CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9807220182 DOC.DATE: 98/07/14 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 98-002-00:on 971019,CR emergency air treatment sys actuating function was not operable.Caused by mispositioned switch.Revised procedure CPI-MON-R37.W/980714 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 8
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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ROBERT C. MECREDY
[illegible]

July 14, 1998

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

Subject: LER 1998-002, Control Room Emergency Air Treatment System Actuating Function Not Operable, Due to Inadvertently Mispositioned Switch, Causes a Condition Prohibited by Plant Technical Specifications
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Vissing:

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 1998-002 is hereby submitted.

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

Very truly yours,

Robert C. Mecredy

xc: Mr. Guy S. Vissing (Mail Stop 14B2)
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
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U.S. NRC Ginna Senior Resident Inspector

NRC FORM 366 (6-1998) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

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LICENSEE EVENT REPORT (LER)

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

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TITLE (4)

Control Room Emergency Air Treatment System Actuating Function Not Operable, Due to Inadvertently Mispositioned Switch, Causes a Condition Prohibited by Plant 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
10	19	1997	1998	-- 002 --	00	07	14	1998	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	1
POWER LEVEL (10)	90

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)
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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

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 June 15, 1998, the plant was in Mode 1 at approximately 100% steady state reactor power. It was discovered that previous inoperability of a Control Room Emergency Air Treatment System actuation function had occurred and the Required Actions of the Technical Specifications were not performed during the time of this inoperability. This condition is prohibited by the plant's Technical Specifications.

No immediate corrective action was required at the time of discovery.

The cause of this condition was an inadvertently mispositioned switch.

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:

The Control Room Emergency Air Treatment System (CREATS) has three channels of monitoring for radioactivity. Radiation Monitor R37 monitors for particulate radiation. The other two channels are Radiation Monitors R36 (noble gas) and R38 (iodine). An actuation signal from any one radiation monitor would ensure the CREATS is aligned to "CREATS Mode F", where the Control Room ventilation system is isolated from outside air. In addition, if a CREATS actuation function were inoperable, Ginna Station Improved Technical Specifications (ITS) Limiting Condition for Operation (LCO) Required Action 3.3.6.A.1 requires that CREATS be placed in Mode F within one hour.

A failure of R37 occurred on October 15, 1997. Corrective maintenance was performed by Instrument and Control (I&C) technicians, which included R37 drawer removal and power supply replacement. At the completion of maintenance, the drawer was reinstalled and the power supply was tested satisfactorily per the applicable section of calibration procedure CPI-MON-R37 (Calibration of Control Room Particulate Radiation Monitor R-37). At the completion of testing, R37 was returned to service on October 20, 1997.

The R37 monitor is a beta scintillator and is designed to detect the beta emissions from the decay of activation and fission products. R37 has two selectable modes, "INT" and "DIFF". INT (integration function) will detect all pulses above a preset energy level, and DIFF (differential function) will only detect pulses within a preset energy range. The "INT/DIFF" switch must be in the INT position for R37 to be considered operable, and is calibrated in that mode.

R37 was calibrated on April 1, 1998, for routine preventive maintenance (PM) calibration per Work Order 19703705. During this calibration, the "INT/DIFF" switch was found to be in the "DIFF" position and was restored to the "INT" position. ACTION Report 98-0494 was initiated on April 2, 1998, to address this switch mispositioning. During the investigation for ACTION Report 98-0494, it was concluded that the "INT/DIFF" switch was inadvertently mispositioned during activities performed on R37 between October 15, 1997, and October 20, 1997 and this mispositioning was not detected at that time. For activities of October 1997, the testing section of CPI-MON-R37 was performed and the calibration section did not need to be performed. Steps in the calibration section requiring verification and recording of the switch position (after calibration) were also not needed and not performed.

On June 15, 1998, the plant was in Mode 1 at approximately 100% steady state reactor power. In activities unrelated to plant conditions, members of the plant staff were reviewing the previous status of the CREATS, as part of the resolution of ACTION Report 98-0494. With the switch in the DIFF position, any emitted particulates with energies outside the preset energy range would not have been counted by R37. Therefore, the R37 indication would have been less than the actual particulate radiation level. In the event of a radiation release, actuation of the CREATS from R37 during increasing particulate level radiation would not have occurred at the desired R37 trip setpoint.

Based on this information, members of the plant staff concluded that, from October 1997 to April 1, 1998, the CREATS could not be assured of functioning to detect all required ranges of particulate energy, due to the inadvertent and undetected mispositioning of the R37 "INT/DIFF" switch. Under these conditions (if known) the R37 function would have been declared inoperable in October 1997. This condition is controlled by ITS LCO 3.3.6, which requires that all CREATS actuation instrumentation be operable or CREATS be placed in Mode F within 1 hour.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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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:

- October 1997: Corrective maintenance performed on R-37. INT/DIFF switch inadvertently mispositioned. Event Date.
- April 1, 1998: It is discovered that R-37 INT/DIFF switch is mispositioned.
- April 2, 1998: ACTION Report 98-0494 written to investigate switch mispositioning.
- June 15, 1998: Operability determination for ACTION 98-0494 concluded there was a past operability concern for R37 from October 1997 to April 1, 1998. Discovery Date.
- June 16, 1998: PORC concludes that R-37 was inoperable in the past.

B. EVENT:

On June 16, 1998, the plant was in Mode 1 at approximately 100% steady state reactor power. In activities unrelated to plant conditions, members of the plant staff presented their conclusion to the Plant Operations Review Committee (PORC) that the CREATS actuation instrumentation for R37 was not operable from October 1997 to April 1, 1998. PORC reviewed this information and confirmed that R37 had been inoperable. Under these conditions (if known), the R37 function would have been declared inoperable in October 1997. This condition is not permitted by ITS LCO 3.3.6, which requires that all CREATS actuation instrumentation be operable. The Discovery Date for this event is June 15, 1998.

