

LICENSEE EVENT REPORT (LER)

APPROVED OMS NO. 3180-0104 EXPIRES 8/31/85

FACILITY NAME (1) R.E. Ginna Nuclear Power Plant DOCKET NUMBER (2) 0 5 0 0 0 2 4 4 PAGE (3) 1 OF 0 8

TITLE (4) Due To A Design Deficiency The Failure Of The SI Block/Unblock Switch Could Render Some Automatic Actuation Features of Both Trains of SI Inoperable

Table with columns: EVENT DATE (5), LER NUMBER (6), REPORT DATE (7), OTHER FACILITIES INVOLVED (8), MONTH, DAY, YEAR, SEQUENTIAL NUMBER, REVISION NUMBER, FACILITY NAMES, DOCKET NUMBER(S)

Table for regulatory requirements with columns: OPERATING MODE (9), POWER LEVEL (10), and various CFR sections (e.g., 20.406(a)(1)(i)(I), 80.73(a)(2)(i)(H))

LICENSEE CONTACT FOR THIS LER (12) NAME Wesley H. Backus Telephone Number 3 1 5 5 2 4 1 - 4 4 4 6

Table for component failure descriptions with columns: CAUSE, SYSTEM, COMPONENT, MANUFACTURER, REPORTABLE TO NRC, etc.

SUPPLEMENTAL REPORT EXPECTED (14) YES (if yes, complete EXPECTED SUBMISSION DATE) X NO

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

On November 17, 1989, an initial Engineering evaluation was completed, which identified a potential problem with the Safety Injection (SI) Block/Unblock Switch.

On December 20, 1989, at 1630 EST, with the reactor at approximately 99% full power, the Plant Operating Review Committee (PORC) reviewed the Engineering evaluation, and made a final determination that a single failure of the SI Block/Unblock Switch could render some automatic actuation features of both trains of SI inoperable.

The PORC, after reviewing the situation thoroughly, concluded that sufficient justification existed for continued safe plant operation.

The underlying cause of the event was a design error which occurred during the original construction of the R.E. Ginna Nuclear Power Plant.

Immediate corrective action was taken to verify that the plunger position of the SI Block/Unblock Switch contacts were in the proper position.

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

I. PRE-EVENT PLANT CONDITIONS

The plant was at approximately 99% steady state full power with no major activities in progress.

II. DESCRIPTION OF EVENT

A. DATES AND APPROXIMATE TIMES FOR MAJOR OCCURRENCES:

- o Initial plant operation in 1969: Event date.
- o November 17, 1989: Discovery date.
- o December 20, 1989, 1630 EST: Reportability date and time.
- o December 20, 1989, 1630 EST: Plant Operating Review Committee (PORC) determines that safe operation of plant may continue.

B. EVENT:

On November 17, 1989, an initial Engineering evaluation was completed, which identified a potential problem with the SI Block/Unblock Switch. Subsequently, PORC review of the Engineering evaluation, on December 20, 1989, with the reactor at approximately 99% full power, determined that a single failure of the Safety Injection (SI) Block/Unblock Switch could render some automatic actuation features of both trains of SI Inoperable. This determination followed an evaluation of the following correspondences:

- o Letter from S.P. Swigart of the Westinghouse Electric Corporation (NS-OPLS-OPL-I-89-517) to Mr. R. Eliaz, Rochester Gas and Electric Corporation (RG&E), dated October 12, 1989, Subject: Control Room Safety Injection Block Switches.

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- o Interoffice Correspondence from Richard Baker to P. Wilkens and G. Wrobel, dated November 17, 1989, Subject: Control Room Safety Injection Block Switches.

The Westinghouse Correspondence (NS-OPLS-OPL-I-89-517) identified a potential single failure mechanism which could result in blocking of some automatic actuation features of both trains of SI, (i.e. SI automatic actuation from low pressurizer pressure and low steam line pressure). Specifically, a single manual switch on the Main Control Board (MCB) is used to control this SI Block/Unblock function for both SI trains. An Engineering Evaluation of the existing Ginna Station SI Block/Unblock wiring configurations has concluded that the Westinghouse described potential single failure mechanism is applicable to Ginna Station. The Engineering Evaluation also concurred with the Westinghouse position that due to the low probability of a switch failure sufficient justification exists for continued plant operation until separate A train and B train SI Block/Unblock Switches can be installed.

The PORC after reviewing the above correspondence concluded that sufficient justification exists for continued safe operation of the plant.

