Entergy

Entergy Operations, Inc.
7003 Bald Hill Road
P.O. Box 756
Port Gibson, MS 39150
Tel 601 437 6299

Christina L. Perino
Manager
Licensing

GNRO-2012/00108

September 14, 2012

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

SUBJECT: Licensee Event Report 2012-007-00 Standby Service Water System Administratively Inoperable For A Period Longer Than Allowed By 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) 2012-007-00 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 this report, please call Christina L. Perino at 601-437-6299.

Sincerely,

CLP/ras

Attachment: Licensee Event Report (LER) 2012-007-00

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-2012/00108

Licensee Event Report (LER) 2012-007-00

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

Standby Service Water System Administratively Inoperable For A Period Longer Than Allowed By 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	
									N/A	N/A
07	19	2012	2012	– 007 –	00	09	14	2012	N/A	N/A

9. OPERATING MODE

1

10. POWER LEVEL

100

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 L. 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
A	BI	N/A	N/A	N	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 August 18, 1987, a 10 CFR 50.59 safety evaluation was performed for a change to the Grand Gulf Nuclear Station (GGNS) Final Safety Analysis Report (FSAR) to relax methodology for single passive failures of Standby Service Water (SSW) components. On July 19, 2012, with the plant in Mode 1 at approximately 100% pre-extended power uprate power, during the 2012 Component Design Basis Inspection (CDBI), the Nuclear Regulatory Commission (NRC) reviewed FSAR change NPEFSAR 87/0067 and determined prior NRC approval of the change was required. SSW was administratively inoperable for a period longer than allowed by technical specifications due to relaxation of the passive failure methodology without prior NRC approval.

The event posed no threat to public health and safety as there have been no passive failures which have challenged operability. Compensatory measures have been implemented and a request to revise the SSW passive failure methodology has been submitted to the NRC. Procedures are in place to prevent recurrence.

NARRATIVE

A. Reportable Occurrence

This Licensee Event Report (LER) is being submitted pursuant to 10 CFR 50.73(a)(2)(i)(B) as an operation or condition prohibited by Technical Specifications.

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

In accordance with the Grand Gulf licensing basis and as stated in the Grand Gulf Final Safety Analysis Report (FSAR), the Standby Service Water (EIIS:BI) system was designed to provide a continuous flow of cooling water to those systems and components necessary for plant safety either during normal operation or under abnormal and accident conditions. During accident conditions, the Standby Service Water (SSW) system must provide the cooling water necessary to allow the engineered safety features to perform their intended function.

C. Initial Conditions

The reactor was in Mode 1 at approximately 100% pre-extended power uprate (EPU) power. Although the SSW system was administratively inoperable since 1987, there have been no passive failures which have challenged operability.

D. Description of Occurrence

The operation or condition prohibited by Technical Specifications resulted from modifying the single passive failure criterion to restrict passive failures to pump seal leakage and valve packing failures for the SSW components from the Grand Gulf Nuclear Station (GGNS) Final Safety Analysis Report (FSAR) in 1987 without prior Nuclear Regulatory Commission (NRC) approval. The SSW system was administratively inoperable since 1987 when an inappropriately performed 10 CFR 50.59 evaluation was put in place to change the definition of a passive failure.

During the 2012 Component Design Basis Inspection (CDBI) at GGNS, the NRC reviewed the 10 CFR 50.59 safety evaluation performed for FSAR change dated August 18, 1987 per NPEFSAR 87/0067. This change affected FSAR Section 9.2.1 in removing detail for single passive failures for SSW components.

The inspection team noted that the responses to questions 1 and 2 in the evaluation provided justification (in part) from NUREG-0138 and SECY-77-439 for the "NO" responses. Justification concluded that no increase in probability of occurrence or consequences of an accident previously evaluated in the FSAR would occur. The "NO" responses allowed changes to be made without prior NRC approval.

Description of Occurrence (continued)

NUREG-0138 and SECY 77-439 conclude that the implementation of the single failure criterion does not require significant ruptures of moderate energy piping subsequent to a Loss Of Coolant Accident (LOCA), as this combined event would be extremely unlikely. The 10 CFR 50.59 safety evaluation used the NUREG and SECY documents to justify making changes to FSAR Section 9.2.1. These changes revised the methodology for postulating single phase failures of the SSW system to state that credible passive SSW failures that can result in a loss of fluid post-accident, are limited to pump seal or valve seal leakage, not rupture of SSW system piping.

E. Cause of Occurrence

The apparent cause for this issue is misapplication of industry documents that were used for justification in the 10 CFR 50.59 safety evaluation due to lack of understanding their applicability.

The NUREG-0138 document did not specifically address single passive failures for systems such as the SSW System at GGNS. These documents were based on single passive failures of Emergency Core Cooling Systems (ECCS). Therefore, it would be appropriate to respond with a "YES" answer to questions 1 and 2 in the safety evaluation which would have required prior NRC approval before these changes were made to the GGNS FSAR.

This issue is considered a latent human performance error from 1987.

F. Corrective Actions

A Request has been submitted to the NRC seeking approval of changes to the SSW passive failure methodology.

An extent of condition sample review of safety evaluations to identify any similar misapplication of industry documents such as a SECY or NUREG is being conducted.

G. Safety Assessment

The event posed no threat to public health and safety as the SSW system was determined to be Operable with Compensatory Measures in place. Prior to implementation of the Compensatory Measures, there were no passive failures which challenged operability.

Safety Assessment (continued)

Probabilistic Risk Assessment (PRA) determined that, when combined with the annual frequency associated with a large LOCA, as defined in PRA-GG-01-001S06, the likelihood of SSW failure during the 24 hour period after a LOCA is 7.95E-10/year for pipe ruptures.

Currently, GGNS utilizes flow differential instrumentation between the SSW discharge and return to detect leakages greater than 1200 gallons per minute (gpm). For leakages less than 1200 gpm, an Off Normal Event Procedure (ONEP) for low SSW basin level has been created.

Compensatory actions provide system leakage monitoring, make-up water addition instructions, and guidance for locating and isolating system leaks that would cause losses beyond evaporative losses.

The actions in the ONEP are adequate to maintain SSW A and SSW B operable by managing system inventory loss.

H. Additional Information

Since August 1987, the safety evaluation process has gone through many changes and improvements. Procedural guidance has evolved from a single site to a fleet process. Significant improvements have been made to the training program for 10 CFR 50.59 Evaluations. Industry experience has improved the process through application of NEI 96-07, "Guidelines for 10 CFR 50.59 Evaluations." From review of process improvements since 1987, no additional improvements are identified from evaluation of this issue.

I. Previous Occurrences

There have been no previously identified revisions to the GGNS FSAR without prior NRC approval in which prior NRC approval was required due to similar misapplication of industry documents such as a SECY or NUREG. Additionally, there have been no passive failures that have challenged operability.