CATEGORY 1

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ACCESSION NBR:9606260096 DOC.DATE: 96/06/17 NOTARIZED: NO DOCKET #
FACIL:50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244
AUTH.NAME AUTHOR AFFILIATION
ST MARTIN,J.T. Rochester Gas & Electric Corp.
MECREDY,R.C. Rochester Gas & Electric Corp.
RECIP.NAME RECIPIENT AFFILIATION

VISSING,G.S.

SUBJECT: LER 96-005-00:on 960516,PORC determined deficient procedures do not meet SRs for testing safety-related logic circuits. Caused by inadequancies in individual testing procedures. Procedures re Improved TSs revised.W/960617 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

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RGE AND

June 17, 1996

U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Guy S. Vissing
Project Directorate I-1
Washington, D.C. 20555

Subject: LER 96-005, Deficient Procedures for Testing of Safety-Related Logic Circuits, Identified Using Criteria of NRC Generic Letter 96-01, Resulted in Condition Prohibited by Technical Specifications
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

In accordance with 10 CFR 50.73, Licensee Event Report System, item (a) (2) (i) (B), which requires a report of, "Any operation or condition prohibited by the plant's Technical Specifications", the attached Licensee Event Report LER 96-005 is hereby submitted.

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

Very truly yours,

Robert C. Mecredy

xc: U.S. Nuclear Regulatory Commission
Mr. Guy S. Vissing (Mail Stop 14C7)
PWR Project Directorate I-1
Washington, D.C. 20555

U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

U.S. NRC Ginna Senior Resident Inspector

IE22

NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

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TITLE (4)

Deficient Procedures for Testing of Safety-Related Logic Circuits, Identified Using Criteria of NRC Generic Letter 96-01, Resulted in Condition Prohibited 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 NAME	DOCKET NUMBER
05	16	96	96	-- 005	-- 00	06	17	96	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	N
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)	X 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)	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	TELEPHONE NUMBER (Include Area Code)
John T. St. Martin - Technical Assistant	(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)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

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

On May 16, 1996, at approximately 1500 EDST, the plant was defueled. Using the criteria of NRC Generic Letter 96-01, it was identified that several surveillance test procedures had not fully complied with the Surveillance Requirements of the Ginna Improved Technical Specifications. The Plant Operations Review Committee determined that these deficient procedures did not meet the requirements of Specification 5.4.1 that procedures be established, implemented, and maintained for these activities.

Immediate corrective action was to perform the required testing of the safety-related logic circuits during the 1996 refueling outage.

The underlying cause of the inadequate procedures was an assumption that it was adequate to use industry-accepted methods for testing of these circuits, and the need to test parallel circuits and multiple contacts was not recognized.

This event is NUREG-1022 Cause Code (D).

Corrective action to prevent recurrence is outlined in Section V.B.

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

I. PRE-EVENT PLANT CONDITIONS:

To prepare the response to NRC Generic Letter (GL) 96-01, "Testing of Safety-Related Logic Circuits", Rochester Gas and Electric (RG&E) formed a "GL 96-01 Review Team" in March, 1996, with representation from Electrical Engineering, Instrument and Control, Results and Test, System Engineering, and Nuclear Safety and Licensing. This team agreed that test procedure reviews performed under prior activities were not documented to the extent desired to be compatible with the GL 96-01 requirements. Therefore, the team performed this review, starting in early April, 1996. The team identified and reviewed procedures which implement the Ginna Improved Technical Specifications (ITS) Surveillance Requirements (SRs). This review compared electrical schematic drawings and logic drawings against surveillance test procedures to ensure that all portions of the logic circuitry are adequately covered in the procedure, and to verify compliance with all applicable ITS SRs associated with safety-related logic circuits.

Numerous individual findings were identified during the course of this review. Individual findings were classified into four groups:

a. Omission:
An applicable logic component is not integrated into an existing formal test procedure. Failure or inoperability of this component could adversely affect a required safety function.

b. Deficiency:
An applicable logic component is incorporated into an existing formal test procedure. However, the steps used to test all required functions and failure modes are inadequate to verify complete operability of the subject component. Failure or inoperability of this component could adversely affect a required safety function.

c. Weakness:
An applicable logic component is incorporated into an existing formal test procedure. However, the steps used to test all required functions and failure modes are inadequate to verify complete operability of the subject component. Due to the inherently conservative design of the associated logic circuitry, failure or inoperability of this component cannot, by itself, prevent or actuate a required safety function. The subject component function and failure modes are not required to be tested by any ITS SR.

d. Proactive Initiative:
A logic component that is out of the scope of the requirements of GL 96-01, where it has been identified that the steps used to test all associated functions and failure modes may be inadequate to verify complete operability of the subject component. Failure or inoperability of this component cannot, by itself, prevent or actuate a required safety function. Improvements to the associated test procedure would enhance the safe and reliable operation of the plant.

This review was completed on May 14, 1996, and the results were documented in internal plant documents. There were no "omissions", sixteen (16) "deficiencies", twenty-one (21) "weaknesses", and seven (7) "proactive initiatives" identified by the team. The 16 deficiencies were corrected during the 1996 Refueling outage as soon as feasible after identification, and prior to the affected component having to be operable per the ITS. All weaknesses and proactive initiatives will be resolved prior to startup from the 1997 Refueling outage.

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

II. DESCRIPTION OF EVENT:

A. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES:

- January 29, 1996: NRC GL 96-01 is received at RG&E.
- May 14, 1996: GL 96-01 Review Team identifies no omissions and sixteen (16) deficiencies.
- May 16, 1996, 1500 EDST: The PORC determines that these deficiencies did not meet the requirements of Specification 5.4.1. Event date and time.
- May 16, 1996, 1500 EDST: Discovery date and time.
- May 21, 1996: The affected components for all 16 deficiencies have been satisfactorily tested.

