

Sonny Dean
Plant General Manager

CENGSM

a joint venture of



R.E. GINNA
NUCLEAR POWER PLANT

R.E. Ginna Nuclear Power Plant, LLC
1503 Lake Road
Ontario, New York 14519-9364

585.771.5205
585.771.3943 Fax

sonny.dean@cengllc.com

December 2, 2011

U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

ATTENTION: Document Control Desk

SUBJECT: **R.E. Ginna Nuclear Power Plant**
Docket No. 50-244

LER 2011-003, Reactor Trip Due to Failure of Turbine Lube Oil Piping

The attached Licensee Event Report (LER) 2011-003 is submitted under the provisions of NUREG-1022, Event Reporting Guidelines. There are no new commitments contained in this submittal. Should you have any questions regarding the information in this letter, please contact Mr. Thomas Harding at (585) 771-5219.

Very truly yours,

A handwritten signature in black ink, appearing to read "Edwin D. Dean III".

Edwin D. Dean III

Attachments: (1) LER 2011-003

cc: W.M. Dean, NRC
D.V. Pickett, NRC
Resident Inspector, NRC (Ginna)

JE22
NRC

ATTACHMENT 1

LER 2011-003

LICENSEE EVENT REPORT (LER)
(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA/Privacy Section (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NE0B-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME **R.E. Ginna Nuclear Power Plant** 2. DOCKET NUMBER **05000 244** 3. PAGE **1 OF 4**

4. TITLE **Reactor Trip Due to Failure of Turbine Lube Oil Piping**

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	11	2011	2011	003	0	12	02	2011		05000
										05000

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)									
	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)						
10. POWER LEVEL 100%	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)						
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)						
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)						
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)						
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER							
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A							

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME Thomas Harding, Licensing Director	TELEPHONE NUMBER (Include Area Code) (585) 771-5219
--	---

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
B	TD	PSP	N/A	NO					

14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE		
	MONTH	DAY	YEAR

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

On October 11, 2011, the R.E. Ginna Nuclear Power Plant experienced an automatic reactor trip from 100% power. The trip was caused by a failure of the turbine lube oil piping internal to the turbine lube oil reservoir. The failed piping resulted in the main turbine Auto Stop Trip oil pressure switches activating on low oil pressure. The control room operators performed the appropriate actions of procedures E-0, Reactor Trip or Safety Injection and ES-0.1, Reactor Trip Response. Following the reactor trip, all safety systems operated as designed. The reactor was stabilized in Mode 3 while repairs were performed.

The cause of the piping failure was determined to be high piping stresses from original construction in combination with substandard welding, routine maintenance, and cyclical fatigue.

Corrective actions to prevent recurrence include a redesign of the piping to facilitate maintenance of associated check valves and to eliminate stress risers inherent to the original weld configuration. Additional corrective actions are summarized in section IV.B.

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

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
R.E. Ginna Nuclear Power Plant	05000244	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 4
		2011	- 003	- 0	

NARRATIVE

I. DESCRIPTION OF EVENT

A. PRE-EVENT PLANT CONDITIONS:

The reactor was in Operational Mode 1 at 100% power, 2235 psig and 574 degrees F.

B. EVENT:

On October 11, 2011 at 23:28 hours the R.E. Ginna Nuclear Power Plant experienced a Turbine and Reactor Trip. Turbine Lube Oil (TLO) piping internal to the TLO reservoir severed at the 1.5 inch branch line containing the turning gear lube oil pump discharge check valve. This caused a decrease of Auto Stop Trip (AST) oil pressure, which resulted in a turbine and reactor trip when 2 out of 3 AST pressure switches activated on the low oil pressure.

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

None

D. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES:

- 1966-1969 Original construction
- 10/1997 Inspection performed on check valves and lube oil tank. No concerns noted.
- 05/2011 Inspection performed on check valves and lube oil tank. No concerns noted.
- 06/2011 Plant startup from refueling outage
- 10/11/2011 Weld failure leads to reactor trip

Note: The TLO reservoir is drained, cleaned, and inspected routinely every refueling outage.

