

# CATEGORY

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ACCESSION NBR: 9904080027    DOC.DATE: 99/03/31    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 99-003-00: on 990301, two main steam non-return check valves were declared inoperable due to exceedance of acceptance criteria. Caused by changes in methodology & matls. Packing gland torque will be adjusted. With 990331 ltr.

DISTRIBUTION CODE: IE22T    COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 7  
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ROBERT C. MECREDDY  
Vice President  
Nuclear Operations

March 31, 1999

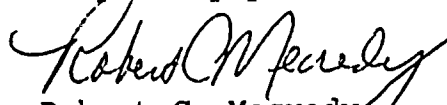
U.S. Nuclear Regulatory Commission  
Document Control Desk  
Attn: Guy S. Vissing  
Project Directorate I-1  
Washington, D.C. 20555

Subject: LER 1999-003, Two Valves Declared Inoperable Results in  
Condition Prohibited by Technical Specifications  
R.E. Ginna Nuclear Power Plant  
Docket No. 50-244

Dear Mr. Vissing:

The attached Licensee Event Report LER 1999-003 is submitted in  
accordance with 10 CFR 50.73, Licensee Event Report System, item  
(a) (2) (i) (B), "Any operation or condition prohibited by the  
plant's Technical Specifications".

Very truly yours,

  
Robert C. Mecreddy

xc: Mr. Guy S. Vissing (Mail Stop 8C2)  
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  
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475 Allendale Road  
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U.S. NRC Ginna Senior Resident Inspector

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## LICENSEE EVENT REPORT (LER)

(See reverse for required number of  
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APPROVED BY OMB NO. 3150-004 EXPIRES 06/30/2001  
Estimated burden per response to comply with this mandatory  
information collection request: 50 hrs. Reported lessons learned  
are incorporated into the licensing process and fed back to  
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Records Management Branch (T-6 F33), U.S. Nuclear  
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FACILITY NAME (1)

R. E. Ginna Nuclear Power Plant

DOCKET NUMBER (2)

05000244

PAGE (3)

1 OF 6

TITLE (4)

Two Valves Declared Inoperable Results 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
03	01	1999	1999	-- 003	-- 00	03	31	1999	FACILITY NAME	DOCKET NUMBER
										05000
										05000

OPERATING MODE (9)	3	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)	0	20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)(B)		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

John T. St. Martin - Technical Assistant

TELEPHONE NUMBER (include Area Code)

(716) 771-3641

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

## SUPPLEMENTAL REPORT EXPECTED (14)

YES

(If yes, complete EXPECTED SUBMISSION DATE).

X

NO

EXPECTED  
SUBMISSION  
DATE (15)

MONTH

DAY

YEAR

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

On March 1, 1999, at approximately 1707 EST, it was determined that the required torque to initiate valve disc closure for the two main steam non-return check valves was greater than the acceptance criteria specified in plant test procedures.

Immediate corrective action was to declare both valves inoperable and enter Technical Specification Limiting Condition for Operation 3.0.3. Following an evaluation of the test data by Nuclear Engineering Services, it was determined that the valves were operable. The plant exited Limiting Condition for Operation 3.0.3.

The underlying cause of the event was changes in the methodology and materials for packing these valves, which resulted in a greater than anticipated shaft breakaway torque.

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



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
R.E. Ginna Nuclear Power Plant	05000244	1999	-- 003 --	00	2 OF 6

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

## I. PRE-EVENT PLANT CONDITIONS:

Since 1992, Performance Monitoring technicians have performed surveillance test procedure PT-2.10.15, "Main Steam Non-Return Check Valve Closure Verification", using the test methodology established by Nuclear Engineering Services (NES). Performance of test procedure PT-2.10.15 satisfies Ginna Station Improved Technical Specifications (ITS) Surveillance Requirement (SR) 3.7.2.2 and satisfies the requirements of Section XI of the ASME Code for these valves. The required torque to initiate valve disc closure (breakaway torque) for the main steam non-return check valves (CV-3518 and CV-3519) has consistently been measured significantly lower than the acceptance criteria specified within the test procedure (600 ft-lbs).

