

CATEGORY 1

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ACCESSION NBR:9604150124 DOC.DATE: 96/04/08 NOTARIZED: NO DOCKET #
 FACIL:50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244
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 RECIP.NAME RECIPIENT AFFILIATION

JOHNSON,A.R.

SUBJECT: LER 96-003-00:on 960308,both pressurizer relief valves
 inoperable.HPES evaluation is being conducted to determined
 cause of event.C/As:both PORVs restored.W/960408 ltr.

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

NOTES:License Exp date in accordance with 10CFR2,2.109(9/19/72). 05000244 G

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ROBERT C. MECREDDY
Vice President
Nuclear Operations

April 8, 1996

U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Allen R. Johnson
PWR Project Directorate I-1
Washington, D.C. 20555

Subject: LER 96-003, Both Pressurizer Relief Valves Inoperable, Results in Condition That Could Have Prevented Fulfillment of a Safety Function
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

In accordance with 10 CFR 50.73, Licensee Event Report System, item (a) (2) (v), which requires a report of, "Any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to: ... (D) Mitigate the consequences of an accident", the attached Licensee Event Report LER 96-003 is hereby submitted.

This event has in no way affected the public's health and safety.

Very truly yours,

Robert C. Mecreddy

xc: U.S. Nuclear Regulatory Commission
Mr. Allen R. Johnson (Mail Stop 14B2)
PWR Project Directorate I-1
Washington, D.C. 20555

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TITLE (4) Both Pressurizer Relief Valves Inoperable, Results in Condition That Could Have Prevented Fulfillment of a Safety Function

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 NAME	DOCKET NUMBER
03	08	96	96	003	00	04	08	96	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9) 3

POWER LEVEL (10) 000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)
20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(x)
20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71
20.2203(a)(2)(ii)	20.2203(a)(4)	50.73(a)(2)(iv)	OTHER
20.2203(a)(2)(iii)	50.36(c)(1)	X 50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME John T. St. Martin - Technical Assistant TELEPHONE NUMBER (Include Area Code) (716) 771-3641

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)

X YES (If yes, complete EXPECTED SUBMISSION DATE). NO

EXPECTED SUBMISSION DATE (15) MONTH 05 DAY 17 YEAR 96

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On March 8, 1996, with the plant in Mode 3, it was identified that both pressurizer power-operated relief valves had been inoperable concurrently. This resulted in the plant being in a condition that could have prevented the fulfillment of a safety function, in the unlikely event that a steam generator tube rupture occurred coincident with a loss of off-site power event.

Immediate corrective action was to restore both PORVs to operable status.

A Human Performance Enhancement System (HPES) evaluation is being conducted to determine the underlying cause of this event. A supplement to this LER will be submitted, describing the root cause.

Corrective action to prevent recurrence is outlined in Section V.B. Additional corrective actions will identified after the root cause has been determined.

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

I. PRE-EVENT PLANT CONDITIONS:

On March 8, 1996, the plant was in Mode 3 (hot shutdown) as a result of a reactor trip that occurred on March 7, 1996 (reported in LER 96-002). (Refer to Ginna Docket No. 50-244, LER 96-002.) The reactor coolant system (RCS) was being maintained at a temperature of 547 degrees F and a pressure of 2235 PSIG in anticipation of plant startup. The opportunity to perform maintenance and testing on the two pressurizer (PRZR) power-operated relief valves (PORV) became available. This work needed to be performed to support entering the Low Temperature Overpressure Protection (LTOP) condition during the annual refueling outage, which was scheduled to begin April 1, 1996. Conditions were judged acceptable to perform these activities during this unplanned shutdown. These activities consist of adjusting and verifying the proper valve benchset for the two PORVs, and readjustment of valve limit switches. (The equipment identification numbers for the PORVs are PCV-430 and PCV-431C.)

The Instrument and Control (I&C) group was notified that this work would be performed with the RCS at normal operating pressure of 2235 PSIG (with a saturation temperature in the PRZR of approximately 650 degrees F). The I&C group expressed concerns regarding personnel safety for working in the ambient temperature conditions that existed in the PRZR cubicle in the Containment (CNMT). A meeting was held to discuss I&C concerns and to review the general plan. Maintenance Procedure M-37.150 (Copes-Vulcan / Blaw-Knox Air Operated Control Valves Inspection and Refurbishment) was changed to allow work on both PORVs concurrently, in consideration of the heat stress in the PRZR cubicle in CNMT.

The Control Room operators acknowledged these changes to procedure M-37.150 as acceptable, since it was their understanding that even with the procedure change, the PORVs would remain operable per the requirements of Ginna Station Improved Technical Specifications (ITS) Limiting Condition for Operation (LCO) 3.4.11. This was based on their assumption that nitrogen would still be connected to the PORV actuators and available to open PORVs. Thus, the Shift Supervisor determined that LCO 3.4.11 Condition A and LCO 3.4.11 Condition F did not apply, since both PORVs were to remain operable.

