

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9904270191 DOC.DATE: 99/04/19 NOTARIZED: NO DOCKET #
FACIL:50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
AUTH.NAME AUTHOR AFFILIATION
DEAN,R. Niagara Mohawk Power Corp.
PALEOLOGOS,N. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 99-004-00:on 990318,NMP2 SW intake de-icing heater control circuits do not meet FP program requirements. C
Caused by inadequate design review.Implemented procedures to A
ensure conformance.With 990419 ltr. T

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 8 E
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc. E

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April 19, 1999
NMP2L 1863

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

RE: Docket No. 50-410
LER 99-04

Gentlemen:

In accordance with 10CFR50.73(a)(2)(ii)(B), we are submitting LER 99-04, "NMP2 Service Water Intake De-Icing Heater Control Circuits do not Meet Fire Protection Program Requirements."

Very truly yours,

A handwritten signature in black ink that reads "Nick Paleologos".

Nick Paleologos
Plant Manager - NMP2

NCP/KLL/kap
Attachment

xc: Mr. H. J. Miller, Regional Administrator, Region I
Mr. G. K. Hunegs, Senior Resident Inspector
Records Management

9904270191 990419
PDR ADDCK 05000410
S PDR



LICENSEE EVENT REPORT (LER)

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 20535, AND TO THE PAPERWORK REDUCTION PROJECT (0150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1)

DOCKET NUMBER (2)

PAGE (3)

Nine Mile Point Unit 2

05000410

01 OF 04

TITLE (4)

NMP2 Service Water Intake De-Icing Heater Control Circuits do not Meet Fire Protection Program Requirements

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)

03

18

99

99

04

00

04

19

99

N/A

N/A

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)

100%

20.2201(b)

20.2203(a)(1)

20.2203(a)(2)(i)

20.2203(a)(2)(ii)

20.2203(a)(2)(iii)

20.2203(a)(2)(iv)

20.2203(a)(2)(v)

20.2203(a)(3)(i)

20.2203(a)(3)(ii)

20.2203(a)(4)

50.36(c)(1)

50.36(c)(2)

50.73(a)(2)(i)

50.73(a)(2)(ii)

50.73(a)(2)(iii)

50.73(a)(2)(iv)

50.73(a)(2)(v)

50.73(a)(2)(vii)

50.73(a)(2)(viii)

50.73(a)(2)(x)

73.71

OTHER

(Specify in Abstract below and in Text, NRC Form 366A)

LICENSEE CONTACT FOR THIS LER (12)

NAME

Mr. Ray Dean

TELEPHONE NUMBER

(315) 349-4240

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPX

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)

NO

EXPECTED SUBMISSION DATE (15)

MONTH

DAY

YEAR

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

On March 18, 1999, with Nine Mile Point Unit 2 in full power operations, engineering personnel determined that the service water system intake de-icing heater control circuits were not included in Updated Final Safety Analysis Report, Appendix 9B, Table 9B.8-3, Appendix R Control Room/Relay Room Fire Analysis. Further review of the design confirmed that a control room/relay room fire could render the intake de-icing heaters inoperable.

The root cause was that the architect/engineering firm design staff did not identify the control circuit isolation requirements for service water operation during a control room/relay room fire.

Corrective actions include establishing a fire watch patrol and implementing a design change. Niagara Mohawk Power Corporation is evaluating additional preventive actions to be described in a supplement to LER 99-01.



LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 30.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-330), 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)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Nine Mile Point Unit 2	05000410	99	04	00	02 OF 04

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

I. DESCRIPTION OF EVENT

The Nine Mile Point Unit 2 (NMP2) service water intake structure openings are equipped with vertical bar racks which prevent large debris from entering the intake system. The bar racks are electrically heated to eliminate the potential for frazil ice adhesion. Frazil ice formation can occur when the intake water temperature drops to near freezing. Therefore, in accordance with Technical Specifications Section 3.7.1.1, the intake de-icing heaters are required to be operable whenever the intake tunnel water temperature is below 39 degrees F.

On March 18, 1999, with NMP2 in full power operations, engineering personnel were performing a review of the Updated Final Safety Analysis Report (UFSAR), Appendix 9B, Table 9B.8-3, Appendix R Control Room/Relay Room Fire Analysis. The engineers determined that the service water system intake de-icing heater control circuits were not included in the analysis. Engineers initiated this review as part of the corrective actions for LER 99-01, "NMP2 Outside the Design Basis Due to Safe Shutdown Service Water Pump Bay Unit Coolers Being Out-of-Service." After further review, the engineers determined that a control room/relay room fire which renders the service water intake de-icing heaters inoperable, coincident with service water intake temperatures that approach freezing conditions, could lead to a complete loss of service water. This condition has existed from the initial operation of NMP2.

