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FACIL:50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe 05000220
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RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 94-006-00:on 941027,discovered that Unit 1 operating outside of TS requirement for reactor bldg integrity.Caused by personnel error.Emergency temporary mod processed to closed drain lines.W/941128 ltr.

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NIAGARA MOHAWK

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November 28, 1994
NMP1L 0880

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

RE: Docket No. 50-220
LER 94-06

Gentlemen:

In accordance with 10CFR50.73 (a)(2)(i)(B) and 10CFR50.73 (a)(2)(v)(C), we are submitting LER 94-06, "Violation of Technical Specification Requirements for Reactor Building Integrity Because of Inadequate Original Design."

Very truly yours,

RB Abbott

R. B. Abbott
Plant Manager - NMP1

RBA/AFZ/lmc
Attachment

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

IE22

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 1	0 5 0 0 0 2 2 0	1 OF 0 5

TITLE (4) Violation of Technical Specification Requirements for Reactor Building Integrity Because of Inadequate Original Design

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
1 0	2 7	9 4	9 4	— 0 0 6	— 0 0	1 1	2 8	9 4	N/A	0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)					
N		20.402(b)		20.405(c)		50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	0 7 6	20.405(a)(1)(i)		50.36(c)(1)	X	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
	AREA CODE
Mr. Kenneth J. Sweet, Manager Technical Support NMP1	3 1 5 — 3 4 9 — 2 4 6 2

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
X YES (If yes, complete EXPECTED SUBMISSION DATE)	NO		0 1	1 6	9 5

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

On October 27, 1994 at 10:30 hours, with the mode switch in "RUN" and reactor power at approximately 76 percent thermal, it was discovered that Nine Mile Point Unit 1 (NMP1) was operating outside of a Technical Specification requirement for Reactor Building integrity. Specifically, it was assumed that the Technical Specification limitation on air in-leakage may have been exceeded as a result of discovering that the cover plates were missing from two (2) floor drains in the cask washdown area of the refueling floor in the Reactor Building.

The cause of this event was determined to be an inadequate original design in that maintaining secondary containment integrity was not identified as one of the drain system functions. A contributing cause was a personnel error which involved a modification, without adequate review, changing the cover plates to grates.

Corrective actions for this event include insertion of mechanical plugs in the drain lines, reinstallation of floor drain covers, review of other Reactor Building drain lines, and revision of appropriate procedures. This report will be supplemented upon completion of further Engineering analysis to establish more definitive results regarding potential radiological impact.

I. DESCRIPTION OF EVENT

On October 27, 1994 at 10:30 hours, with the mode switch in "RUN" and reactor power at approximately 76 percent thermal, it was discovered that Nine Mile Point Unit 1 (NMP1) was operating outside of a Technical Specification requirement for Reactor Building integrity. Specifically, it was assumed that the Technical Specification limitation on air in-leakage may have been exceeded as a result of discovering that the cover plates were missing from two (2) floor drains in the cask washdown area of the refueling floor in the Reactor Building. These floor drains are connected to a four (4) inch line which penetrates the Reactor Building and terminates in the Waste Disposal Building.

This deviation was identified during an evaluation of a Deviation/Event Report (DER) involving contaminated floor drains. Upon discovery, it was assumed that Reactor Building in-leakage would exceed the Technical Specification acceptance limit with the cover plates removed, and therefore, Technical Specification 3.4.1 was entered which requires restoring secondary containment leakage rate within four hours or initiating a normal, orderly shutdown of the unit.

Mechanical plugs were installed in the drains in accordance with the Temporary Modification process and Technical Specification 3.4.1 was exited at 12:32 hours on October 27, 1994. DER 1-94-2186 was issued to document this change and future actions to correct this condition. The Engineering Department issued a design change (DCR N1-94-00126309 including Applicability Review AR03054) on October 28, 1994, which made the installation of the mechanical plugs a permanent change.

The Engineering Department completed an Engineering operability supporting analysis checklist on November 10, 1994, which determined that the Emergency Ventilation System may not have been able to maintain the required Reactor Building negative pressure differential of 0.25 inches of water with the cover plates removed. The Engineering review of design and maintenance documents and photographic evidence did not provide conclusive information on the status of the cover plates during the latest Reactor Building leak test. The investigation of this event also indicated that the floor drain covers may have been missing since 1982. On the basis of Engineering's review, a conservative decision was made that the secondary containment leakage rate may have exceeded the Limiting Condition of Operation during this period, which represented a reportable violation of Technical Specification requirements for Reactor Building integrity.

No equipment failure resulted from this event, nor did any failed component or system contribute to this event.

II. CAUSE OF EVENT

The cause of this event was determined to be an inadequate original design in that maintaining secondary containment integrity was not identified as one of the drain system functions. A contributing cause was a personnel error which involved a modification without adequate review, changing the cover plates to grates.