In accordance with ITS LCO 3.3.6, several Required Actions would need to be performed with the R37 actuation function inoperable, if CREATS had not been place in Mode F within the 1 hour limit. The switch mispositioning had not been discovered until April 1, 1998, and was immediately corrected on that date. The determination that this condition would have required entry into ITS LCO 3.3.6 was not made until June 15, 1998, so none of the Required Actions for Conditions 3.3.6.B or 3.3.6.C were performed between October 1997 and April 1, 1998.

This is a condition prohibited by Technical Specifications. For most of the time between October 1997 and April 1, 1998, the plant was in a condition prohibited by the plant's Technical Specifications. The plant was in various operating modes between October 1997 and April 1, 1998, at the times when the CREATS was in this condition.

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

None

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

D. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:

None

E. METHOD OF DISCOVERY:

This event was identified by plant staff on June 15, 1998, as part of the resolution of ACTION Report 98-0494, and R37 was confirmed as previously inoperable by PORC on June 16, 1998.

F. OPERATOR ACTION:

None

G. SAFETY SYSTEM RESPONSES:

None

III. CAUSE OF EVENT:

A. IMMEDIATE CAUSE:

The immediate cause of the condition prohibited by Technical Specifications was CREATS actuation instrumentation for Function R-37 was inoperable.

B. INTERMEDIATE CAUSE:

The intermediate cause of Function R37 being inoperable was an undetected, mispositioned switch.

C. ROOT CAUSE:

The underlying cause of the mispositioned switch was that the switch was inadvertently mispositioned to the "DIFF" position when the R37 drawer was removed for the power supply replacement in October 1997. This mispositioning was not detected. The switch is small and located in a recessed area on the surface of the power supply module. This switch was inadvertently touched while the module was being carried between the field and the I&C shop.

The switch remained in the incorrect position until the mispositioning was detected during routine calibration on April 1, 1998. The root cause is the lack of verification of proper switch position after the maintenance was performed in October 1997, even though the switch position should not have been affected by the power supply replacement.

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This was a personnel error by an RG&E I&C technician, and was a cognitive error in that the I&C technician did not recognize or detect that the mispositioning had occurred. The inadvertent mispositioning was contrary to approved procedures, in that the procedure did not call for the repositioning of the switch. There were no unusual characteristics (heat, noise, etc.) that directly contributed to the error.

There was a delay in determining previous inoperability of R37, from April 1, 1998, to June 15, 1998. This delay is attributed to a weakness in the ACTION Report form, to promptly address previous inoperability.

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". Having CREATS actuation instrumentation in this condition without performing the Required Actions of ITS LCO 3.3.6 is a condition prohibited by Technical Specifications.

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

There were no operational or safety consequences attributed to having both channels in this condition and the plant not placed into Mode 3 because:

- In the event of a design basis accident, the first radioisotope releases would be primarily noble gases, in particular Xe-133 and Xe-135. Should the R36 noble gas monitor setpoint ever be reached, due to these noble gases, the CREATS would be automatically aligned to CREATS Mode F. The next group of radioisotopes of consequence would be the radioiodines. Should the R38 radioiodine monitor setpoint ever be reached, again the CREATS would be automatically aligned to CREATS Mode F.

- Particulate monitor R37 could also be expected to reach its trip setpoint in the event of a design basis accident. However, there is no design basis accident that would be expected to cause R37 to reach its trip setpoint prior to R36 and R38 reaching their trip setpoints.

- Between October 1997 and April 1, 1998, R36 and R38 were operable. Should either R36 or R38 have been inoperable during this period, such a condition would have been recognized, and action would have been taken as per ITS LCO Required Action 3.3.6.A.1 to place CREATS in Mode F. Therefore, while R37 was inoperable, R36 and R38 served as redundant monitors of activity of Control Room intake air, or, when either R36 or R38 may have been inoperable, CREATS would have been placed into Mode F, in compliance with Technical Specifications.

- The CREATS provides airborne radiological protection for the control room operators in the event of a design basis accident. CREATS performs no functions that mitigate the consequences of an accident to the public, nor does CREATS affect the health and safety of the public.

Based on the above, it can be concluded that there were no unreviewed safety questions, and 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:

Since CREATS was operable at the time of discovery, no immediate corrective actions were needed.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:

- Procedure CPI-MON-R37 will be changed to place switch setting verification in the restoration portion of the procedure. The restoration section is always performed, which eliminates the possibility that these switches could be left in the incorrect position.
- Procedures for calibration of R36 and R38 (CPI-MON-R36 and CPI-MON-R38) will also be changed, similar to the changes for CPI-MON-R37.
- Procedure M-71.4 (Removal and/or Installation of Rack Mounted Control Modules) will be changed to require recording of module as-found switch positions and verification of "as-left" positions.
- Lessons learned from this event were discussed at a meeting of I&C technicians. Emphasis was placed on looking for what could go wrong during maintenance activities, and how to identify and correct such events.
- The Ginna Station Corrective Action Program was enhanced. The ACTION Report form was improved to include a separate block for "Past Operability Due Date", to be assigned by the PORC chairman. This will enhance the identification and tracking of due dates for reviews for potential previous inoperability, and ensure this review is completed in a timely manner.

VI. ADDITIONAL INFORMATION:

A. FAILED COMPONENTS:

None

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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. However, the following LERs had similar root causes:

- LER 87-006 mispositioned circuit breaker, which was not detected for a period of time, resulted in loss of cooling function to plant area
- LER 97-006 mispositioned switch, which was not detected for several hours, resulted in loss of nuclear instrumentation system audible count rate function

C. SPECIAL COMMENTS:

None