Entergy

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

Marty L. Richey
Director, Nuclear Safety Assurance
Grand Gulf Nuclear Station
Tel. (601) 437-6787

GNRO-2012/00013

March 13, 2012

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

SUBJECT: LER 2012-001-00 Surveillance Test Procedure Inadequate to meet the requirements of Technical Specifications.
Grand Gulf Nuclear Station, Unit 1
Docket No. 50-416
License No. NPF-29

Dear Sir or Madam:

Attached is Licensee Event Report (LER) 2012-001-00 which is a final report. This report is submitted in accordance with 10 CFR 50.73(a)(2)(i)(B)

This letter does not contain any commitments. Should you have any questions regarding the attached report, please call Christina L. Perino at 601-437-6299.

Respectfully,

MLR/JAS

Attachments: 1. Licensee Event Report (LER) 2012-001-00

cc: (see next page)

cc: Mr. Elmo Collins
Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
1600 East Lamar Boulevard
Arlington, TX 76011-4511

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

U. S. Nuclear Regulatory Commission
ATTN: Mr. A. B. Wang, NRR/DORL (w/2)
Mail Stop OWFN 8 B1
Washington, DC 20555-0001

Attachment
To
GNRO-2012/00013

Licensee Event Report (LER) 2012-001-00

NRC FORM 366 (10-2010) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013

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, 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 reverse 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

Surveillance Test Procedure Inadequate to meet the requirements of Technical Specifications.

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
									N/A	N/A
11	19	2009	2012	– 001	– 00	03	14	2012	FACILITY NAME: N/A	DOCKET NUMBER: N/A

9. OPERATING MODE

1

10. POWER LEVEL

100 percent

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

☐ 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)
☐ 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)
☐ 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)*
Christina Perino / Licensing Manager	601-437-6299

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
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR
N/A	N/A	N/A

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

On November 19, 2009 Grand Gulf Nuclear Station (GGNS) failed to ensure that Technical Specification (TS) Surveillance Requirement (SR) 3.5.3.1 was met. The 2009 NRC Problem Identification and Resolution (PI&R) Inspection identified a concern that there was no basis (calculation) for the two-minute venting criterion and that there was no visual means of confirming water flow through the vent line when performing venting of the Reactor Core Isolation Cooling (RCIC) system. In 2009, during review of the NRC concern, GGNS determined that the acceptance criteria of SR 3.5.3.1 was met, and that the RCIC system had successfully completed the required surveillance testing. However, as an enhancement, GGNS revised the verification procedures to require an ultrasonic test (UT) examination and commenced the engineering change process to install a permanent sightglass for the vent line. During the 2011 PI&R Inspection, a review of a previous 2009 PI&R Inspection violation determined that the acceptance criteria to satisfy TS (SR) 3.5.3.1 was inadequate which resulted in the RCIC system being inoperable for a period of time in excess of TS allowances which resulted in a condition prohibited by TS. GGNS confirmed full compliance with TS SR 3.5.3.1 by performing UT testing on February 5, 2010 which verified the piping was full of water. Because GGNS considered SR 3.5.3.1 to still be met in 2009, SR 3.0.3 was not applied at the time it was discovered that the surveillance procedure may not be adequate.

NARRATIVE

A. Reportable Occurrence

This LER is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications (TS) when it was discovered the acceptance criteria of TS Surveillance Requirement (SR) 3.5.3.1 did not fully implement the requirement.

B. Description of Structure(s), System(s) and Component(s)

As discussed in TS 3.5.3 Bases, the reactor core isolation cooling (RCIC) System (EIIS:BN) is not part of the Emergency Core Cooling System (ECCS), is not an Engineered Safety Feature (ESF) System, and is not credited in the safety analyses; however, the RCIC System is included with the ECCS TS section because of its similar functions. The RCIC System is designed to operate either automatically or manually following a reactor pressure vessel (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:BJ) and RCIC systems perform similar functions.

From the Updated Final Safety Analysis Report (UFSAR), 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. RCIC is designed to respond to transient events by providing makeup coolant to the reactor. RCIC is designed to assure that sufficient reactor water inventory is maintained in the reactor vessel to permit adequate core cooling to take place. This prevents reactor fuel overheating, should the vessel be isolated and maintained in the hot shutdown condition; or should the vessel be isolated accompanied by loss of coolant flow from the reactor feedwater system; or should a complete plant shutdown under conditions of loss of normal feedwater system be started before the reactor is depressurized to a level where the shutdown coolant system can be placed into operation.

C. Initial Conditions

The reactor was in operational mode 1 with reactor power at approximately 100 percent. There were no inoperable structures, systems, or components that contributed to this event.

