

Plant: Farley <input type="checkbox"/> Hatch <input type="checkbox"/> Vogtle <input checked="" type="checkbox"/>	Unit No. 1 <input type="checkbox"/> 2 <input type="checkbox"/> Shared <input checked="" type="checkbox"/>
Activity/Document No.: RER A071430001 <small>(Act./Doc. Initiating the Change)</small>	10 CFR 50.59 Version No.: 1.0
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Title: Interim Onsite Storage Facility for Low Level Radioactive Waste (LLW)	


A. Activity Summary

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PRB Approval or Meeting No.:	<u>2008-32</u> <small>Print / Signature or PRB Meeting No.</small>		Date: <u>4/25/08</u>

PRB Meeting No. (if applicable and not identified above):

Description/Background:

Currently Vogtle has its low level radioactive waste (LLW) disposed at the Barnwell, South Carolina site. This LLW is composed primarily of spent resins and cartridge filters. The Barnwell facility is scheduled to close and will not be available for Vogtle's use after June 30, 2008. At this time, there are no other facilities licensed to receive Class B and C wastes. The absence of a facility for the permanent disposal of Class B and C LLW will mandate the storage of these wastes onsite until such time as permanent disposal becomes available. Currently, the Energy Solutions' Clive, Utah facility is licensed to receive and dispose of Class A LLW and it is anticipated that Class A LLW will be shipped to this facility for disposal as opposed to being stored in the Vogtle LLW facility, to the extent practicable and consistent with sound business judgment. LLW classified as Greater than Class C (GTCC) is waste that is not generally suitable for disposal in a near-surface burial facility. Currently, there is not a geological repository for storage of GTCC waste. In the absence of a geological repository, this LLW must also be stored onsite pending NRC licensing of a geological repository. Consistent with the guidance of NUREG-0800, Appendix 11.4A, SNC will dispose of LLW when NRC-licensed facilities are available to receive Class B, C, and GTCC LLW.

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The LLW storage facility for Vogtle Units 1 & 2 will be installed under MDC 2080418001. This RER provides design input for this MDC. Consistent with the classifications described in 10 CFR 61.55, LLW includes Class A, Class B, Class C, and Greater than Class C (GTCC) wastes. This facility will store volume reduced resin (resin residue), dewatered resins awaiting shipment to a vendor for volume reduction, nonflammable filters, and irradiated components. To avoid degradation of the containers and minimize the potential generation of flammable/explosive gases, storage of dewatered resins will be minimized to the extent necessary to accumulate sufficient resins that when processed, result in a full container of volume-reduced stabilized resins suitable for long-term storage. LLW stored in the Vogtle LLW storage facility does not include liquid, flammable, or mixed waste. The Vogtle LLW facility is not licensed in accordance with the provisions of Part 72 and therefore, will not be used as an independent spent fuel storage installation (ISFSI) for storage of high level waste (i.e., spent nuclear fuel).

The Vogtle LLW storage facility will be located outside of the Protected Area (PA) in the Owner Controlled Area (OCA), West and North of the Unit 2 cooling tower. The storage facility will be enclosed by an eight foot high fence with locked gates and will be provided with area lighting. The storage of LLW will be in high-integrity containers (HICs) or other suitable containers that are designed for a 300-year life under the radiological and environmental conditions present at the LLW facility. The HICs or other suitable container will be equipped with special vent designs that allow depressurization without the migration of radioactive materials. These containers, in turn, will be stored within shielded environmental containers (SECs) to provide appropriate shielding and normal environmental protection. The design, construction, inspection, and operation of the storage facility will comply with the guidance of documents as identified in the body of this evaluation which is consistent with NUREG-0800, Appendix 11.4-A (Reference 8) and EPRI draft report dated January 25, 2008 (Reference 4).

50.59 EVALUATION


This 50.59 evaluation has been prepared to document the assessment of the impact of the design, construction and use of the Vogtle LLW storage facility.

With the exception of dewatered resins, the storage period for LLW in this facility is indefinite at this time pending NRC licensing of a suitable disposal facility. Storage of dewatered resins is intended to provide interim storage of these resins pending processing the contents of several waste containers of dewatered resins into stabilized resins. Storage of dewatered resins will be administratively controlled as necessary to minimize container degradation and potential generation of flammable/explosive gas.