At approximately 1406 EST on March 8, 1996, the Control Room operators held the control switches for the PORV block valves (MOV-515 for PCV-431C, and MOV-516 for PCV-430) in the close position, with power available to the breaker for each MOV. Operators understood that in this configuration these holds could be removed, the block valves opened, and the PORVs could then be opened.

II. DESCRIPTION OF EVENT:

A. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES:

- o March 8, 1996, 1455 EST: Event date and time. Air and nitrogen is removed from both PORVs.
- o March 8, 1996, 1632 EST: Air and nitrogen is restored to both PORVs.

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- o March 8, 1996: 2018 EST: Air and nitrogen is removed from both PORVs.
- o March 8, 1996: 2140 EST: Air and nitrogen is restored to both PORVs.
- o March 8, 1996: Discovery date.
- o March 28, 1996, 1408 EST: Having both PORVs inoperable under the conditions on March 8, 1996, is determined to be reportable to the NRC.
- o March 28, 1996, 1640 EST: The NRC Operations Center is notified of the events of March 8, as per 10 CFR 50.72 (b) (2) (iii) (D).

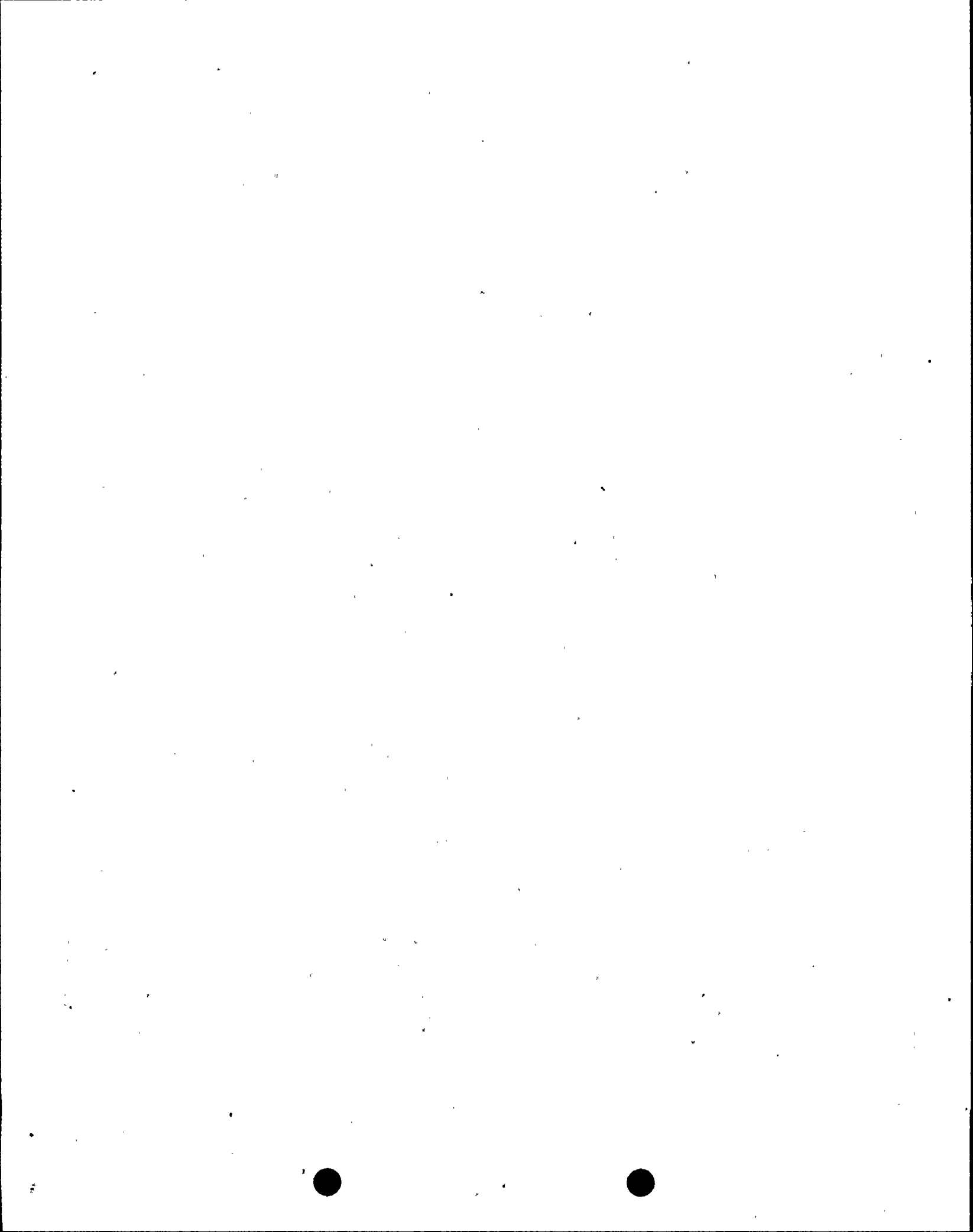
B. EVENT:

