Entergy

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Christina L. Perino
Manager
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GNRO-2012/00090

August 23, 2012

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

SUBJECT: Special Report 2012-006-00 Special Nuclear Material Inventory Discrepancy

Grand Gulf Nuclear Station, Unit 1
Docket No. 50-416
License No. NPF-29

Dear Sir or Madam:

Attached is Special Report 2012-006-00 submitted via the Licensee Event Report (LER) form in accordance with NUREG-1022 section 5.1.6, which is a final report. This report is submitted in accordance with 10 CFR 20.2201(b).

This letter does not contain any commitments. Should you have any questions regarding this report, please call Robert W. Carroll at 601-437-2483.

Sincerely,

CLP/ras

Attachment: Special Report 2012-006-00

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-2012/00090

Special Report 2012-006-00

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)

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4. TITLE

Special Nuclear Material Inventory Discrepancy

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	25	2012	2012	- 006 -	00	08	23	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)	Special Report

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
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 July 25, 2012, at 1534 hours Central Daylight Time (CDT), the determination was made that a Source Range Monitor (SRM) detector was not in its expected storage location, thus meeting the reporting criteria in 10 CFR 72.74 and 10 CFR 74.11 as a loss of special nuclear material. The SRM detector contained an estimated maximum activity of 0.187 microcuries (all isotopes, including U-235), thus meeting the reporting criteria in 10 CFR 20.2201 (a) (1) (ii) as a loss of licensed material of a quantity greater than ten times that specified in Appendix C to 10 CFR Part 20. According to special nuclear material (SNM) inventory sheets, the SRM detector was expected to be stored in an SNM Item Control Area (ICA) on the 208 foot elevation of the Auxiliary building. However, during performance of the annual physical inventory of SNM, the SRM detector could not be located. Subsequent investigation concluded that the SRM was removed from the 208 Auxiliary building SNM ICA during clean up at the end of Refueling Outage 18, along with other material that was stored in the area, and discarded as radioactive waste.

The event posed no threat to public health and safety as the detector was not highly irradiated (not in the reactor core during reactor startup) and was controlled as radioactive waste.

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NARRATIVE

A. REPORTED CONDITION

On July 25, 2012, at 1534 hours Central Daylight Time (CDT), Grand Gulf Nuclear Station (GGNS) was in Mode 1 operating at approximately 100 percent power. During performance of the annual physical inventory of special nuclear material (SNM), the determination was made that a source range monitor (SRM) detector, serial number 10F007J5, was not in its expected storage location. While the investigation concluded that the SRM was likely removed from the 208 foot elevation Auxiliary building temporary Item Control Area (ICA) location during cleanup at the end of Refueling Outage 18 (RF18), along with other material that was stored in the area, and discarded as radioactive waste, this condition is being reported in accordance with 10 CFR 20.2201 (a) (1) (ii) as a loss of licensed material of a quantity greater than ten times the quantity specified in Appendix C to 10 CFR Part 20. Telephone notification was made on July 25, 2012, to the Nuclear Regulatory Commission (NRC) Emergency Notification System (ENS) pursuant to 10 CFR 72.74, 10 CFR 74.11, and 10 CFR 20.2201 (a) (1) (ii). This written report is being submitted within 30 days of the telephone notification in accordance with 10 CFR 20.2201(b).

B. DESCRIPTION OF LICENSED MATERIAL INVOLVED

SRM detector 10F007J5 was originally received on site November 2011. The SRM was installed during RF18 in the Spring of 2012 and subsequently failed testing. Therefore, the SRM detector was removed April 2012 and was not in the reactor core during startup. It was determined that the detector was placed into storage until it was identified missing July 25, 2012. The SRM detector is a sealed fission chamber containing uranium oxide (solid UO_2) material. Based on the original Shipper's Certification for Radioactive Material, the SRM detector contained an estimated maximum total activity of 0.187 microcuries (all isotopes, including U-235) and 0.00292 grams total Uranium.

C. CIRCUMSTANCES UNDER WHICH THE LOSS OCCURRED

In April 2012, SRM detector 10F007J5 was moved to core location 50-31 (Source Range Monitor 'C' location) per SNM Tracking Sheet (STS) STS-1-19-10, step 41, during RF18. Subsequently, it was discovered that the SRM had failed testing. Prior to drywell closeout, during RF18, the defective detector was moved from the core to a temporary SNM ICA storage area on 208 foot elevation of the Auxiliary building, per SNM Tracking Sheet STS-1-19-10, step 47 and placed into a radioactive material bag in a normally locked storage cage.

During performance of the 2012 annual SNM physical inventory, a discrepancy between the SNM database and physical inventory was discovered regarding the location of SRM detector 10F007J5 (reference CR-GGN-2012-09405).

D. DISPOSITION OF LICENSED MATERIAL INVOLVED

Based on the investigation, review of inventory results, and interviews with responsible personnel, it was concluded that SRM detector 10F007J5 was removed from the 208 foot elevation Auxiliary Building SNM ICA during cleanup at the end of RF18, along with other material that was stored in the area, and discarded as radioactive waste.

The 2012 SNM inventory sheets have been reconciled with the physical SNM inventory, and appropriate notifications and reports have been made.

E. EXPOSURES

SRM detector 10F007J5 contained a maximum total activity of approximately 0.187 microcuries (all isotopes) and 0.00292 grams total Uranium. The licensed material in the detector that could not be accounted for, was inside the detector that was properly handled as a device containing radioactive material. Since the detector containing the licensed material was maintained in the controlled waste process stream (i.e., packaging, transportation, and disposal of radioactive materials), no unregulated exposures occurred to persons in unrestricted areas. In addition, given that the detector was not highly irradiated (not in the reactor core during reactor startup), its contribution to the dose received by any radiation workers involved in the waste handling process was negligible.

F. ACTIONS TAKEN TO RECOVER THE MATERIAL

A thorough inspection of potential detector storage locations was conducted, and historical SNM-related documentation was reviewed. A detailed search plan was developed and areas to be searched prioritized based on likelihood of locating the missing SNM. The 208 foot elevation Auxiliary building radioactive material storage area search included removal of all RF18 material and performance of detailed housekeeping within the caged storage area. The trash located in the Energy Solutions sea-land located behind the Radwaste building was removed, sorted and searched. A search of the radioactive material (RAM) tool storage and control rod drive (CRD) rebuild room on 166 foot elevation Auxiliary building was performed. The RAM storage area on 185 foot elevation Auxiliary building, hot machine shop on 93 foot elevation Turbine Building, and the 93 foot elevation Radiation Protection equipment storage area were also searched. The trash in Energy Solutions sea-land ESUU 200787 located near the mausoleum was searched and no bagged trash was found. Finally, an Entergy Radiation Protection Specialist performed a search for the SRM at the Disposal Facility. The missing SRM was not located.

Based on the investigation, it was concluded that SRM detector 10F007J5 was removed from the 208 foot elevation Auxiliary Building SNM ICA during clean up at the end of RF18, along with other material that was stored in the area, and discarded as radioactive waste.

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NARRATIVE

G. PROCEDURES OR MEASURES TO ENSURE AGAINST RECURRENCE

The ICA storage location was locked and additional signage installed. Corrective action to preclude recurrence is to revise procedure 17-S-02-300 to include Reactor Engineering STS sign-off steps for briefing the requirements for posting, segregation, and identification of SNM and ICAs, and for completion of the SNM transfer, verifying proper SNM and ICA identification, posting, and segregation. Condition Report CR-GGN-2012-09405, initiated July 25, 2012, requires a Root Cause Evaluation which will address any additional actions to preclude recurrence of similar events.