As stated above, storage of low level radioactive waste will be in HICs or other suitable containers that are designed for a 300-year lifetime for the radiological and environmental conditions present. The HICs will be stored in SECs to provide appropriate shielding and normal environmental protection. The integrity of the HICs will be monitored periodically using plant procedures. This includes, but is not limited to, a periodic inspection of container integrity by sampling the airspace between the HIC and the SEC for water or gases, and dose rate monitoring external to the SEC. The LLW storage facility will be surrounded by a chain link fence with locked access and will be under the direct control of the Health Physics Department as a Radiation Control Area (RCA)/Radioactive Material Storage Area.

1. Radiation Dose Rate:

The LLW Storage facility is designed to store LLW while maintaining radiation exposure to plant personnel as low as reasonably achievable (ALARA). This will be performed in accordance with GDC 60 of 10 CFR 50, Appendix A, and Regulatory Guide 8.8 in order to maintain personnel exposures below 10 CFR 20 requirements as described in FSAR 11.4.1 and FSAR 12.1. The concrete slab size

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below 10 CFR 20 requirements as described in FSAR 11.4.1 and FSAR 12.1. The concrete slab size will be 88' x 88' and is intended for storage of up to thirty six (36) HICs/SECs. Review of drawing AX1D16A01 confirms the availability of an adequate space for installing a 168' x 168' fence around this slab. This will provide 40 feet clearance around the slab to ensure that the dose rate at the facility fence is less than 0.25 millirem per hour, as required by FSAR 12.4.1.1 and Table 12.3.1-1 for Zone I. Access to this facility will require entry through the security gate to the OCA and then entry through a locked gate at the LLW storage facility. The distance to the OCA boundary from the storage pad is more than 2200 feet. Based on review of calculation X6CDD.46 (Reference 7) the dose rate to the general public will be less than 100 millirem per year and will not exceed 2 millirem per hour. The slab size will allow SECs to be stored at a minimum distance of five feet from the edge of the slab. This will reduce the dose rate at the fence and also allow room for additional shielding if required to maintain the dose rate at the fence less than or equal to 0.25 millirem per hour. To restrict worker exposure during container inspections, transportation or transfer into or out of SECs, HICs will be shielded by either a transfer bell mechanism or radwaste shipping cask per plant procedures. The proposed LLW storage facility will be periodically patrolled by plant security roving patrols.

2. Flood Protection:


The LLW storage facility is located in an area that minimizes the probability of flooding the containers. The area is graded to ensure that the drainage is away from the LLW storage facility. LLW will be stored in HICs (or other suitable containers designed for 300-year life) and the HICs will be stored in SECs. The HICs will not be opened at the LLW storage facility. The SEC is equipped with a through wall drain and vent pipe that prevents rain water from intruding into the plenum or any material inside from getting out. There will be no transfer of a HIC to or from an SEC during periods of inclement weather. In addition, the site is graded such that runoff from this facility will be directed away from the main power block. No SSC will be flooded by the minimal additional runoff from the LLW storage facility. The addition of this storage facility will have an insignificant impact on rain water runoff based on a review of drawings CX2D46V003, CX2D46V005, CX2D46V006, and AX2D45S004. The minor difference will be that the rain falling on the concrete pad will drain to the edge before soaking into the ground. The selected area is graded to drain and handle a 100 year flood per a review of the FSAR Chapter 2. The additional rain water runoff generated by this storage facility is insignificant compared to the 100 year flood design. Detailed evaluation of the potential for flooding of the proposed LLW storage facility is provided in response to Section C, Question 3 below (i.e., 50.59 evaluation Question 3).

3. HVAC:

The LLW Storage Facility is an open structure with no climate controls or filtered/monitored release points.

4. Shielding:

The SECs act as shielding for HICs as described per FSAR 12.3.2.2. Per calculation X6CDD.46 (Reference 7), the dose rate as a function of distance from a HIC containing a single 3000 R/hr filter is 0.496 mR/hr at 40 feet. The HIC does not provide any significant radiation shielding. The dose rates on the surface of the containers must be maintained to a level that will not pose an exposure concern to personnel in uncontrolled areas surrounding the facility. HP will maintain appropriate ALARA practices since this will be a radiologically controlled area. The dose rate at the facility fence shall be limited to 0.25 millirem per hour, which in conjunction with the distance to the OCA boundary, provides continued compliance with the requirements of 40 CFR 190. The dose rate inside the storage pad perimeter should be limited to 15 millirem per hour except during HIC transfer to or from an SEC. The dose rate between the storage pad and inside the fence shall be limited to 2.5 millirem per hour. (Reference 10) Additional shielding will be provided as necessary to maintain the dose rates less than or equal to the

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above described limits. Access to the facility is controlled to minimize personnel exposure by a fence with locked gates, consistent with FSAR 11.4.1 Solid Waste Management System: Design Bases.

