuration of the high point vent piping, initiation of the CS System would have effectively provided a water seal. The four containment spray vent lines join at a common header which connect to the torus. Therefore, when any of the pumps would have started, flow from the system, at 125 psig, would have overcome the containment pressure, thus blocking gaseous releases. For this accident scenario, approximately 2 gpm leakage would have been experienced from the open pump strainers. This reduction in containment leakage would have reduced the source term discharged into secondary containment.

Finally, containment pressure within hours of the DBA initiation would have been well below 35 psig. Therefore, a more realistic analysis would show that the dose consequences of a DBA with this opening would have been below the GDC-19 limits even without a water seal.

Based upon the preceding, this event did not pose a threat to the health and safety of the public or plant personnel.

IV. CORRECTIVE ACTIONS

1. Immediately upon discovery, the SSS directed that the CS heat exchanger vent valves be closed. Torus pressure was restored.

2. The event was put in the Night Orders immediately following the event to ensure oncoming shifts were made aware of the event, requiring a standdown for all operating shifts on the first day they covered shift to review the tagout procedure, setting the expectation that the SSS be used infrequently as an independent verifier on tagouts to ensure a truly independent review is done and to require copies of plant impacts be attached to all tagouts.

IV. CORRECTIVE ACTIONS (Cont'd)

3. Operations management met with each shift to discuss and emphasize expectations regarding tagout development, review, and approval.

4. The Operations Manager also met with each individual to emphasize his expectations regarding the responsibility of holding an operator license.

5. Individual accountability has been appropriately addressed in accordance with NMPC policies.

6. The SSS involved in the error issued a memo identifying the mistakes made during the event and highlighted to other SSSs their responsibility in the tagout process.

7. The Training Department will incorporate this event into a lesson plan on Containment Spray and will include the lesson plan in the next cycle of training by September 18, 1998.

8. The Operations and Training Departments will perform a task analysis of preparing and approving a tagout, and compare those to the current On-the-Job Training (OJT)/Task Performance Evaluation (TPE) standards. Then training will be completed, by December 31, 1998.

V. ADDITIONAL INFORMATION

A. Failed components: none.

B. Previous similar events: During the corrective action review for prior events, a December 20, 1994 event was identified which was similar to this event. That event was not reported in accordance with 10CFR50.72 or 10CFR50.73 at the time. NMPC has determined that the event should have been reported and will, therefore, submit an LER describing that event by October 2, 1998.

Based upon the recent NMPC review of the 1994 event, NMPC concluded that the corrective actions were ineffective in preventing this event because the 1994 event was not viewed as significant. Consequently, the corrective actions were short-term in nature. The actions failed to address accountability and the briefing on the event was not of substance for long-term retention.

V. ADDITIONAL INFORMATION (Cont'd)

C. Identification of components referred to in this LER:

COMPONENT	IEEE 803 FUNCTION	IEEE 805 SYSTEM ID
Containment Spray System	N/A	BO
Vent Valves	VTV	BO
Valve 80-11	V	BO