E. OTHER SYSTEMS OR SECONDARY FUNCTIONS AFFECTED:

None

F. METHOD OF DISCOVERY:

The turbine and reactor trips were immediately apparent due to plant response, alarms, and indications in the Control Room.

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

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
R.E. Ginna Nuclear Power Plant	05000244	YEAR	SEQUENTIAL NUMBER	REV NO.	3 OF 4
		2011	- 003	- 0	

G. MAJOR OPERATOR ACTION:

Operations entered procedures E-0, Reactor Trip or Safety Injection and ES-0.1, Reactor Trip Response and stabilized the plant in Mode 3.

H. SAFETY SYSTEM RESPONSES:

The reactor protection system operated as expected as a result of the turbine trip. Motor driven and turbine driven auxiliary feedwater pumps started on the Anticipated Transient Without Scram (ATWS) mitigation system signal. All systems operated as expected.

II. CAUSE OF EVENT:

The cause of this event is attributed to NUREG-1022 Cause Code B, Design, Manufacturing, Construction/Installation.

This event was entered into the site corrective action program (CR-2011-007076). The cause of the piping failure was determined to be high piping stresses from original construction in combination with substandard welding, normal operating conditions, routine maintenance, and cyclical fatigue.

The poor quality of the weld from initial construction created stress risers that served as the crack initiation site. Cold spring forces introduced during initial construction exerted on this short section of bent small bore piping resulted in stress near the yield strength of the pipe. Routine check valve removal and installation practices initiated a crack in the branch connection. Normal system operating vibration propagated the crack through the pipe until the pipe failed.

III ANALYSIS OF THE EVENT:

This event is reportable in accordance with 10 CFR50.73, Licensee Events Report System under item (a)(2)(iv) based on actuation of the Reactor Protection System and Auxiliary Feedwater System.

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

The reactor trip breakers opened as required and the control rods inserted as designed. Heatup and pressurization of the Reactor Coolant System (RCS) presented no significant challenge to RCS pressure control systems and no Power Operated Relief Valve (PORV) or safety valve actuation occurred. Maximum steam generator secondary side pressures were well below the atmospheric relief valve pressure setpoint. Automatic actuation of the Motor Driven and Turbine Driven Auxiliary Feedwater pumps occurred as expected due to the ATWS mitigation system on low feedwater flow signal. All auxiliary feedwater pumps performed as expected and met required flow rates.

The plant transient response is bounded by the Loss of External Electrical Load transient analyzed as part of the licensing basis described in the UFSAR.

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

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
R.E. Ginna Nuclear Power Plant	05000244	YEAR	SEQUENTIAL NUMBER	REV NO.	4 OF 4
		2011	- 003	- 0	

Based on the above considerations, the nuclear safety consequences of this event are very low.

This event impacted NRC performance indicator IE01, Unplanned Scrams per 7000 Critical Hours. This value changed from 0 to 0.9. The plant returned to Mode 1 on 10/15/2011.

IV CORRECTIVE ACTIONS:

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

Following a minor design change, repairs were performed to the piping and the system was restored to service.

B. ACTION TAKEN OR PLANNED TO PREVENT RECURRENCE

An additional set of flanges were installed in the larger connected piping to facilitate removal and reinstallation of the check valves in this location. Preventive Maintenance activities will be revised for the lube oil and seal oil systems to perform visual inspections of the welding following reassembly of piping with a similar configuration.

V. ADDITIONAL INFORMATION:

A. FAILED COMPONENT

1.5 inch branch line piping containing turning gear lube oil pump discharge check valve.

B. PREVIOUS LERS ON SIMILAR EVENTS

A review of recent Ginna events identified one similar event:

LER 2009-002, Plant Trip due to loss of Electro-Hydraulic Control System Pressure

C. THE ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) COMPONENT FUNCTION IDENTIFIER AND SYSTEM NAME OF EACH COMPONENT OR SYSTEM REFERRED TO IN THIS LER:

<u>COMPONENT</u>	<u>IEEE 803 FUNCTION IDENTIFIER</u>	<u>IEEE 805 SYSTEM IDENTIFICATION</u>
5479R Piping	CKV PSP	TD TD

D. SPECIAL COMMENTS

None