The investigation of this event involved a thorough review of design documentation and discussions with numerous personnel. Experienced Operations, Maintenance, and Engineering personnel believe that the cover plates were removed several years ago. The investigation of this event also determined that the drain lines have been covered or blocked at various times to control local contamination. It is possible that a similar condition could have existed at various times since the early 1980s.

The removable covers for the subject drains are shown on drawing C-18496-C, "Reactor Building Floor Drainage Piping Plan at El 340." There is no indication that the cover plates contain any cautionary label or marking, nor are there screws, bolts, clamps, or any other type of hold-down device. No design documents identify the cover plates as necessary to maintain secondary containment. The covered configuration of these drain lines has never been captured in appropriate plant procedures.

Inadequate design reviews of modifications in 1975 for the Cask Drop Protection System and 1985 for Radwaste piping and tank modifications failed to identify that the drain covers were necessary for secondary containment.

Contributing to this event was a modification without adequate technical review changing the covers to grates. Operators recall that the plates were in place in the late seventies, and one individual indicated the grates have been on the drains since 1982.

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 Specification," and 10CFR50.73(a)(v)(C), "any event or condition that alone would have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material."

Limitations on Reactor Building in-leakage are established by Technical Specification 3.4.1 to ensure any radioactive leakage from the containment, following a Design Basis Accident, is processed through the Reactor Building Emergency Ventilation System before release. The capability of secondary containment to maintain in-leakage within allowable limits is tested once during each operating cycle utilizing the Emergency Ventilation System to

III. ANALYSIS OF EVENT (cont.)

demonstrate negative pressure in the building relative to external static pressure (Technical Specification Surveillance Requirement 4.4.1). The results of the last Reactor Building leak test in April 1993 were just within the acceptance limit. Since no conclusive information regarding the status of cover plates or other means of drain line blockage during this test could be located, it was conservatively assumed that the test was performed with the drain lines blocked. Such an assumption would mean that drain line cover removal and/or unblocking the drain lines could cause the Reactor Building in-leakage to exceed the Technical Specification limit.

The approximately twelve (12) square inch cross section of the drain line in-leakage path represents a marginal increase in the total potential Reactor Building in-leakage area. The Reactor Building is not an air-tight structure. Among the potential leakage paths are pipe and cable penetrations, building seams, and door frames. For comparison, a sixteenth inch gap in a door frame represents about the same cross sectional leakage area as the uncovered drain line. The preliminary Engineering evaluation indicates that the drain line in-leakage path could have reduced Reactor Building differential pressure by about 3%, and, while it is possible that the in-leakage acceptance limit could have been exceeded because of the missing cover plates, it is unlikely that this would have significantly degraded the performance of the Emergency Ventilation System or resulted in significant increases in post-accident dose levels. Furthermore, the drain line potential leakage path terminates in the Waste Disposal Building, which also has a ventilation system with a filtered exhaust discharging to the main stack, thereby limiting the potential for radioactive releases from this source. If, as seems likely, the secondary containment integrity leak test was performed satisfactorily with the covers missing, then all post-accident releases and doses would have been within the design analysis. This event did not adversely affect any other safety system nor the operators' ability to maintain safe reactor plant conditions.

This report will be supplemented upon completion of further Engineering analysis to establish more definitive results regarding potential radiological impact.

IV. CORRECTIVE ACTIONS

The following corrective actions have been implemented:

1. An emergency temporary modification was processed to close the drain lines to assure secondary containment integrity, and a subsequent Engineering evaluation was performed to make this change permanent.

IV. CORRECTIVE ACTIONS (cont.)

2. Cover plates, including a caution label prohibiting removal without notifying the Shift Supervisor, were installed on the drain lines. Also, administrative controls (hold-out tags) have been placed on the mechanical plugs to prevent removal when secondary containment is required.

3. The system lineup for Reactor Building ventilation was changed to verify the drains are covered or plugged. A precaution was also added to the operating procedure describing the covered drains necessary for secondary containment integrity.

The following additional actions will be taken:

1. The Engineering Department will review drawings of Reactor Building drain lines to assure that there are no similar secondary containment leakage paths. This action will be completed by December 31, 1994.

2. A note will be added to appropriate Engineering drawings indicating that drain closure is needed to maintain secondary containment integrity. This action will be completed by December 31, 1994.

V. ADDITIONAL INFORMATION

A. Failed components: None

B. Previous similar events:

LER 92-06, "Violation of Technical Specifications and Plant Operated Outside Design Basis due to Ineffective Change Management and Personnel Error," involved Reactor Building integrity but the condition and causal factors were different, and the corrective actions would not have prevented this event.

C. Identification of components referred to in this LER:

COMPONENT	IEEE 803 EIIS FUNCTION	IEEE 805 SYSTEM ID
Reactor Building Emergency Ventilation System	N/A	BN
Reactor Building	N/A	NG
Floor Drain	DRN	N/A