5. Fire Protection:

Fire protection equipment is not necessary for this storage facility. The radwaste will be stored in HICs or other suitable containers designed for a 300-year life, which will be stored inside SECs made from reinforced concrete. This storage pad will be made from concrete and there will be no combustible material or combustible containers outside the storage pad, therefore no fire protection is required. Appropriate controls for movement of transient fire loads (e.g., cranes, trucks, etc.) will be applied as appropriate.

6. Capacity:

Vogtle Units 1 & 2 are expected to generate approximately four to five HICs per year. The concrete slab size will be 88' x 88' and is intended to store up to 36 HICs/SECs. At a postulated maximum of six HICs of radwaste generated per year, this would provide a minimum of six years storage capacity and a probable storage capacity of eight years. This location has adequate room for expansion, if required in the future. Thus this storage facility capacity is consistent with the requirement as described in FSAR 11.4.1.2 Power Generation Design Bases.

7. Security Systems:


This design provides a facility to store LLW within the OCA but outside the PA. Access to this facility will require entry through the security gate to the OCA and then entry through a locked gate at the storage facility. The storage facility is provided with on site lighting and is enclosed by a fence with locked gates thus making it inaccessible without the appropriate Health Physics Department administrative controls. Refer to drawings AX1D16A01 and AX1D16A02 for design details of fence and gates. Access to this facility will be under the direct control of the Health Physics Department as a Radiation Control Area/Radioactive Material Storage Area and will be monitored by OCA Security Roving Patrols or monitored surveillance equipment, in accordance with the Southern Nuclear Operating Company Security Plan; Section 10.5.1, Owner Controlled Area (OCA) Surveillance and Response (Reference 12).

8. Decontamination:

The facility structure is designed to be maintained as a non-contaminated area. Opening of any of the containers (HICs) in storage at this facility is prohibited. The proposed activity is not anticipated to include the spread of radioactive material outside the PA that would require remediation during decommissioning and therefore, does not impact decommissioning of the facility. Accordingly, design of the Vogtle LLW storage facility is consistent with the requirements of 10 CFR 20.1406 for minimization of the spread of contamination to the facility and the environment, facilitating eventual decommissioning, and minimization of radioactive waste generation.

9. Storage Containers:

Low level radioactive waste will be stored in HICs or other suitable containers designed for 300-year life which will be stored within SECs. The HICs or other suitable containers will incorporate a special vent design that allow depressurization without the migration of radioactive materials. The SEC will provide radiation shielding and protect the HIC from normal environmental exposure as described per FSAR 11.4.2.4, Portable Radwaste System.

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The current SEC storage cask is a right circular cylinder approximately 9-1/2 feet tall (including the lid), 10 -1/3 feet wide (outside diameter) with 23 inch thick walls. Its floor is 12 inches thick. It is equipped with a drain and vent pipe (3/8" SS schedule 40 pipe) that is routed through the container wall with a loop to prevent rain water from entering the cask or any material inside from getting out. The lid weighs 27,400 lbs. The vessel base weighs 60,000 lbs. The total vessel weight including lid is approximately 87,400 lbs. The SEC is fabricated with two rows of rebar. The concrete strength of a SEC is 5000 psi. The current SECs are provided per Reference 5. SECs are able to withstand tornado-velocity winds, tornado missiles, and seismic events as described in FSAR 3.3 and 3.7B and no special hold-down systems are required per calculation X2CA52 (Reference 6).

10. Environmental:

This LLW Storage Facility performs no function related to the safe shutdown of the plant, and its failure does not adversely affect any safety-related system or component. Therefore, this facility has no safety design basis which is consistent with FSAR 11.4.1.1.

