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U. S. Nuclear Regulatory Commission
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Washington, D. C. 20555-0001

Vogtle Electric Generating Plant, Units 1 & 2
Response to Preliminary White Finding from NRC Inspection Report
05000424/2014009 and 05000425/2014009

References:

1. NRC letter to Southern Nuclear Operating Company, "Vogtle Electric Generating Plant, NRC Inspection Report Number 05000424/2014009 and 05000425/2014009, Preliminary Greater than Green Finding and Related Apparent Violation", dated January 22, 2015

Ladies and Gentlemen:

In Reference 1, the Nuclear Regulatory Commission (NRC) identified a preliminary White finding for an event in which a High Integrity Container (HIC) containing a Type B quantity of radioactive waste was erroneously loaded into a Type A shipping cask and transported to a waste processor.

Southern Nuclear Operating Company (SNC) agrees with the NRC on the facts regarding the finding in the letter. SNC understands the importance of safely shipping radioactive materials in accordance with regulatory requirements. Appropriate corrective actions have been taken to address the causes for the identified condition.

By letter dated January 30, 2015, SNC informed the NRC that a regulatory conference was not requested and that a written response would be provided to submit our perspectives on the finding. The enclosure to this letter provides the response. SNC appreciates the opportunity to provide its perspectives in support of the NRC's final determination.

This letter contains no NRC commitments. If you have any questions, please contact George Gunn at (706) 826-3596.

Respectfully submitted,



B. Keith Taber
Site Vice President – Vogtle 1 and 2

BKT/jkb/lac

Enclosure: Response to Preliminary White Finding from NRC Inspection Report

cc: Southern Nuclear Operating Company
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Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer
Mr. D. R. Madison, Vice President – Fleet Operations
Mr. M. D. Meier, Vice President – Regulatory Affairs
Mr. B. K. Taber, Vice President – Vogtle 1 & 2
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U. S. Nuclear Regulatory Commission
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Mr. R. E. Martin, NRR Senior Project Manager – Vogtle 1 & 2
Mr. L. M. Cain, Senior Resident Inspector – Vogtle 1 & 2

**Vogtle Electric Generating Plant, Units 1 & 2
Response to Preliminary White Finding from NRC Inspection Report
Numbers 05000424/201402 and 05000425/2014009**

Enclosure

Response to Preliminary White Finding from NRC Inspection Report

On June 24, 2014, a Type A shipping cask containing a Type B quantity of radioactive waste was shipped by Southern Nuclear Operating Company (SNC) from the Vogtle Electric Generating Plant (VEGP), Units 1 and 2, to the Energy Solutions radioactive waste processing facility located in Barnwell, South Carolina. The serial number of the High Integrity Container (HIC) containing the spent resin was not verified when it was removed from its storage process shield and placed into the shipping cask, with the result that in this singular case, a HIC with a Type B quantity of spent resin requiring a Type B shipping cask was transported in a Type A shipping cask.

NRC Finding Summary

In Reference 1 the NRC concluded that:

A self-revealing, preliminary White, AV of Technical Specification (TS) 5.4.1., Procedures, occurred on June 24, 2014, when a Type A shipping cask containing Type B radioactive waste (spent resin) was shipped by Southern Nuclear Operating Company (SNC) from the Vogtle Electric Generating Plant (VEGP), Units 1 and 2, to the Energy Solutions radioactive waste processing facility located in Barnwell, South Carolina. The serial number of the High Integrity Container (HIC) containing the spent resin was not verified when it was removed from its storage process shield and placed in the shipping cask, with the result that a HIC with a Type B quantity of resin was transported in a Type A shipping cask. This error resulted in multiple violations of NRC and Department of Transportation (DOT) regulations, which are included in Enclosure 2. The licensee entered the event in the corrective action program (CAP) as condition report (CR) 831652. Immediate corrective actions included suspension of radioactive waste shipments at Southern Nuclear Operating Company (SNC) facilities, and requalification of plant Vogtle radioactive shippers and oversight personnel.

The licensee's failure to document the location of radioactive waste stored in the process shields, as required by licensee procedure 46111-C, "Storage of Radwaste in Outdoor Process Shields," was a performance deficiency (PD). The PD was more than minor because it was associated with the public radiation safety cornerstone attribute of Program & Process (transportation program), and adversely impacted the cornerstone objective of ensuring adequate protection of public health and safety from exposure to RAM released into the public domain. A Type B quantity of material left the licensee's facility and entered the public domain in an inadequate (Type A) container. The inspectors determined this finding has a cross-cutting aspect [ø] in the Documentation component of the Human Performance area, because the licensee did not create and maintain complete, accurate, and up-to-date documentation used in preparing shipments of radioactive waste.

SNC Response

The NRC has proposed a preliminary White finding in connection with this event. SNC agrees with the NRC on the facts regarding the finding. In summary, during shipment, the exterior radiation levels of the cask did not exceed what would be expected of a normal Low Specific Activity (LSA) shipment, and there was no breach of the container. Thus there was very low additional public risk from this shipment compared to a normal LSA shipment.

Description of Event

On June 11, 2014, a High Integrity Container (HIC) was prepared for shipment with what was expected to be a Type A quantity of radioactive waste from VEGP to Energy Solutions, a radioactive waste processor located in Barnwell, South Carolina. The HIC intended for shipment was S/N #003698-19, which was assumed by Radiation Protection (RP) staff to be in Process Shield #10 based on data sheets showing HIC locations. However, in the course of a program of resampling HICs for possible waste reclassification, some HICs had been relocated to different process shields without completion of new data sheets. In preparation for shipment, Process Shield #10 was opened, the top of the HIC was surveyed, and then the HIC was removed from the process shield and placed into a Type A shipping cask, without verifying the HIC serial number.

