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DEGRACIA,A. Niagara Mohawk Power Corp.
MCCORMICK,M.J. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 92-015-00:on 920702,during warmup of RHR sys,plant experienced an automatic isolation of RCICS.Caused by inadequate written communication.Sys restored to normal & operating procedures revised.W/920803 ltr.

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NIAGARA MOHAWK

NINE MILE POINT—UNIT 2/P.O. BOX 63, LYCOMING, NY 13093

Martin J. McCormick Jr. PE
Plant Manager-Unit 2
Nuclear Generation

August 3, 1992
NMP87238

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

RE: Docket No. 50-410
LER 92-15

Gentlemen:

In accordance with 10CFR50.73, we hereby submit the following Licensee Event Report:

LER 92-15 Is being submitted in accordance with 10CFR50.73 (a)(2)(iv), "any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS)."

A 10CFR50.72 (b)(2)(ii) report was made at 1249 hours on July 2, 1992.

This report was completed in the format designated in NUREG-1022, Supplement 2, dated September 1985.

Very truly yours,

Martin J. McCormick Jr.
Plant Manager - NMP2

MJM/GB/lmc

ATTACHMENT

xc: Thomas T. Martin, Regional Administrator Region I
Wayne L. Schmidt, Senior Resident Inspector

Cert # P738305081

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 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.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Nine Mile Point Unit 2	0 5 0 0 0 4 1 0	1 OF 0 6

TITLE (4)

Isolation of the Reactor Core Isolation Cooling System due to a Procedural Deficiency

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
0 7	0 2	9 2	9 2	— 0 1 5	— 0 0	0 8	0 3	9 2	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)			
2	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 0 0 5	20.405(a)(1)(i)	50.36(c)(1)	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)	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
Mr. Alan DeGracia, Manager Operations NMP2	AREA CODE 3 1 5 — 3 4 9 - 7 5 3 1

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

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

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

On July 2, 1992 at 1055 hours, with the reactor mode switch in the "STARTUP" position (Operational Condition 2), reactor pressure at 935 pounds per square inch gauge (psig), reactor temperature at 530 degrees Fahrenheit, and the plant operating at approximately 5 percent rated thermal power, Nine Mile Point Unit 2 (NMP2) experienced an actuation of an Engineered Safety Feature (ESF). Specifically, during warmup of the Residual Heat Removal System (RHS) Steam Condensing piping in preparation for putting Steam Condensing in service, the plant experienced an automatic isolation of the Reactor Core Isolation Cooling System (ICS).

The root cause for this event has been determined to be inadequate written communication.

Immediate operator actions were to verify the position of the ICS isolation valves, verify that Primary Containment parameters were normal, and restore ICS to its standby condition. Additional actions included revising Operating Procedure N2-OP-31, "Residual Heat Removal System," and verification that piping water hammer had not occurred.

I. DESCRIPTION OF EVENT

On July 2, 1992 at 1055 hours, with the reactor mode switch in the "STARTUP" position (Operational Condition 2), reactor pressure at 935 pounds per square inch gauge (psig), reactor temperature at 530 degrees Fahrenheit, and the plant operating at approximately 5 percent rated thermal power, Nine Mile Point Unit 2 (NMP2) experienced an actuation of an Engineered Safety Feature (ESF). Specifically, NMP2 experienced an automatic isolation of the Reactor Core Isolation Cooling System (ICS) due to a sensed high steam flow condition.

The isolation occurred as operators were attempting to warm up the Residual Heat Removal System (RHS) Steam Condensing piping in preparation for putting RHS Steam Condensing mode in service. The ICS and the RHS share a common steam supply line that is monitored for line break. A high steam flow condition automatically isolates this line for containment isolation purposes and alarms Control Room annunciators. The Steam Condensing mode of the RHS was to be utilized for reactor pressure control while the plant's Main Condenser was isolated to support turbine work.

A licensed Reactor Operator was assigned the task of initiating RHS Steam Condensing Loop A. Operating Procedure N2-OP-31, "Residual Heat Removal System," Rev. 8, Section F.8.0, "RHR Heat Exchanger A(B) Steam Condensing Operation," was used for this evolution. Step 8.12 of this procedure required the operator to place the Heat Exchanger Pressure Controller in AUTO and set at 0 psig. This step was performed as written and the Controller Output demand was verified to be 0 (valve closed signal). This Controller adjusts the position of Heat Exchanger Pressure Control Valve 2RHS*PV21A to establish control of Heat Exchanger pressure at the desired setpoint. The intent of Step 8.12 is to keep 2RHS*PV21A shut during prewarming and draining of the steam supply piping. Over a thirty minute duration, while operators were lining up the steam piping drain paths, 2RHS*PV21A began to gradually open.

With Controller output as the only available remote (indirect) indication of valve position, the auto opening of 2RHS*PV21A was not detected by the operator. The operator then proceeded to pressurize the steam supply piping by opening Steam Supply Motor Operated Bypass Valve 2RHS*MOV80A (1 inch bypass), and then cracking open Steam Supply Motor Operated Valve 2RHS*MOV22A (8 inch line). Opening these two valves concurrently is allowed by the procedure to expedite the heatup.