Per calculation X2CA52 (Reference 6), the 23" thick concrete wall of a SEC can withstand tornado missiles as described per FSAR 3.5.1.4. Also the lid of a SEC is secured and would not become a missile. SECs are designed to withstand the tornado wind loads described in FSAR 3.3 without tip-over or sliding of the SECs. Accordingly, no anchorages are required on the concrete storage pad. Based on the above, the SECs provide adequate shielding and protection of the HICs (or other suitable containers) from environmental events.

Current practice is that each HIC is transported from the Radwaste Processing Facility (RPF) to a vendor volume reduction facility or burial site by shipping cask. A shipping cask or appropriate transfer container will also be used for onsite transportation of a HIC to the storage facility where it will be inserted into a SEC and placed in storage.

11. Radioactive Monitoring:


The LLW storage facility will be designated as a Health Physics Department radiation controlled area (RCA)/ Radioactive Material Storage Area. Radiation surveys will be performed in accordance with Health Physics procedures as described in FSAR 12.5.3.

12. Miscellaneous:

Dewatered resins will be placed in storage at the LLW storage facility until such time as the volume reduction vendor has Vogtle scheduled for a "campaign" of HICs. At that time, several shipments of HICs will transfer the resin to the vendor for reduction to approximately one HIC volume which will be returned and placed into long term storage until a permanent disposal facility is available. Expectations are that Vogtle will be notified of a campaign opening once to twice per calendar year.

Filters that are >Class A, and irradiated components will be placed in HICs or other suitable containers and then placed inside a SEC. Vogtle Procedure 46111-C "Storage of Radioactive Waste Outdoors" provides guidance on sampling the SECs for water intrusion and gas buildup. SECs will be numbered and marked for inventory and accountability purposes.

NUREG-0800, Appendix 11.4A, identifies the potential for generation of flammable/explosive conditions inside containers used for storage of highly radioactive resins resulting from radiolysis, biodegradation, or chemical reaction. The HICs or other suitable containers to be stored in the VEGP LLW storage facility are equipped with special vent designs that allow depressurization without the migration of radioactive materials. These vents exhaust to the area between the HIC (or other suitable container) and the SEC. In addition to periodic visual inspections of the container integrity, this environment is

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sampled periodically to identify any leakage from the HIC (or other suitable container) and for explosive mixtures. Accordingly, the potential for a container breach resulting from ignition of flammable/explosive gases is not considered credible.

NUREG-0800, Appendix 11.4A, states that the preferred location of the LLW storage facility is inside the PA if adequate space is available. Adequate space for the Vogtle LLW storage facility is not available and as a result, the LLW storage facility will be located outside the PA but within the OCA. Accordingly, transportation of the loaded HICs (or other suitable containers) to the LLW storage facility will not involve movement over public roads and therefore, the requirements of 10 CFR 71 and 49 CFR 171 – 180 do not apply.

References:

1. VEGP FSAR –Units 1 & 2, Rev. 15 with 02/29/08 update, Sections 1.9.143.2, 2.4.1, 2.4.13, 3.3 , 3.5, 3.7B, 9.5.1, 11.4.1, 11.4.1.2, 11.4.2.3.3, 11.4.2.4, 12.3.1.2, 12.5, 13.5.2.3.1, & 15.7
2. VEGP Technical Specifications, (Amendments 148/128)
3. VEGP Environmental Protection Plan, (Amendments 97/75)
4. EPRI draft report dated January 25, 2008, Guidelines for Operating an Interim on Site Low Level Radioactive Waste Storage Facility
5. Secure Environmental Container From Dufrane DNSI-14-200-H-SEC™
6. Calculation: X2CA52, Version 1.0, Concrete Storage Pad for Low Level Radwaste
7. Calculation: X6CDD.46, Version 0.0, Dose Rate v/s Distance from filter storage HICs
8. NUREG-0800, Appendix 11.4A, Design Guide for Temporary Storage of Low-Level Radioactive Waste
9. AX6AK10-00867 Type B Radwaste Shipping Cask by Duratek Inc
10. Drawing: AX6DD032, Version 1.0, Radiation Zones Accessibility –Concrete Storage Pad for Low Level Radwaste
11. Vogtle Electrical Generating Plant Process Control Program Version 8.0
12. Southern Nuclear Operating Company Security Plan, Version 4.0
13. VEGP Plant Procedure 46111-C, Version 3.0, Storage of Radwaste in Outdoor Process Shields
14. VEGP Plant Procedure 46110-C, Version 9.1, Shipment of Radioactive Waste
15. AX6D47A469, Version 1.0, Concrete Storage Pad for Low-Level Waste

B. 10 CFR 50.59 Screening

Identify the Updated FSAR design function which applies to this activity, if applicable:

The FSAR described design function for the proposed change is the storage of LLW as described in FSAR Section 11.4.