On March 8, 1996, the plant was in Mode 3. The benchsets and limit switches for both PORVs were being adjusted and verified per a temporary change to procedure M-37.150, and tested using Surveillance Test Procedure PT-2.6.5-SD (RCS Overpressure Protection System PORV Operability Verification), which verifies the timing of the PORV stroke for LTOP requirements. The I&C technicians entered the CNMT at approximately 1445 EST on March 8, to perform these activities. By approximately 1455 EST, the flex hose that supplies both instrument air and nitrogen to the PORV was removed (per changed procedure M-37.150) for both PORVs. In hindsight, this action made both PORVs inoperable concurrently, and is the event date and event time.

At the completion of the adjustments to the benchset and limit switches for each PORV, the flex hose was reconnected. By approximately 1632 EST this was completed (per changed procedure M-37.150) for both PORVs. Each PORV was stroked by the Control Room operators from the Main Control Board (MCB). The adjustments for both PORVs were verified as acceptable per procedure PT-2.6.5-SD (at approximately 1759 EST).

Operations supervision had previously determined that, since the benchset was changed to decrease the closing spring tension of the PORVs, it would be prudent to perform a seat leakage check on the PORVs prior to the completion of the maintenance package. The holds on the block valve control switches were then cleared. Both PORVs were verified to be in the closed position and block valve MOV-516 (for PCV-430) was stroked open at approximately 1803 EST for the seat leakage test. As MOV-516 stroked open, a substantial flow noise was evident in the PRZR cubicle, and it was discovered that seat leakage through PCV-430 was in excess of the previously observed leakage of approximately 0.25 gallons per minute (GPM).

Since the benchset had been changed on both PORVs, it was decided not to perform a seat leakage test on PCV-431C by opening MOV-515, and to conservatively assume that the seat leakage through PCV-431C was comparable to the leakage through PCV-430. The Control Room operators closed MOV-516 at approximately 1804 EST, and initiated discussions concerning PORV operability with this seat leakage.



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Subsequent to the I&C technicians exiting the CNMT, details of the activities were discussed between the I&C technicians who had performed the activities inside the PRZR cubicle in CNMT and members of the plant staff. Later that evening, members of the plant staff then realized that, during the benchset activities, the nitrogen supply had been disconnected to both PORVs concurrently. Therefore, the discovery date is March 8, 1996, late in the evening.

With both PORVs inoperable, LCO 3.4.11 Condition F requires that immediate action be initiated to restore at least one PORV to operable status. However, with nitrogen being restored to the PORVs at approximately 1632 EST, the PORVs were operable in accordance with LCO 3.4.11 at the time of discovery. During the period of (undeclared) PORV inoperability, LCO 3.4.11 Required Action F.3 was not met in that power for the associated block valve was not removed.

Activities needed to reduce the PORV seat leakage were reviewed. The leakage indications were reevaluated by plant staff. Preliminary estimates indicated that leakage was greater than the RCS operational leakage of ten (10) GPM identified leakage, as specified by LCO 3.4.13. At approximately 1940 EST on March 8, both PORVs were declared inoperable, solely due to their inability to meet the RCS operational leakage limits of LCO 3.4.13. Actions were taken as specified by LCO 3.4.11 Condition F. Since the block valves were already closed, the block valve control switches and breakers were held, and efforts to restore PORV seat leakage to less than 10 GPM began, in accordance with LCO 3.4.11 Required Action F.1.

The I&C technicians completed the readjustments to benchset and readjusted the limit switches for the PORVs as per procedure M-37.150. The holds were removed from the block valve control switches and breakers using the guidance of LCO 3.0.5. The block valves were stroked as needed, and the PORVs were tested using procedure PT-2.6.5-SD. Both PORVs demonstrated acceptable performance. A check of seat leakage was conducted, and leakage was evaluated to be less than 10 GPM. The PORVs were then declared operable at approximately 0123 EST on March 9, 1996, and returned to service.

Upon further evaluation later in the month, it was identified that the nitrogen supply to both PORVs had been concurrently disconnected on two separate occasions on March 8. This rendered the PORVs inoperable per LCO 3.4.11 each time, for a combined duration of approximately less than three (3) hours, without being declared inoperable.