With 2RHS*PV21A open, the volume of piping to be pressurized/warmed was greatly increased. Shortly after 2RHS*MOV22A was partially opened, ICS auto isolated due to High Steam Flow.

Refer to Attachment "A" (page 6) for ICS/RHS piping schematic.

II. CAUSE OF EVENT

A root cause investigation was performed utilizing Nuclear Interfacing Procedure NIP-ECA-02, "Root Cause Evaluation."

The root cause of this event was determined to be inadequate written communication. A review of Operating Procedure N2-OP-31, Section F.8.0 identified several deficiencies which, when corrected, will prevent the recurrence of this event:

1. Step 8.12 required the operator to place the Heat Exchanger Pressure Controller in AUTO and at 0 psig. In this auto position, and with the allowable instrument accuracy and the existing loop calibration, a Controller output signal was generated which drove the Pressure Control Valve open.

2. While the procedure adjusts the Controller to a setting which should result in a valve closure signal, it does not require the operator to verify either zero Controller output or local valve position indication for 2RHS*PV21A. This valve position/controller output should be verified to ensure the Heat Exchanger Pressure Control Valve is shut prior to admitting steam. Having the Controller in "Manual" with a 0 percent position demand, would prevent the valve from drifting open.

3. The original draft of N2-OP-31 had the operator wait until after the piping was warmed/pressurized (via 2RHS*MOV80A) prior to opening 2RHS*MOV22A. The procedure was later changed (Revision 6, August 1990) to allow both 2RHS*MOV22A (8 inch line) and 2RHS*MOV80A (1 inch line) to be opened concurrently during initial pressurization. Although this method (using both valves) of pressurization had previously been performed without incident, procedure step 8.15 lacked adequate guidance/precautions to preclude this high steam flow event from occurring.

III. ANALYSIS OF EVENT

This event is considered reportable under 10CFR50.73 (a)(2)(iv), "any event or condition that resulted in manual or automatic actuation of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS)."

The Reactor Core Isolation Cooling System is a safety system designed to assure that sufficient reactor water inventory is maintained in the reactor vessel to permit adequate core cooling to take place. In the event ICS becomes inoperable during required operation conditions, High Pressure Core Spray System (CSH) is designed to start and supply makeup water to the reactor core. During this event, CSH was operable in the standby mode.

III. ANALYSIS OF EVENT (cont.)

The automatic isolation of the Primary Containment inboard and outboard isolation valves 2ICS*MOV128 and 2ICS*MOV121 (Primary Containment and Reactor Vessel Isolation

Control System - Group 10 Isolation) is a conservative action designed to protect the plant and public by preventing significant releases of radioactive materials to the environment.

The lapsed time for this event, from the ICS isolation initiation to it being reset, was approximately 32 minutes.

IV. CORRECTIVE ACTIONS

The immediate corrective actions taken by Control Room operators were to verify the position of the ICS isolation valves, verify that Primary Containment parameters were normal, declare ICS inoperable and enter applicable Technical Specification Limiting Conditions for Operation (LCO) ACTION Statement (with CSH operable), commencing an immediate investigation into the cause(s) for the ICS isolation, and the eventual restoration of ICS to an operable standby condition.

Additional actions taken include:

1. Control Room operators reviewed the event with the Engineering Department to evaluate the affected systems for potential pipe movement (water hammer) resulting from increased steam flow. The review determined that a system walkdown was not required.

2. Operating Procedure N2-OP-31, "Residual Heat Removal System," was revised to:

   - Place Heat Exchanger Pressure Controller in "Manual" with 0 output.
   - Require operator to verify controller output prior to opening steam admission valves.
   - Prohibit the concurrent opening of 2RHS*MOV80A and 2RHS*MOV22A during initial pressurization/warming of the steam condensing piping except in emergency situations when time is critical. Add a caution that warns of the potential ICS High Steam Flow Isolation if 2RHS*MOV22A is opened too quickly during the evolution.

IV. CORRECTIVE ACTIONS (cont.)

3. The procedure revision/review process in place at the time Operating Procedure N2-OP-31 was changed to allow throttling with both RHS*MOV22A and 80A open has been examined and found to be consistent with current review practices. The inadvertent omission of sufficient procedure guidance/precaution during the valve throttling steps was determined to be an isolated occurrence.

4. A Work Request (WR# 201449) was initiated to troubleshoot the Division I ICS/RHS High Steam Flow Computer Point (ICSPC17). This computer point did not alarm during the event even though the Division I Isolation Logic tripped and the associated isolation valve and annunciators actuated. This activity is presently ongoing.

V. ADDITIONAL INFORMATION

A. Failed components: none.

B. Previous similar events: none.

C. Identification of components referred to in this LER:

COMPONENT	IEEE 803 EIIS FUNCTION	IEEE 805 SYSTEM ID
Reactor Core Isolation Cooling System	N/A	BN
Residual Heat Removal System	N/A	BO
High Pressure Core Spray System	N/A	BG
Primary Containment	N/A	NH
Condenser	COND	SG
Motor Operated Isolation Valve	ISV	BO
Pressure Control Valve	PCV	BO
Heat Exchanger	HX	BO

ATTACHMENT A

ICS/RHS STEAM CONDENSING PIPING SCHEMATIC