On March 1, 1999, the plant was in Mode 3, cooling down to Mode 4 for a scheduled refueling outage. Both main steam isolation valves (MSIVs) were closed. At approximately 1707 EST, Performance Monitoring technicians were performing procedure PT-2.10.15. The technicians were utilizing a calibrated torque wrench with a range of 0 to 600 ft-lbs, as they had in previous years. The technicians could not initiate valve disc closure (achieve breakaway torque), even at the full range of the torque wrench. They consulted with supervision, and initiated a plant ACTION Report to document the inability to achieve check valve disc movement up to 600 ft-lbs of torque.

## II. DESCRIPTION OF EVENT:

## A. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES:

- o March 1, 1999, 1707 EST: Event Date and Time and Discovery Date and Time.
- o March 1, 1999, 1734 EST: Both main steam non-return check valves are declared inoperable.
- o March 1, 1999, 1930 EST: Engineering Technical Evaluation determines that both main steam non-return check valves are operable.
- o March 1, 1999, 2018 EST: The Plant enters Mode 4, where ITS LCO 3.7.2 is not applicable. ITS LCO 3.0.3 for the main steam non-return check valves is exited.

## B. EVENT:

On March 1, 1999, the plant was in Mode 3, cooling down to Mode 4 for a scheduled refueling outage. Both main steam isolation valves (MSIVs) were closed, as specified by the Initial Conditions for test procedure PT-2.10.15. The Performance Monitoring technicians notified the Shift Supervisor of the failure of the main steam non-return check valves to meet the closure torque acceptance criteria of test procedure PT-2.10.15.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
R.E. Ginna Nuclear Power Plant	05000244	1999	-- 003 --	00	3 OF 6

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

The Shift Supervisor reviewed ITS Limiting Condition for Operation (LCO) 3.7.2, notified the NES staff of the event, and requested an engineering technical evaluation. At approximately 1734 EST the Shift Supervisor declared both valves CV-3518 and CV-3519 inoperable based on exceeding the acceptance criteria of test procedure PT-2.10.15. As specified in ITS LCO Required Action 3.7.2.E.1, with "one or more valves inoperable in flowpath from each steam generator (SG)", immediate entry into ITS LCO 3.0.3 is required. The Shift Supervisor directed entry into ITS LCO 3.0.3 at this time.

Performance Monitoring technicians obtained a torque wrench of larger range and again attempted to achieve breakaway torque. At approximately 700 ft-lbs torque, the valve disc for CV-3518 started to close, and at approximately 900 ft-lbs torque the valve disc for CV-3519 started to close. These as-found breakaway torque values were provided to NES staff.

NES staff performed an engineering technical evaluation of this event. At approximately 1930 EST, NES staff had reviewed an engineering analysis (Design Analysis DA-ME-92-147) that had been performed previously for these valves, and determined that the as-found breakaway torque was within the bounds of the analysis. This information was provided to the Shift Supervisor.

While the valves were now capable of being declared operable, the plant continued the planned cooldown and entered Mode 4 at approximately 2018 EST on March 1, 1999. In Mode 4, ITS LCO 3.7.2 is not applicable, and ITS LCO 3.0.3 was formally exited at this time.

The entry into ITS LCO 3.0.3 as a result of declaring both CV-3518 and CV-3519 inoperable is considered to be a condition prohibited by Technical Specifications. Entry into ITS LCO 3.0.3 for any reason or justification is considered reportable per the NRC guidance in NUREG-1022 Revision 1.

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

None

## D. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:

None

## E. METHOD OF DISCOVERY:

This event was discovered by Performance Monitoring technicians who were performing a routine surveillance test during the plant cooldown.





LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
R.E. Ginna Nuclear Power Plant	05000244	1999	-- 003	-- 00	4 OF 6

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

## F. OPERATOR ACTION:

The Shift Supervisor reviewed ITS LCO 3.7.2 and declared both valves CV-3518 and CV-3519 inoperable based on exceeding the acceptance criteria of test procedure PT-2.10.15. The Shift Supervisor directed entry into ITS LCO 3.0.3 at this time. The Shift Supervisor notified NES staff of the event, and requested an engineering technical evaluation. The operators continued the process of performing a plant cooldown per operating procedure O-2.2, "Plant Shutdown from Hot Shutdown to Cold Conditions".