C. INOPERABLE STRUCTURES, COMPONENTS, OR SYSTEMS THAT CONTRIBUTED TO THE EVENT:

None

D. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:

None

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E. METHOD OF DISCOVERY:

The condition of the PORVs was investigated after a failed seat leakage check. During discussions between I&C and plant staff, members of the plant staff became aware of the full scope of the work that had been performed during the benchset, and that the PORVs had actually been inoperable during the benchset activities. This information was subsequently relayed to the Shift Supervisor during the evening of March 8, 1996.

F. OPERATOR ACTION:

The Control Room operators notified higher supervision. Nuclear Safety and Licensing (NS&L) was also consulted concerning the seat leakage through the PORVs. These discussions also included a reportability discussion, but focused on the reportability of PORV seat leakage. The Control Room operators declared both PORVs inoperable, solely due to their inability to meet the RCS operational leakage limits of LCO 3.4.13 while the block valve was open, and isolated the PORVs in accordance with LCO 3.4.11 Condition F.

Documentation was prepared to initiate a reportability evaluation. At approximately 1408 EST on March 28, 1996, plant staff determined that a non-emergency four hour notification, per 10 CFR 50.72 (b) (2) (iii) (D), should be made to the NRC Operations Center. This notification was made at approximately 1640 EST on March 28, 1996.

G. SAFETY SYSTEM RESPONSES:

None

III. CAUSE OF EVENT:

A. IMMEDIATE CAUSE:

The immediate cause of both PORVs being inoperable concurrently was due to the disconnection of the flex hose to both PORV actuators to install air-sets for the benchset and limit switch activities. Removal of this flex hose removed the supply of instrument air and nitrogen to both PORVs.

B. INTERMEDIATE CAUSE:

The intermediate cause of the removal of the nitrogen supply to both PORVs was the procedural direction that permitted the concurrent benchset of both PORVs, and an incorrect assumption by plant staff that in this configuration, nitrogen would still be available to open PORVs.

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C. ROOT CAUSE:

A Human Performance Enhancement System (HPES) evaluation is being conducted to determine the underlying cause for how and why this incorrect assumption occurred. The preliminary results of the HPES evaluation have been presented to plant management. When the HPES evaluation and Root Cause Analysis are completed, a supplement to this LER will be submitted, describing the root cause(s).

The NUREG-1022 Cause Code for this event will be provided in a supplement to this LER.

IV. ANALYSIS OF EVENT:

A reportability evaluation was performed by NS&L. NS&L identified that the concurrent inoperability of both PORVs could have rendered the plant unable to mitigate the consequences of a steam generator tube rupture (SGTR) in accordance with the Westinghouse analysis of record, if the SGTR had occurred coincident with a loss of off-site power event.

This event is reportable in accordance with 10 CFR 50.73, Licensee Event Report System, item (a) (2) (v), which requires a report of, "Any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to: ... (D) Mitigate the consequences of an accident". Both PORVs inoperable under the conditions that existed on March 8, 1996, is an event that could have prevented RCS depressurization after a SGTR, coincident with a loss of off-site power event.

An assessment was performed considering both the safety consequences and implications of this event with the following results and conclusions:

There were no operational or safety consequences or implications attributed to both PORVs being inoperable because:

- o The PORVs serve as the LTOP protection devices during conditions of low temperature in the RCS. The plant did not enter conditions where this protection would have been required.
- o The PORVs provide a depressurization path for a SGTR when normal and auxiliary PRZR spray are not available (during a loss of off-site power event). The plant did not enter conditions where a loss of off-site power occurred. Thus, PRZR spray was available.
- o In either of the above situations, the PORVs could have been restored to service to support these requirements.

Based on the above, it can be concluded that the public's health and safety was assured at all times.

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V. CORRECTIVE ACTION:

A. ACTION TAKEN TO RETURN AFFECTED SYSTEMS TO PRE-EVENT NORMAL STATUS:

- o The benchset for each PORV was readjusted to reduce seat leakage and limit RCS leakage.
- o The PORV limit switches were verified in the proper setup and configuration.
- o The PORVs were tested per procedure PT-2.6.5-SD.
- o The supply of instrument air and nitrogen was reconnected to the actuator for each PORV.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

1. Lessons learned have been provided to Operators, PORC Independent Reviewers, and Maintenance Planners.
2. The HPES will be completed.
3. A supplement to this LER will be submitted by May 17, 1996.

VI. ADDITIONAL INFORMATION:

A. FAILED COMPONENTS:

None

B. PREVIOUS LERs ON SIMILAR EVENTS:

A similar LER event historical search was conducted with the following results: Since the root cause has not been determined, it is not appropriate to conclude which similar LER events with the same root cause have occurred at Ginna Nuclear Power Plant.

C. SPECIAL COMMENTS:

None