D. Description of Occurrence

During the 2011 NRC PI&R Inspection at GGNS, the NRC reviewed a previous 2009 NRC PI&R Inspection non cited violation concerning whether a procedure was sufficient to meet a TS SR. SR 3.5.3.1 requires a monthly verification that the Reactor Core Isolation Cooling (RCIC) system piping is filled with water from the pump discharge valve to the injection valve. The procedure allowed the SR to be considered met after a vent of two minutes was performed. The NRC questioned in 2009, whether the procedure was sufficient to meet the TS SR because there was no visual means of confirming water flow through the vent line when performing venting of the RCIC system. During the 2011 PI&R Inspection, it was determined that the acceptance criteria to satisfy TS (SR) 3.5.3.1 was inadequate and that in November 2009, when

NARRATIVE

Description of Occurrence (continued)

the NRC first raised the RCIC venting concern, GGNS provided a bases (calculation) for the venting but failed to determine whether the surveillance acceptance criteria was adequate. In 2009, GGNS determined that the surveillance was satisfactorily performed, however, as an enhancement to the procedure, Surveillances 06-OP-1E51-M-0001 (RCIC System Operability Verification) and 06-OP-1E51-Q-0003 (RCIC System Quarterly Pump Operability Verification) were revised to incorporate ultrasonic testing (UT) to ensure the piping was full of water.

In 2009, GGNS did not identify this procedure as an inadequate surveillance test and considered the TS SR met and that the RCIC system had successfully completed the required surveillance testing. As GGNS did not consider this an inadequate surveillance, GGNS failed to utilize TS SR 3.0.3 to address the inadequate TS surveillance as a missed surveillance. TS SR 3.0.3 states that if the surveillance was not performed within an allowed delay period, the limiting condition for operation (LCO) must immediately be declared not met. The LCO was not declared not met for this condition. LCO 3.5.3 requires the RCIC system to be operable in mode 1 and in modes 2 and 3 with reactor steam dome pressure greater than 150 psig. The TS Actions for an inoperable RCIC system require verification within 1 hour that HPCS is operable and restoration of RCIC to operable status within 14 days. If those Actions are not met, then the plant must be placed in mode 3 with reactor pressure less than 150 psig. There were limited occasions where the HPCS system was inoperable for maintenance resulting in other TS required actions to be entered for those situations.

GGNS performed UT testing February 5, 2010 which verified the piping was full of water and restored full compliance with TS SR 3.5.3.1.

E. Cause of Occurrence

The cause of the occurrence was an inadequate surveillance procedure acceptance criterion which resulted in the requirements of SR 3.5.3.1 not being met.

The contributing factor was the lack of technical rigor in evaluation of a potential inadequate surveillance procedure.

F. Corrective Actions

1. When identified in the 2009 PI&R Inspection, Surveillance 06-OP-1E51-M-0001 (RCIC System Operability Verification), and 06-OP-1E51-Q-0003 (RCIC System Quarterly Pump Operability Verification) were revised to incorporate UT to verify the piping was full of water.

2. UT testing of the affected piping was performed to verify piping was full of water.

The corrective actions were developed as required by the GGNS Corrective Action Program under Condition Report (CR) GGN-2009-6249 on November 24, 2009 and were implemented on February 5, 2010 for the UT testing and March 17, 2010 for the procedure changes.

G. Safety Assessment

RCIC is credited in the Control Rod Drop Accident (CRDA) and is an ESF system for this event only. The rod pattern controller (EIIS:AA) and reactor protection system (RPS) (EIIS:JC) average power range monitoring (APRM)(EIIS:IG) flux scram are the mitigating functions credited in the CRDA (short-term). Core cooling is required for long-term mitigation of this accident (decay heat removal). The available core cooling systems are RCIC and HPCS. RCIC is also the only system available for providing cooling water to the core in the event of a station black out (SBO) and is used to demonstrate GGNS compliance to 10 CFR 50.63 requirements.

At no time during this issue resolution was RCIC unable to perform its safety function. The RCIC system has successfully completed the required surveillance runs. The RCIC surveillance running from condensate storage tank (CST) to CST would have been ideal conditions for the formation of an isolated bubble at the injection valve to cause pressure oscillations due to the RCIC system running in this mode. An evaluation done for condition report (CR) CR-GGN-2007-03818 determined there was enough pressure from the CST to prevent gas from disassociating from the water and analysis indicated that two minute vent time was enough time to vent the RCIC discharge line volume from the pump discharge check valve to the injection valve. The system surveillance testing was performed per procedure and the system is vented every 31 days. As explained above, the two minute vent time was adequate to ensure the RCIC discharge piping at the injection valve was adequately vented and the condition would not have prevented the fulfillment of a safety function.

There were no actual adverse safety consequences as a result of this condition.

H. Additional Information

Previous Occurrences - There has not been any occurrence of a failure to submit an Licensee Event Report (LER) in the past three years at Grand Gulf Nuclear Station involving reportability under 10CFR50.73(a)(2)(i)(B) or involving these same conditions.