

CATEGORY

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ACCESSION NBR: 9909070135      DOC. DATE: 99/08/30      NOTARIZED: NO      DOCKET #  
 FACIL: 50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha      05000410  
 AUTH. NAME:      AUTHOR AFFILIATION  
 FOX, F.      Niagara Mohawk Power Corp.  
 PALEOLOGOS, N.      Niagara Mohawk Power Corp.  
 RECIP. NAME      RECIPIENT AFFILIATION

SUBJECT: LER 99-013-00: on 990729, discovered that four relays in primary containment isolation circuit were not being properly tested. Caused by inadequate test procedure. Surveillance procedures were revised. With 990830 ltr.

DISTRIBUTION CODE: IE22T      COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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# Niagara Mohawk

August 30, 1999  
NMP2L 1892

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

RE: Docket No. 50-410  
LER 99-13

Gentlemen:

In accordance with 10 CFR 50.73(a)(2)(i), we are submitting Licensee Event Report 99-13,  
"Relays in Multiple Systems Were Not Correctly Tested as Required by Technical Specifications."

Very truly yours,



Nick Paleologos  
Plant Manager - NMP2

NCP/CES/jb  
Attachment

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

9909070135 990830  
PDR ADOCK 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 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1) Nine Mile Point Unit 2	DOCKET NUMBER (2) 05000410	PAGE (3) 01 OF 04
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TITLE (4)  
Relays in Multiple Systems Were Not Correctly Tested as Required by Technical Specifications

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)	
07	29	99	99	013	00	08	30	99			

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%	<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.36(c)(2)	<input checked="" type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> 50.73(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 50.73(a)(2)(viii) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 73.71 <input type="checkbox"/> OTHER <i>(Specify in Abstract below and in Text, NRC Form 366A)</i>
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LICENSEE CONTACT FOR THIS LER (12)

NAME Frank Fox, Manager, Maintenance	TELEPHONE NUMBER (315) 349-7330
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPD	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPD

SUPPLEMENTAL REPORT EXPECTED (14)	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO				

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

On July 29, 1999, while Nine Mile Point Unit 2 was at 100 percent power, Niagara Mohawk Power Corporation (NMPC) identified 4 relays in the primary containment isolation circuit that were not being tested as required by Technical Specifications. As a result, NMPC performed additional reviews of channel functional test procedures and identified an additional 8 relays in the high drywell pressure isolation and the main steam line high radiation isolation circuits that were not being tested as required by Technical Specifications. Operation of the relays was not properly verified during quarterly channel functional tests.

NMPC determined that the cause of the incomplete testing of the 12 relays was due to inaccurate established test boundaries in the test procedures.

Corrective actions include: revising the surveillance procedures, testing the 12 relays, training procedure writers and technical reviewers on the interpretation of the definition of channel functional test, and reviewing other channel functional test procedures for similar errors.



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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Nine Mile Point Unit 2	05000410	99	13	00	02 OF 04

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

**I. DESCRIPTION OF EVENT**

On July 29, 1999, while Nine Mile Point Unit 2 was at 100 percent power, Niagara Mohawk Power Corporation (NMPC) identified 4 relays in the primary containment isolation circuit that were not being tested as required by Technical Specifications. NMPC identified this issue during the Improved Technical Specifications procedure reviews. Technical Specification Surveillance Requirement 4.3.2.1-1.1.a.2 for the 4 relays requires a channel check, a channel functional test, and a channel calibration on a shiftly, quarterly and refueling interval, respectively. The relays were not being channel functional tested quarterly. The circuit design does not include the use of any relay contacts to provide visible or audible indication to verify proper relay operation.

NMPC reviewed additional Technical Specification surveillance procedures with similar circuit characteristics where contacts were not used to provide a visible or audible indication. From this review, NMPC identified an additional 8 relays in the high drywell pressure isolation and the main steam line high radiation isolation circuits, which were not properly tested as required by Technical Specification Surveillance Requirements 4.3.2.1-1.1.b and 4.3.2.1-1.1.c.1, respectively. The corresponding surveillance procedures were revised and the following relays were tested satisfactory:

- Primary Containment Isolation Relay B22H-K143A
- Primary Containment Isolation Relay B22H-K143B
- Primary Containment Isolation Relay B22H-K200C
- Primary Containment Isolation Relay B22H-K200D
- High Drywell Pressure Isolation Relay C72A-K45A
- High Drywell Pressure Isolation Relay C72A-K45B
- High Drywell Pressure Isolation Relay C72A-K72C
- High Drywell Pressure Isolation Relay C72A-K72D
- High Drywell Pressure Isolation Relay C72A-K74C
- High Drywell Pressure Isolation Relay C72A-K74D
- Main Steam Line High Radiation Isolation Relay 3A-2ISCN01
- Main Steam Line High Radiation Isolation Relay 3A-2ISCN02

**II. CAUSE OF EVENT**

The cause of this event has been determined to be the inaccurate establishment of the test boundaries in the test procedures. The initial procedure writers did not perform an adequate review to ensure that all the appropriate relay contacts were properly verified to operate during quarterly channel functional tests. A lack of understanding of the proper interpretation of the test boundaries for a complete channel functional test contributed to these errors.





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		99	- 13	- 00	

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

**III. ANALYSIS OF EVENT**

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

The primary containment isolation relays provide Containment Isolation Groups 6 and 7 signals which isolate the reactor water cleanup system inboard and outboard isolation valves on a low reactor water level signal. The high drywell pressure isolation relays provide Containment Isolation Groups 3, 4, 8, and 9 signals which isolate the residual heat removal inboard and outboard containment isolation valves on high drywell pressure signal. The main steam line high radiation relays isolate and trip the condenser air removal pumps on a high radiation signal. The relays were not properly channel functional tested quarterly, but the relays were tested on a refueling interval.

When the 12 relays were tested, all contacts operated correctly; therefore, all actions that would have been required would have occurred. Since the 12 relays were demonstrated to be functional, this event had no adverse consequences on the health and safety of the public or plant personnel.

**IV. CORRECTIVE ACTIONS**

- Maintenance personnel made permanent changes to two surveillance procedures, and for the third surveillance procedure a one-time change was made then the 12 relays were satisfactorily tested.
- Permanent changes to the third surveillance procedure will be completed by October 15, 1999.
- Maintenance personnel will revise Procedure Writers Manual PWM-PRO-0102, "General Guidelines," to include clarification and guidance on the definition of a channel functional test by September 30, 1999.
- A memorandum on this event was distributed to all instrument and controls personnel and briefings on this event with all instrument and controls personnel will be held by October 1, 1999. Also, procedure writers and technical reviewers will be provided with additional guidance and clarification on the definition of a channel functional test by March 31, 2000.
- Maintenance personnel will review the remaining channel functional test procedures to verify that relays are being tested properly. The maintenance personnel performing these reviews will be briefed on the proper interpretation of the test boundaries of a channel functional test prior to reviewing the procedures. After the extent of the condition is determined, NMPC will review the above root cause and corrective actions to verify they are appropriate. These actions will be completed by March 31, 2000.



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Nine Mile Point Unit 2	05000410	99	13	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:

- Nine Mile Point Unit 2 has had a number of instances where inadequate procedure preparation or review caused either missed or inadequately performed surveillance tests. This event and those discussed in Licensee Event Report 96-01, 96-02, 96-08, 97-01, 97-07, 97-09, 97-11, 97-12, 97-14, 98-04, 98-07, 98-11, 98-12, 98-15, 98-20, 98-26, and 99-06 involved problems with past practices in writing and reviewing procedures. Licensee Event Report 99-06 documented long-term corrective actions, which have not been fully implemented.
- Licensee Event Report 98-24 documented that the main steam line high radiation isolation relays were not being logic system functional tested as required, due to a misinterpretation of Technical Specification Table 3.3.2-1 Note (e). The channel functional test procedure was reviewed and determined to be adequate. However, as the result of the lack of understanding of the proper interpretation of the test boundaries for a channel functional test, the two main steam line high radiation isolation relays being reported in this Licensee Event Report were not identified.

C. Identification of components referred to in this Licensee Event Report:

Components	IEEE 803A Function	IEEE 805 System ID
Relay	RLY	BO, CE, & SH
Reactor Water Cleanup Inboard Isolation Valve	ISV	CE
Reactor Water Cleanup Outboard Isolation Valve	ISV	CE
Residual Heat Removal Inboard Isolation Valve	ISV	BO
Residual Heat Removal Outboard Isolation Valve	ISV	BO
Condenser Air Removal Pumps	P	SH
Reactor Water Cleanup System	NA	CE
Residual Heat Removal System	NA	BO
Condenser System	NA	SH