After the plant was in Mode 4, ITS LCO 3.7.2 was not applicable and LCO 3.0.3 was exited for the main steam non-return check valves.

## G. SAFETY SYSTEM RESPONSES:

None

## III. CAUSE OF EVENT:

## A. IMMEDIATE CAUSE:

The immediate cause of the condition prohibited by Technical Specifications was entering ITS LCO Required Action 3.7.2.E.1 for two valves inoperable, which required immediate entry into ITS LCO 3.0.3.

## B. INTERMEDIATE CAUSE:

The intermediate cause of entry into ITS LCO 3.7.2.E.1 was the decision to declare both main steam non-return check valves inoperable for exceeding the acceptance criteria of Steps 6.1.3 and 6.2.3 of test procedure PT-2.10.15.

## C. ROOT CAUSE:

The underlying cause for exceeding the acceptance criteria was changes in the methodology and materials for packing these valves, instituted during the previous outage. These changes in methodology and vendor-recommended replacement shaft bushing materials were made in order to provide improved shaft sealability and vibration mitigation, and resulted in a greater than anticipated shaft breakaway torque. Over time, during the previous plant operating cycle, heat and moisture were absorbed by the packing, which caused the shaft friction to increase to the as-found values of 700 and 900 ft-lbs, which were higher than anticipated, based on testing results from previous years.



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
R.E. Ginna Nuclear Power Plant	05000244	1999	-- 003	-- 00	5 OF 6

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

## IV. ANALYSIS OF EVENT:

This event is reportable in accordance with 10 CFR 50.73, Licensee Event Report System, item (a) (2) (i) (B), "Any operation or condition prohibited by the plant's Technical Specifications". Declaring both main steam non-return check valves inoperable resulted in entry into ITS LCO 3.0.3. Since the plant entered ITS LCO 3.0.3, this condition is reportable.

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 attributed to not meeting the acceptance criteria specified in procedure PT-2.10.15 because:

- o The acceptance criteria in test procedure PT-2.10.15 was conservatively chosen in 1992 to be well below the value calculated in Design Analysis DA-ME-92-147. This conservative value had been utilized as the acceptance criteria in test procedure PT-2.10.15, prior to defining the operability requirements in ITS SR 3.7.2.2. The engineering technical evaluation performed on March 1, 1999, determined that the as-found breakaway torque values for the non-return check valves were within this previous analysis.
- o The two MSIVs isolate steam flow from the secondary side of the steam generators (SGs) following a Design Basis Accident (DBA). Both MSIVs were closed, as specified in the Initial Conditions of test procedure PT-2.10.15, prior to initiation of the surveillance test on March 1, 1999. The MSIVs are designed to work with the main steam non-return check valves, located immediately downstream of each MSIV, to preclude the blowdown of more than one SG following a steam line break (SLB).

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:

Immediate corrective action was to declare both valves inoperable and enter ITS LCO 3.0.3. Following an evaluation of the test data by NES, it was determined that the valves were operable. The plant exited ITS LCO 3.0.3.

The plant is still in the 1999 refueling outage.

**LICENSEE EVENT REPORT (LER)**  
**TEXT CONTINUATION**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
R.E. Ginna Nuclear Power Plant	05000244	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	6 OF 6
		1999 --	003 --	00	

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**B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE:**

- o Packing gland torque for these check valves will be adjusted to a value specified by the IST Engineer. An as-found baseline breakaway torque value will be obtained for each valve during the 1999 outage.
- o The design analysis will be revised to provide acceptance criteria, both for the ASME Code degradation value and for determination of valve operability.
- o A "reference value" will be established in accordance with ASME/ANSI OM-1987 Part 10 for breakaway torque for these valves. This value will be included in a future revision to test procedure PT-2.10.15.

**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: No documentation of similar LER events with the same root cause at Ginna Nuclear Power Plant could be identified.

**C. SPECIAL COMMENTS:**

None