II. CAUSE OF EVENT

The root cause of this event was an inadequate design review by the design authority, the architect/engineering firm design staff (Stone & Webster Engineering Corporation), prior to startup for initial commercial operation.

Stone & Webster Engineering Corporation was responsible for identifying and implementing the Fire Protection Program design requirements but failed to identify the plant requirements for service water operation during a control room/relay room fire.

III. ANALYSIS OF EVENT

As a result of the deficiency of the intake structure de-icing heater circuits, service water flow could have been obstructed due to ice adhesion to the intake structure during a control room/relay room fire event. Accordingly, Niagara Mohawk Power Corporation (NMPC) is reporting this event in accordance with 10CFR50.73(a)(2)(ii), "Any event or condition that resulted in the condition of the nuclear power plant,...being:...(B) In a condition that was outside the design basis of the plant."

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATIONESTIMATED 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.

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Nine Mile Point Unit 2	05000410	99	04	00	03 OF 04	

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

III. ANALYSIS OF EVENT (Cont'd)

NMPC Engineering Services performed an analysis to determine the significance of the loss of the intake de-icing heaters. The analysis determined that core damage would not occur unless an initiating event and all of the following conditions existed simultaneously:

1. A fire in control room/relay room control panel P601.
2. Lake water temperature below 38 degrees F, which would cause inoperability of service water (temperature is not critical until it approaches 32 degrees F, which is approximately 10 days per year exposure).
3. Service water intake freezing solid before recovery of the intake de-icing heaters.
4. The failure of other equipment that would result in the failure of containment venting and injection.

The analysis concluded that the core damage frequency associated with the loss of the intake de-icing heaters would be 1.38E-07 per year. The NMP2 baseline core damage frequency is 5.1E-05 per year. The predicted contribution of the intake de-icing heaters to the baseline core damage frequency is 0.27%. Based on these results and the associated conservatism, NMPC has determined that the intake de-icing heater control circuit deficiency was non-significant and this event did not adversely affect the health and safety of the public or plant operators.

IV. CORRECTIVE ACTIONS

1. NMPC procedures currently require and are implemented to ensure that all design changes are in conformance with the current licensing basis and design.
2. NMPC has established a fire watch patrol for the control room/relay room fire area until the design deficiency is corrected.
3. NMP2 will implement a design change to upgrade the intake de-icing heater control circuits to fire protection program safe shutdown criteria by November 30, 1999.
4. In accordance with corrective action #3 of LER 99-01, NMPC will perform an evaluation to identify specific additional preventive actions. Additional information concerning the scope and scheduling of the above preventive actions will be reported in the supplement to LER 99-01.



LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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-330), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20535, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Nine Mile Point Unit 2	05000410	99	04	00		04 OF 04

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

V. ADDITIONAL INFORMATION

- A. Failed components: none.
- B. Previous similar events:

NMP2 LER 96-15 (and Supplement 1), "Appendix R Fire Induced Hot Shorts in Remote Shutdown System Valves," reported the potential susceptibility of NMP2 Remote Shutdown System valves to fire induced "hot shorts." NMPC reported that the corrective actions for that event included administrative controls and procedure changes, a review of safe shutdown valves for susceptibility to fire induced "hot shorts," and training. LER 96-15 specifically addressed the "hot short" vulnerability of motor operated valves and NMPC's inadequate review of NRC Information Notice 92-18. Therefore, the corrective actions for LER 96-15 would not have prevented this event.

NMP2 LER 97-02 (and Supplements 1-3), "Potential Inoperability of Emergency Diesel Generator Service Water Cooling Outlet Valves During a Control Room Fire," reported the potential inoperability of emergency diesel generator service water cooling outlet valves during a control room fire. In Supplements 1-3 of LER 97-02, NMPC identified other Fire Protection Program issues. NMPC reported that the corrective actions for the event included modifications, revising an operating procedure, and performing a confirmatory evaluation of plant design to verify operability of systems required to achieve safe shutdown during a control room exposure fire.

Duke Engineering & Services performed the confirmatory evaluation associated with the corrective actions of LER 97-02. The review identified configuration and procedure deficiencies. The final report from Duke Engineering & Services recommended a comprehensive review of the equipment required to achieve safe shutdown. Had NMPC acted on this recommendation promptly, then the design deficiency could have been identified during this review. Therefore, the event currently reported could have been identified sooner.

