Entergy

Entergy Operations, Inc.
P. O. Box 756
Port Gibson, MS 39150

Tom Coutu
Director, Regulatory and
Performance Improvement
Grand Gulf Nuclear Station
Tel. (601) 437-7511

GNRO-2014/00012

February 13, 2014

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

SUBJECT: Primary Containment Inoperable Due to an Inadequate Surveillance Procedure Resulting in a Loss of Safety Function.
Grand Gulf Nuclear Station, Unit 1
Docket No. 50-416
License No. NPF-29

Dear Sir or Madam:

Attached is Licensee Event Report (LER) 2013-006-00 which is a final report. This report is submitted in accordance with Title 10 *Code of Federal Regulations* 50.73(a)(2)(i)(B).

This letter contains no new commitments. If you have any questions or require additional information, please contact Mr. Jeffery Seiter at 601-437-2344.

Sincerely,

Thomas Coutu

TC/jas

Attachment: Licensee Event Report (LER) 2013-006-00

CC: (See next page)

cc: with Attachment

U.S. Nuclear Regulatory Commission
ATTN: Mr. Steven Reynolds
Acting Regional Administrator, Region IV
1600 East Lamar Boulevard
Arlington, TX 76011-4511

U.S. Nuclear Regulatory Commission
ATTN: Mr. A. Wang, NRR/DORL
Mail Stop OWFN/8 G14
11555 Rockville Pike
Rockville, MD 20852-2378

NRC Senior Resident Inspector
Grand Gulf Nuclear Station
Port Gibson, MS 39150

Attachment to

GNRO-2014/00012

Licensee Event Report (LER) 2013-006-00

NRC FORM 366 (01-2014) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 01/31/2017

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 and Information Collections Branch (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, NEOB-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.

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Grand Gulf Nuclear Station, Unit 1	05000 416	1 OF 4

4. TITLE

Primary Containment Inoperable Due to an Inadequate Surveillance Procedure Resulting in a Loss of Safety Function

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
12	17	2013	2013	- 006	- 00	02	15	2014	N/A	05000 N/A
									FACILITY NAME: N/A	DOCKET NUMBER: 05000 N/A

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

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER *(Include Area Code)*
Jeffery A Seiter / Acting Manager, Regulatory Assurance	(601) 437-2344

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
D	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☑ NO				N/A

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

On December 17, 2013, at 1322 central standard time (CST) with the plant operating in Mode 1 at 100 percent thermal power, Grand Gulf Nuclear Station (GGNS) personnel utilized a procedure that was improperly revised. The event was identified at approximately 1415 CST during the performance of the surveillance when valve E51FO63, RCIC Steam Line Drywell Inboard Isolation was observed to close when a test signal was applied. This was not an expected condition, the surveillance was halted and corrective actions were commenced. The improperly revised procedure resulted in the inoperability of primary containment, a loss of safety function for primary containment and the inoperability of the Reactor Core Isolation Cooling (RCIC) system. Primary containment operability was restored at approximately 1437 CST when the breaker was closed to energize valve E51FO64, RCIC Steam Line Drywell Outboard Isolation which restored the penetration to an operable status. RCIC was Inoperable at 1415 CST and restored to an operable condition at approximately 1435 CST when valve E51FO63 was reenergized and opened. The direct cause of the event was an improper procedure revision that resulted in an inadequate procedure. The procedure was revised to be technically adequate and an extent of condition review was performed for the affected procedure writer's work. There were no adverse effects on the health or safety of the public as a result of the event.

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 01/31/2017

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 and Information Collections Branch (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, NEOB-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.

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NARRATIVE

A. REPORTABLE OCCURRENCE

This Licensee Event Report (LER) is being submitted pursuant to Title 10 Code of Federal Regulations (10 CFR) 50.73(a)(2)(v)(D) Any event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to Mitigate the consequences of an accident."

B. INITIAL CONDITIONS

At the time of discovery of the issue, the reactor was in operational mode one with reactor power at 100 percent. There were no additional inoperable structures, systems, or components at the time of discovery that contributed to this event.

C. BACKGROUND INFORMATION:

The function of the primary containment [EIIS:NH] is to isolate and contain fission products released from the Reactor Primary System [EIIS: AC] following a Design Basis Accident (DBA) and to confine the postulated release of radioactive material to within limits. The primary containment consists of a steel lined, reinforced concrete vessel, which surrounds the reactor primary system and provides an essentially leak tight barrier against an uncontrolled release of radioactive material to the environment. The secondary containment is a seismic category I structure designed to provide dilution and hold-up volume for fission products that may leak from the primary containment following a postulated accident. The secondary containment, in conjunction with operation of the standby gas treatment system (SGTS) [EIIS: BH] is designed to prevent radiological doses at the site boundary, low population zone, and control room from exceeding the limits of 10 CFR 50.67.

