

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9903250191 DOC.DATE: 99/03/15 NOTARIZED: NO DOCKET #
FACIL:50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
.AUTH.NAME AUTHOR AFFILIATION
WARD,K.D. Niagara Mohawk Power Corp.
PALEOLOGOS,N. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 98-028-01:on 981202,inadvertent isolation if RCIC & SDC
due to spurious trip of temp switch was noted.Caused by
component aging.Replaced trip unit & TS action statements
were exited.With 990315 ltr.

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TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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	NRR/DRPM/PECB	1 1	NRR/DSSA/SPLB	1 1
	RES/DET/EIB	1 1	RGN1 FILE 01	1 1
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Niagara Mohawk

March 15, 1999
NMP2L 1854

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

RE: Docket No. 50-410
LER 98-28, Supplement 1

Gentlemen:

In accordance with 10CFR50.73(a)(2)(iv), we are submitting LER 98-28, Supplement 1, "Inadvertent Isolation of RCIC and SDC due to Spurious Trip of a Temperature Switch." This supplement includes information from laboratory analysis which was used to determine the cause of the spurious failure of the temperature switch.

Very truly yours,



Nick Paleologos
Plant Manager - NMP2

NCP/GJG/sc
Attachment

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

9903250191 990315
PDR ADCK 05000410
S PDR

IE22/1



1
2

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)
Inadvertent Isolation of RCIC and SDC Due to Spurious Trip of a Temperature Switch

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)
12	02	98	98	028	01	03	15	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)
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POWER LEVEL (10) 51%	<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 type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(iii) <input checked="" 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 <small>Specify in Abstract below and in Text, NRC Form 366A</small>
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LICENSEE CONTACT FOR THIS LER (12)

NAME K.D. Ward - Technical Support Manager	TELEPHONE NUMBER (315) 349-1043
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)										
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPDK		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPDK
X	BO/BN	TS	R281	Y						

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)

While ascending in power from a forced outage, on December 2, 1998, Nine Mile Point Unit 2 (NMP2) experienced an isolation of the Reactor Core Isolation Cooling (RCIC) system and Shutdown Cooling (SDC) received an isolation signal. At the time, a Reactor Operator (RO) was reading the temperature in the control room from temperature switch 2RHS*TS82A at the trip unit (E31-N639A) on Control Room Panel 2CEC*PNL632.

Based upon Niagara Mohawk Power Corporation's (NMP's) evaluation of the failed trip unit, including input by an independent laboratory, the most likely cause of the spurious failure of the trip unit is component aging. Specifically, connectors located on the trip unit had become deformed due to the removing and reinserting of the trip unit during previous maintenance activities.

The trip unit was replaced and the Technical Specification (TS) action statements were exited. Instrument and Control department personnel have been briefed and work documents have been revised to require connector inspection. Initial and continuing training for affected personnel will be revised to include electrical connection inspection techniques.

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 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	LER NUMBER (6)			PAGE (3) 02 OF 04
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		98	28	01	

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

I. DESCRIPTION OF EVENT

While ascending in power from a forced outage, on December 2, 1998, Nine Mile Point 2 (NMP2) experienced an isolation of the Reactor Core Isolation Cooling (RCIC) system and Shutdown Cooling (SDC) received an isolation signal. At the time, the plant was at approximately 51 percent power.

When the isolation occurred, a Reactor Operator (RO) was taking normal log readings on Control Room Panel 2CEC*PNL632. Panel 2CEC*PNL632 contains a bank of trip units with inputs from thermocouples in various locations in NMP2. The trip units have a toggle switch on the front panel. The toggle switch has a "Read" position to obtain the temperature reading, and a "Set" position to vary the alarm setpoint. A spring return feature returns the switch to a normal mid-position after the operator releases the switch following a "Read" or "Set" operation.

The RO obtained a temperature reading by placing the switch in the "Read" position. The RO then released the switch to transfer the reading to the rounds log. When he released the switch, the RO heard an annunciator. He then informed the "at the controls" RO that he was obtaining a reading when the annunciator alarmed. The RO then placed the toggle switch back into "READ" and the alarm cleared.

II. CAUSE OF EVENT

Based upon Niagara Mohawk Power Corporation's (NMPC's) evaluation of the failed trip unit, including evaluation by an independent laboratory, the most likely cause of the spurious failure of the trip unit is component aging. Specifically, connectors located on the trip unit had become deformed due to the removing and reinserting of the trip unit during previous maintenance activities. When the operator toggled the switch to "Read," the connection likely caused an open circuit which caused the spurious actuation.

III. ANALYSIS OF EVENT

This event is reportable in accordance with 10CFR50.73(a)(2)(iv), "Any event or condition that resulted in a manual or automatic actuation of an engineered safety feature (ESF), including the reactor protection system (RPS)."

At the time of this event, NMP2 was in power operation, and SDC was not required. Therefore, the isolation signal for SDC had no impact on the safe operation of the plant.

The RCIC system is designed to supply makeup water to the reactor vessel when the reactor is in a hot shutdown condition and is isolated from the Main Condenser with the reactor Feedwater System not in operation. By adding low temperature makeup water to the reactor, core cooling is assured. Isolation of the RCIC system is a conservative action designed to prevent significant releases of radioactive materials from the Primary Containment to the environment in the event of a significant RCIC system steam line break. An



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TEXT CONTINUATION

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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	98	28	01	03 OF 04

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

III. ANALYSIS OF EVENT (Cont'd)

alternate method of core cooling was available from the High Pressure Core Spray System. There was no impact to the safety of the public or plant personnel as a result of the RCIC system isolation.

IV. CORRECTIVE ACTIONS

- The temperature trip unit was replaced and the isolation reset. The requisite TS action statements were then exited.
- Bench testing was performed to attempt to replicate the spurious trip. Since the bench testing could not replicate the spurious trip, the trip unit was sent to an independent laboratory for further analysis.
- Instrument and Control Department (I&C) crew briefs have been held to sensitize technicians to a) trip unit connector inspection, b) proper insertion of the trip units into the connector, and c) reassembly of the trip units.
- A step has been added to the generic work order step text for these test units to inspect the connectors.
- Training involving review of electrical connections and connection techniques, not limited to these test units, will be incorporated into the initial and continuing training programs for Electrical, I&C, Computer, Relay, Maintenance Support and RP Calibration Personnel.

V. ADDITIONAL INFORMATION

A. Failed components: Component Description: Temperature Switch
 Manufacturer: Riley Group
 Model Number: 86BPTEF-E
 Serial Number: 6703

B. Previous similar events:

LER 92-01, "Multiple Engineered Safety Feature Actuation Due to Failure of a Panalarm (Riley) Temperature Switch" reported a similar ESF actuation caused by a similar temperature switch. A corrective action from that LER was to perform a plant modification to upgrade the temperature switch. Until this event, there were no further ESF actuations caused by spurious actuation of the temperature switch. In January 1995, a similar temperature switch trip occurred which was not reportable and the switch was replaced. Based upon our review of this event, NMPC has concluded the actions taken from LER 92-01 were effective.



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FACILITY NAME (1) Nine Mile Point Unit 2	DOCKET NUMBER (2) 05000410	LER NUMBER (6)			PAGE (3) 04 OF 04
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		98	28	01	

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

V. **ADDITIONAL INFORMATION (Cont'd)**

C. Identification of components referred to in this LER:

COMPONENT	IEEE 803 FUNCTION	IEEE 805 SYSTEM ID
Temperature Switch	TS	NA
RCIC System	NA	BN
RHR System	NA	BO