- 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 event was made apparent due to Engineering's review of the following correspondence:

- o Letter from S.P. Swigart of the Westinghouse Electric Corporation (NS-OPLS-OPL-I-89-517), to Mr. R. Eliaz, RG&E, dated October 12, 1989, Subject: Control Room Safety Injection Block Switches.
- o This was documented in Interoffice Correspondence from Richard Baker to P. Wilkens and G. Wrobel, dated November 17, 1989, Subject: Control Room Safety Injection Block Switches.
- o The event was determined to be reportable following PORC review of the previous correspondence.

F. OPERATOR ACTION:

As this was a design deficiency, with only the potential for component failure, no immediate operator action was necessary.

G. SAFETY SYSTEM RESPONSES:

None required.

III. CAUSE OF EVENT

The underlying cause of the event is a design error which occurred during the original construction of the R.E. Ginna Nuclear Power Plant.

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IV. ANALYSIS OF EVENT

This event is reportable in accordance with 10 CFR 50.73, Licensee Event Report System, items (a)(2)(v)(D) and (a)(2)(vi) 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 mitigate the consequences of an accident", and 10 CFR 21, "Reporting of Defects and Noncompliances". The "basic component" is the SI Block/Unblock Switch, supplied by Westinghouse Electric Corporation as part of the original Ginna Station design. The potential failure of the SI Block/Unblock Switch rendering the automatic actuation of SI from low pressurizer pressure and low steamline pressure inoperable is considered a condition that alone could have prevented the immediate fulfillment of a safety function needed to mitigate the consequences of an accident.

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

PORC determined there were no immediate operational or adverse safety consequences due to the potential failure of the SI Block/Unblock Switch because:

- o Westinghouse has stated that the probability of a SI Block/Unblock Switch failure is very low (approximately 10^{-3} to 10^{-5} /yr).
- o Immediate action step 4 (performed from memory) of Emergency Operating Procedure E-0, Reactor Trip or Safety Injection, directs the operator to check parameters for SI actuation rather than rely on automatic actuation features. Manual actuation of SI and containment isolation is required if parameters fall below the auto SI actuation setpoints.

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- o Containment pressure of 4 psig will automatically actuate SI independent of the SI Block/Unblock Switch configuration. SI on HI Containment Pressure is used as a backup to the low pressurizer pressure and low steamline pressure SI actuation.
- o If the SI signal is blocked during depressurization, a bistable light will alert the operator of the blocked status.
- o Initial inspection of the plunger position of the SI Block/Unblock Switch verified that the switch contacts were (and continue to be) in the proper position.

Based on the above, it can be concluded that the public's health and safety will be assured at all times. Due to the date of occurrence, the condition is technically not 10 CFR 21 reportable. However, due to the potential significance of the failure scenario, Rochester Gas and Electric is submitting voluntary notification.

V. CORRECTIVE ACTION

A. ACTION TAKEN AS A RESULT OF THE EVENT:

- o Knowledgeable personnel inspected the plunger position of the SI Block/Unblock Switch and verified that the switch contacts were in the proper position.
- o Operating Procedure O-1.1 (Plant Heatup From Cold Shutdown to Hot Shutdown) was changed to add the following note and check-off to step 5.11.6:

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NOTE: Prior to placing the SI Block/Unblock Switch to the normal position, station an operator inside the MCB in direct observation of the SI Block/Unblock Switch, to observe that both plunger tips are recessed inward after the switch is placed to normal position.

Block switch plunger tips position inward _____

- o An RG&E operator aid tag was placed on the MCB adjacent to the SI Block/Unblock Switch denoting the note from O-1.1.
- o An RG&E operator aid tag was also placed inside the MCB adjacent to the rear of the SI Block/Unblock Switch stating the following: This is the switch we verify that the plunger's tips are recessed inward when the switch is placed to normal (labeled LAK).
- o A spare switch of similar design has been placed in the Control Room for the purpose of training the operators to recognize the differences in plunger position.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

- o During the 1991 Refueling Outage, subject to equipment availability, a design change and modification will be made to separate the Block Switches for each SI train.
- o A review of the application of similar switches will be performed, to determine if there are generic implications.
- o Due to the delay between "discovery date" and "reportability date", improvements will be made in the RG&E internal review process, including means for formal notification of Ginna Station of potentially reportable issues.

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- o Westinghouse will be notified of this isolated occurrence, in which Ginna Station was not notified by Westinghouse.

VI. ADDITIONAL INFORMATION

A. FAILED COMPONENTS:

None identified.

B. PREVIOUS LERS ON SIMILAR EVENTS:

A similar LER event historical search was conducted with the following results: No documentation of similar LER events with the same root cause at Ginna Station could be identified.

C. SPECIAL COMMENTS:

None.