- C. Identification of components referred to in this LER:

COMPONENT	IEEE 803 FUNCTION	IEEE 805 SYSTEM ID
Intake De-Icing Heater	EHTR	BI



AGENCY CORRESPONDENCE BACK-END REVIEW CHECKLIST

(NA)

- Y/N () Is this letter to be signed under Oath and Affirmation?
- Y/N () Date is appropriate and consistent with headers on all pages.
- Y/N () Addressee is correct (per NIP-IRG-01 or NIP-IRG-02) and consistent with salutation.
- Y/N () Signatory proper per NIP-IRG-01 or NIP-IRG-02.
- Y/N () "Subject" is correct (Docket No. 50-220 (Unit 1) or 50-410 (Unit 2), Op. License No. DPR-63 (Unit 1) or NPF-69 (Unit 2) on all required pages.
- Y/N () References/attachments are correctly referenced in the body of the letter. Regulatory agency review status of such documents (e.g. approved/not approved) is clear. *DID NOT SEE VALIDATION PACKAGE.*
- Y/N () All acronyms (NMPC, TS, OL, etc.) Are defined prior to use. *← NMPC NOT SPELLED OUT IN LETTER*
- Y/N () There are no Typos.
- Y/N () Appropriate persons listed on "cc:" list. State listed on any amendment correspondence.
- Y/N () NCTS-items identified and concurred. *SEE COMMENTS.*
- Y/N (X) All proprietary issues addressed.
 - Correct title(s)/date(s) on affidavit
 - Identified in cover letter
 - Releasable version developed (i.e. non proprietary revision)
 - Copyright release (see handbook)
- Y/N (X) Have revision bars been appropriately placed?
- Y/N () Page numbers correct.
- Y/N (X) Energy Industry Identification System (EIIIS) information verified (LERs).
- Y/N () 50.73 reporting criteria verified.
- Y/N () Regulation listed/referenced properly in cover page and attachments.
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BACK-END REVIEW COMPLETED BY: JA Albin 4/19/99



ATTACHMENT 1: NRC CORRESPONDENCE APPROVAL FORM



Document: LER 99-04

Applicability: Unit 1 Unit 2 Site Due Date: 4/19/99
 References: DER 2-1999-0294 NCTS _____ Other _____

Prepared: Keeno Lampman [Signature] 4/12/99
 Print Signature Date

Developmental Review

	Name	Signature
<input checked="" type="checkbox"/> Licensing	<u>Fred Ringwald</u>	<u>[Signature]</u>
<input checked="" type="checkbox"/> Engineering	<u>DAVE SANDWICK</u> <u>A. RATU</u> <u>LOD KACHNIK</u>	<u>[Signature]</u> <i>approved per telecon 4/12/99</i> <i>approved per telecon 4/12/99</i> <i>Len Kachnik 4/14/99</i>
<input type="checkbox"/> Generation	<u>Ted Kulczycky</u>	<u>[Signature]</u> <i>4/14/99</i>
<input type="checkbox"/> Other	_____	_____

Technical/Safety Reviews

Technical Review: N/R Tech Spec 6.5.2 Verification Other _____
 Designees: _____

SORC: N/R Meeting No.: _____
 SRAB: N/R Meeting No.: _____

Final Review

<input checked="" type="checkbox"/> Engineering Manager	<u>Ray Dean</u>	<u>[Signature]</u>
<input checked="" type="checkbox"/> Generation: Operations Manager	<u>DON BOSWIC</u>	<u>[Signature]</u> <i>at comment comments addressed and incorporated 4/14/99</i>
<input checked="" type="checkbox"/> System Attorney	<u>GARY WILSON</u>	<u>[Signature]</u> <i>approved - comment incorporated by telecon 4/12/99</i>
<input checked="" type="checkbox"/> Licensing Manager	<u>MS LEONARD</u>	<u>[Signature]</u>
<input type="checkbox"/> Plant Manager	_____	_____
<input checked="" type="checkbox"/> Other VP Nuclear Engineering	<u>R. B. ABBOTT</u>	<u>[Signature]</u> <i>4/15/99 - The Revised</i>
<input checked="" type="checkbox"/> Proofreader	<u>Ali Abbasi</u>	<u>[Signature]</u> <i>per Breakend Review 4/15/99 / 3exch. version</i>

Disposition

FSAR Change: N/R LDCR # _____
 NCTS Commitments: N/R NCTS #'s 504287
 Post Correspondence N/R Completed per NLAP-RPR-01 on _____ (date)



AGENCY CORRESPONDENCE BACK-END REVIEW CHECKLIST

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BACK-END REVIEW COMPLETED BY: *JA Albers 4/19/99*



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