The Reactor Core Isolation Cooling (RCIC) System [EIIS: BN], when in a normal (standby) alignment, shall initiate and discharge a specified constant flow into the reactor vessel over a specified pressure range within a 30-second time interval. The RCIC water discharges into the reactor vessel via one of the main feedwater lines. The RCIC water replenishes reactor vessel inventory to permit adequate core cooling to take place. In accordance with technical specification basis section 3.5.3 RCIC is not part of the Emergency Core Cooling System (ECCS); however, the RCIC System is included with the ECCS section because of their similar functions. The RCIC System is designed to operate either automatically or manually following reactor pressure vessel (RPV) [EIIS: RPV] isolation accompanied by a loss of coolant flow from the feedwater system to provide adequate core cooling and control of RPV water level. Under these conditions, the High Pressure Core Spray (HPCS) [EIIS: BG] and RCIC systems perform similar function, the HPCS system also serves as a backup to the RCIC system. The RCIC System consists of a steam driven turbine pump unit, piping, and valves to provide steam to the turbine, as well as piping and valves to transfer water from the suction source to the core via the feedwater system line.

The HPCS system consists of a single motor driven centrifugal pump located outside the primary containment, a spray sparger in the reactor vessel located above the core (separate from the Low Pressure Core Spray (LPCS) sparger), and associated system piping, valves, controls, and instrumentation. The system is designed to operate from normal offsite auxiliary power or from its diesel generator supply if offsite power is not available. The system is designed to pump water into the reactor vessel over a wide range of pressures. For small breaks that do not result in rapid reactor depressurization, the system maintains reactor water level and depressurizes the vessel.

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C. BACKGROUND INFORMATION (continued):

Procedure 06-IC-1E31-Q-1016, RCIC Seam Supply Low Pressure Functional test was revised in November, 2013. The procedure was revised as a result of a condition identified in a previous performance of the test when it was discovered that the procedure did not identify the potential for the E51F031 RCIC Suppression Pool Suction Isolation valve [EIIS: ISV] to automatically go closed during testing. Following the event being reported in this licensee event report, it was discovered that the procedure writer for the November 2013 revision made a human performance error which resulted in incorrect components being included in the procedure.

D. DESCRIPTION OF OCCURRENCE

On December 17, 2013 1322 central standard time (CST) Grand Gulf Nuclear Station (GGNS) personnel were performing surveillance 06-IC-1E31-Q-1016, RCIC Seam Supply Low Pressure Functional test. During the performance of the test, at approximately 1332, the primary containment safety function was lost and Limiting Condition for Operation (LCO) 3.6.1.1, Primary Containment was not entered when the breaker for E51FO76, RCIC Steam Line Warmup valve [EIIS: BKR] was opened deenergizing the valve in the open position at the same time that valve E51FO64 RCIC Steam Line Drywell Outboard Isolation [EIIS: ISV] was denergized in the open position. This resulted in the RCIC steam supply line being inoperable for its primary containment function. This condition existed for approximately 65 minutes until at approximately 1437 CST the RCIC steam supply line penetration was restored to an operable status and the primary containment system safety function was restored.

Additionally, at time 1415, the RCIC system was inoperable due to the closing of E51FO63 RCIC Steam Line Drywell Inboard Isolation [EIIS: ISV] isolating the steam supply to the RCIC pump. This condition existed for approximately 20 minutes until at approximately 1435 when valve E51FO63 was reenergized and opened, resulting in RCIC being returned to a operable status.

The event was discovered by the Reactor Operator when valve E51FO63 went closed during the test. This valve was not supposed to go closed during the performance of the surveillance.

It was determined that the procedure was revised in November, 2013. A human performance error by the procedure writer during the November 2013 revision resulted in a technically incorrect procedure. The improper procedure revision resulted in incorrect components being included in the procedure. The incorrect components, when operated, resulted in the inoperable primary containment, loss of primary containment safety function and RCIC inoperability.

E. CAUSE

The direct cause of the event was a technically incorrect procedure that resulted in the opening of the breaker of E51FO64 valve which resulted in the inoperable primary containment and loss of primary containment safety function. Additionally, the incorrect procedure resulted in the unintentional closing of E51FO63 which caused the inoperable RCIC system.

F. CORRECTIVE ACTIONS

Upon discovery of the issue, Operations closed the breaker for E51FO64 restoring primary containment operability and closed the breaker for E51FO63 restoring RCIC system to an operable status. Procedure 06-IC-1E31-Q-1016 was revised. An extent of condition review was performed on procedures changed by the affected procedure writer. Eighteen procedures were identified as having been revised by the procedure writer. All eighteen procedures were verified correct, no additional procedure changes were required.

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NARRATIVE

G. SAFETY ASSESSMENT

This event is considered to have low safety significance. Having one primary containment piping penetration inoperable due to the associated valves denergized in the open position combined with having RCIC inoperable for a short period of time has negligible impact on the frequency of core damage. The short duration breach of primary containment due to this penetration being inoperable is further mitigated by having the secondary containment, standby gas treatment, and HPCS systems Operable. Additionally, the short duration breach of primary containment due to this penetration being inoperable combined with having RCIC inoperable with the HPCS system Operable has a negligible impact on Large Early Release Frequency as well.

During the event, no Technical Specification defined Safety Limits were challenged. Radiological Safety was not affected since there was no radiological release to the public during the events.

There was minimal impact to the safety of the public, industrial safety or radiological safety as a result of these events.

H. ADDITIONAL INFORMATION

There has been no loss of primary containment safety function as a result of an inadequate procedure in the past 3 years.