On June 23, 2014, the loaded DOT 7A Type A shipping cask was surveyed. External dose rates on the Type A cask met all transportation requirements of 49 CFR 173.441 and the shipping documentation was prepared. On June 24, 2014, the cask was transported to the Energy Solutions Barnwell Processing Facility. On June 25, 2014, Energy Solutions informed SNC that the HIC they had received was not S/N #003698-19 as indicated on the shipping manifest, but was actually S/N #605163-02. On June 26, 2014, SNC personnel traveled to Energy Solutions in Barnwell and confirmed that an incorrect HIC had been shipped.

Upon investigation by SNC, it was found that HIC S/N #605163-02 contained a Type B quantity of radioactive waste (spent resin) which required shipment in a Type B cask. Upon survey of the HIC at the Barnwell facility, it was determined by Energy Solutions and SNC personnel to have an unshielded 3 meter dose rate of 1.3 Rem/hour, measured from the bottom of the HIC. This dose rate exceeded the limits described in 49 CFR 173.427(a)(1) for a radioactive material package to be shipped as Radioactive Material LSA/SCO. The unshielded dose rate also exceeded the criterion for exemption in 10 CFR 71.14(b)(3)(i). Therefore, a shipping cask certified by the NRC (Type B shipping cask) should have been utilized for transportation of the HIC.

Risk Considerations

Incorrect Package Type for Shipment

The regulatory requirement for shipping Type B radioactive waste/material as LSA in a Type A shipping package is that the unshielded waste/material (in this case a HIC) cannot exceed a dose rate of 1.0 rem/hour at 3 meters. Otherwise, it must be transported in a certified Type B shipping package. The waste shipped from Plant Vogtle had a measured dose rate of 1.3 rem/hour at 3 meters (unshielded), which exceeded the regulatory requirement. The exterior surface dose rate with the loaded and assembled Type A shipping package was measured to be 10 mrem/hour on contact, which is what would be expected for Type A waste in a Type A cask. The Department of Transportation regulatory limit for contact dose rate on the exterior of the package (cask) is 200 mrem/hour. The SNC administrative limit is 160 mrem/hour. The actual exterior dose rate on the shipping cask from Plant Vogtle was very low and posed very low risk to the public.

The cask used for the shipment was previously rated as a Type B cask. However, this license expired as a result of regulatory changes. The cask was reclassified as a Type A cask as it does not fully meet the current criteria for a Type B cask. This cask provided additional structural features and a higher level of shielding as compared to a typical Type A cask. This higher level of shielding and protection combined with the very low measured contact dose rate resulted in very low risk to the public.

Due to the low actual dose rate and the additional structural integrity and shielding of the cask used for the shipment, SNC concluded that the risk to the public from this shipment was very low during transport.

Corrective Actions

Radioactive waste shipping activities across the SNC fleet were suspended pending review of this event and implementation of fleet-wide corrective actions. A detailed review of radioactive waste shipping procedures was performed with radioactive waste shipping personnel across the fleet to ensure alignment and weaknesses were addressed at all sites. SNC has completed an Apparent Cause Determination and will perform a Root Cause Determination. The following immediate corrective actions have been completed:

- Oral boards were conducted with radioactive waste shipping personnel to assess and coach standards and behaviors. Emphasis was placed on human performance tool usage. Training emphasized that signature on the shipping manifest certifies that the material has been properly classified, packaged and labeled and is in proper condition for transportation according to applicable regulation.
- Oral boards were also performed with RP supervisory personnel to ensure oversight roles are clearly understood, and supervisory oversight is required on all high risk radiological activities.

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- A peer review for the next waste shipment was conducted by Plant Farley and Corporate qualified RP Waste Shippers. The peer review entailed having additional oversight at Plant Vogtle to ensure the shipment was packaged and surveyed appropriately and independently verified to be correct.
- Radioactive waste/material shipment procedures were revised to require visual verification of the HIC serial number, with a verification step added to the cask and HIC inspection checklist. Procedure revisions also enhanced the inventory control of liners.
- A fleet Focused Area Self-Assessment (FASA) of RP Radwaste was performed and determined the corrective action measures to be effective. The FASA team was composed of Southern Nuclear Corporate and Plant Vogtle station RP personnel and also included industry peers.
- The ALARA Briefing record for the HIC loading Radiation Work Permit was revised to require verification of the liner serial number, verification of the correct process shield location, and designation of individuals by name to perform the verification tasks. Approval by the Fleet RP Manager and Site Plant Manager was required prior to resumption of radioactive waste shipping. Radioactive waste shipping for VEGP was resumed on September 5, 2014.

Conclusion

SNC agrees with the NRC that a performance deficiency occurred. SNC understands the high importance of safely shipping radioactive materials consistent with regulatory requirements. SNC has completed an Apparent Cause Determination and will perform a Root Cause Determination. Immediate corrective actions have been completed to address the deficiency. Additional corrective actions may emerge from the Root Cause investigation. The cask used provided additional structural features beyond those of a typical Type A cask. During shipment, the exterior radiation levels of the cask did not exceed what would be expected of a Type A shipment.