Does the activity to which this screening applies represent:


1. Yes No A modification, addition to, or removal of a structure, system, or component (SSC) such that a design function as described in the Updated FSAR is adversely affected?

Basis for Answer: Currently, Section 11.4 of the Vogtle FSAR describes operation of the solid waste management system and includes temporary storage of LLW in the event of delay or disruption of offsite shipping schedules. Due to closure of the Barnwell disposal site for non-Atlantic Interstate Low-Level Radioactive Waste Management Compact states (Atlantic Compact), the temporary LLW storage provided in the event of delay or disruption of off-site shipping schedules is no longer adequate to sustain continued operation of the Vogtle plant. Accordingly, expansion of the LLW storage capacity for Vogtle is required. The proposed LLW storage facility will be located outside the PA in a restricted area inside the OCA. Loading of material into HICs or other suitable containers for storage in the LLW storage facility will be performed as described in the FSAR and the HICs or other suitable containers will not be opened at the LLW storage facility. Appropriate administrative controls will be in place to minimize the potential for spread of contamination in the LLW storage facility.

The proposed LLW storage facility does not have any direct interface with the Part 50 facility and does not impact operation of the Part 50 facility. Accordingly, the proposed change does not constitute an adverse change to a design function described in the FSAR.

2. Yes No A change to procedures that adversely affects the performance or method of control of a design function as described in the Updated FSAR?

Basis for Answer: FSAR Section 11.4 states that short-term onsite storage is provided in the form of a storage pad located next to the abandoned radwaste solidification building to allow decay of radionuclides. The proposed LLW storage facility will be used to store LLW in larger quantities for an indefinite period pending NRC licensing of an acceptable LLW disposal facility. As opposed to placement of the HICs or other suitable containers into the SEC or transportation cask inside the RPF, the transfer of the HIC or other suitable container to an SEC will occur outdoors at the LLW storage facility utilizing a mobile crane. The unlikely drop of a HIC or other suitable container during transfer could result in a direct release to the environment; however, these are minimized by administrative controls designed to minimize the potential for loads dropped from mobile cranes. Additionally, LLW stored in the facility is limited to dewatered resins and stabilized waste, thereby minimizing the potential for spread of contamination.

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Due to the potential for the drop of a HIC or other suitable container at the LLW facility by a mobile crane during transfer operations, the proposed change is considered adverse and is evaluated in Section C.

3. Yes No An adverse change to a method of evaluation or use of an alternate method of evaluation from that described in the Updated FSAR that is used in establishing design bases or in the safety analysis?

Basis for Answer: Construction and use of an onsite LLW Storage Facility for low level radioactive waste at VEGP does not involve a change to computer codes or methods that support the licensing or design basis for LLW storage described in the FSAR. Accordingly, the proposed change does not result in a departure from a method of evaluation described in the updated FSAR used in establishing the design bases or in the safety analyses.


4. Yes No A test or experiment not described in the Updated FSAR which is outside the reference bounds of the design basis as described in the Updated FSAR or is inconsistent with the analyses or descriptions described in the updated FSAR?

Basis for Answer: Construction and use of an onsite the LLW Storage Facility for low level radioactive waste at VEGP is a permanent change to the plant and does not place the facility in an abnormal configuration that is outside the bounds of the FSAR. Consistent with the guidance of NEI 96-07, Revision 1, the proposed addition of the LLW storage facility does not constitute a test or experiment not described in the Updated FSAR which is outside the reference bounds of the design bases as described in the Updated FSAR or inconsistent with the analyses or descriptions described in the Updated FSAR.

5. Yes No A change to the Technical Specifications and/or Environmental Protection Plan incorporated in the operating license?

Basis for Answer: The proposed change does not place new or different operability requirements on systems required to be operable in the plant Technical Specifications. Although the proposed change involves a minimal change to rainwater runoff in the local area, the impact is bounded by the conclusions contained in the Environmental Protection Plan. Accordingly, the proposed change does not involve a change to the Technical Specification and/or the Environmental Protection Plan.