B. EVENT:

On May 16, 1996, at approximately 1500 EDST, the plant was defueled (which is not a mode as defined in the ITS) with no specific operational or outage activities in progress related to the review of GL 96-01 or to the testing of components identified during this review. The GL 96-01 Review Team reported the results of their review to the PORC. The PORC concurred with the results of the review. The PORC determined that having 16 deficient procedures did not meet the requirements of Specification 5.4.1, which states, in part, that written procedures shall be established, implemented, and maintained covering applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33 recommends written procedures for surveillance tests for the reactor protection system and other systems. The PORC determined that written procedures were not adequately established for these activities, which is a condition prohibited by Specification 5.4.1. The PORC concluded that these procedures were deficient due to a common root cause and collectively represented a substantial breakdown in the surveillance testing program.

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

None

D. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:

None

E. METHOD OF DISCOVERY:

RG&E formed the GL 96-01 Review Team in March, 1996, to ensure that all portions of logic circuitry for safety-related systems and components are adequately covered in an associated surveillance test procedure to meet all applicable ITS SRs. This review was completed on May 14, 1996. The Review Team reported the results of their review to the PORC on May 16, 1996. The PORC determined that having 16 deficient procedures did not meet the requirements of Specification 5.4.1.

F. OPERATOR ACTION:

The Operations Group reviewed the status of testing of the individual findings (deficiencies, weaknesses, and proactive initiatives), and directed that a mode restriction be placed on the plant not to enter Mode 5 until the completion of all applicable testing for any remaining deficiencies. The NRC Senior Resident Inspector had already been notified of these findings by the Operations Group. The plant was defueled at this time, and the findings did not affect any safety functions required with the plant in this condition. Therefore, no other actions were required of the operators.

G. SAFETY SYSTEM RESPONSES:

None

III. CAUSE OF EVENT:

A. IMMEDIATE CAUSE:

The immediate cause of the 16 deficient procedures used for the testing of safety-related logic circuits was inadequacies in individual surveillance testing procedures.

B. INTERMEDIATE CAUSE:

The intermediate cause of the inadequacies in surveillance testing procedures was unidentified deficiencies in the surveillance testing program.

C. ROOT CAUSE:

The underlying cause of not previously identifying the deficiencies in the surveillance testing program was an assumption that it was adequate to use industry-accepted methods for testing of safety-related logic circuits to meet ITS SRs. The need to test parallel circuits and multiple contacts was not recognized, due to this assumption and, in many cases, due to the design of the system. The specificity of GL 96-01 (including the direction for the scope of the expected reviews, level of detail, and examples for individual contacts) provided the clarification needed to identify the program deficiencies. While technically establishing no new requirements, GL 96-01 provided these clarifications, which led to the discovery of logic testing deficiencies which were previously unrecognized.

This event is NUREG-1022 Cause Code (D), "Defective Procedure".

This event does not meet the NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants", definition of a "Maintenance Preventable Functional Failure", because there were no functional failures.

IV. ANALYSIS OF EVENT:

This event is reportable in accordance with 10 CFR 50.73, Licensee Event Report System, item (a) (2) (i) (B), which requires a report of, "Any operation or condition prohibited by the plant's Technical Specifications". The deficient surveillance testing procedures for testing of safety-related circuits identified during the GL 96-01 review did not meet the requirements of Specification 5.4.1.

The following ITS SRs had deficiencies:

SR 3.3.1.5
SR 3.3.1.11
SR 3.3.2.4 for Table 3.3.2-1, Function 2.a (via Table 3.3.5.1, Function 4)
SR 3.3.2.7 for Table 3.3.2-1, Function 1.b (two deficiencies)
SR 3.3.2.7 for Table 3.3.2-1 Function 6.b
SR 3.5.2.5
SR 3.5.2.6
SR 3.7.5.5 (two deficiencies)
SR 3.7.5.6 (three deficiencies)
SR 3.8.1.9 (three deficiencies)

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 the deficient procedures used for the testing of safety-related logic circuits because:

- All safety-related logic circuits were tested to the complete requirements of the ITS SRs.
- No component failures were identified during this testing.
- The identified surveillance inadequacies did not result in the unavailability of the safety system when called on.
- The affected systems had sufficient redundancy to mitigate an accident in the event that the untested logic failed.

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

V. CORRECTIVE ACTION:

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

- Procedures associated with performing the ITS SRs were revised, as necessary, to fully comply with the SRs.
- All 16 deficiencies in testing of safety-related logic circuits were corrected by completing the required testing prior to the component having to be operable per the ITS.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

- Surveillance test procedures identified by the GL 96-01 Review Team will be verified to fully comply with the ITS SRs prior to the next scheduled surveillance for the associated component.
- Findings for components that could have the potential for adversely affecting a safety function were corrected during the 1996 Refueling outage. Findings identified as either "weaknesses" or "proactive initiatives" will be resolved prior to startup from the 1997 Refueling outage.
- As part of Continuing Training, NRC GL 96-01, GL 96-01 Review Team findings, and lessons learned will be provided to appropriate personnel.
- The Plant Change Request (PCR) process will be reviewed, to ensure that the process for any plant modification (that changes or installs safety-related logic circuits) includes consideration of the lessons learned from GL 96-01.

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

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:

- LER 93-005 was a similar event (failure to perform TS SR, resulting in a condition prohibited by TS), with a different root cause (misinterpretation of TS).
- LER 94-004 was a similar event (missed surveillances not identified in LER 93-005, resulting in a condition prohibited by TS), with a similar root cause (lack of clearly defined interpretations of TS requirements).

C. SPECIAL COMMENTS:

None