IF the answer to all of the questions in section B is "NO", do not complete sections C and D. Sections C and D should also be deleted from the form. IF the answer to any of questions 1, 2, or 4 in section B is "YES", then only complete the answers to questions 1-7 in section C and complete the summary in Section D. IF only the answer to question 3 in section B is "YES", then only complete the answer to question 8 in section C and complete the summary in section D. IF question 5 is answered "YES", a license amendment is involved which requires NRC approval. Do not complete sections C and D if all aspects of the activity will be addressed in the license amendment request.

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C. 10 CFR 50.59 Evaluation

1. Yes No N/A Does the proposed activity result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the Updated FSAR?

Basis for Answer: The existing applicable accident analyses involving a radioactive release from a subsystem or component are presented in FSAR section 15.7. These analyses include gas system leak, liquid waste system leak, liquid tank failures, fuel handling accident and spent fuel cask drop. The proposed storage of LLW in the Vogtle LLW storage facility does not impact the above described accidents or the resulting consequences as described in the FSAR. The HICs or other suitable containers placed into storage in the LLW storage facility will be loaded as currently described in FSAR Section 11.4 and placed on a truck for transport to the LLW storage facility in a manner consistent with that used for removal of the HICs or other suitable containers from the site with the exception that a transfer bell may be used to provide shielding during transport as opposed to a transportation cask licensed in accordance with the provisions of Part 71. Excavation activities associated with construction of the LLW storage facility are in an area that does not contain underground conveyances or SSCs considered important to safety.

Accordingly, the proposed activity does not result in an increase in the frequency of occurrence of an accident previously evaluated in the updated FSAR.


2. Yes No N/A Does the proposed activity result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the Updated FSAR?

Basis for Answer: Malfunctions described in Chapter 15 of the updated FSAR are malfunctions that affect operation of the unit and do not apply to storage of LLW in the proposed storage facility. Accordingly, no SSCs considered important to safety are impacted by the proposed addition and as a result, the proposed change does not result in more than a minimal increase in the likelihood of occurrence of a malfunction of a structure, system, or component considered important to safety.


3. Yes No N/A Does the proposed activity result in more than a minimal increase in the consequences of an accident previously evaluated in the Updated FSAR?

Basis for Answer: This activity does not impact, change, degrade or prevent actions described or assumed in the existing accident analysis, alter any assumptions made, or play any direct role that would impact the mitigation of the radiological consequences of any accident described in the FSAR. In addition, the proposed addition of the LLW storage facility does not impact the source terms used in determining the radiological consequences of accidents evaluated in the FSAR.

SNC has evaluated the potential impact of design basis events (i.e., fire, tornado, seismic occurrence, and flood) on the proposed LLW storage facility as follows.

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- Fire – There are no combustible materials stored inside the LLW storage facility and the facility is surrounded by a fence that precludes introduction of flammable material into the area surrounding the HICs (or other suitable containers)/SECs. Accordingly, a fire inside the facility is not considered to be credible and therefore, does not result in any radiological consequences.
- Tornado Missiles – Per calculation X2CA52 (Reference 6), 23" thick concrete wall of a SEC can withstand a design basis tornado missile described in FSAR Table 3.5.1-6. Also the lid of a SEC is secured and will not become a missile. To preclude potential damage to a HIC or other suitable containers during transfer operations (i.e., when tornado missile protection is not provided by the SEC), HICs (or other suitable containers) will not be transported from RPF to the LLW storage facility during inclement weather. HICs or other suitable containers will be transported to the storage facility inside a shipping cask or transfer bell by truck and will be inserted in the SEC at the LLW storage facility. Transfer to SECs will not be performed at the LLW storage facility during inclement weather to avoid the potential for impact by tornado missiles during the brief time that the SEC does not provide tornado missile protection for the HIC or other suitable container. Loaded HICs or other suitable containers will not be stored in the LLW storage facility without shielding and missile protection provided by a SEC. Accordingly, the proposed storage of LLW in the Vogtle LLW storage facility will not result in an increase in radiological consequences as the result of a design-basis tornado missile.
- Seismic – Per calculation X2CA52 (Reference 6), the LLW storage pad is designed to withstand a design-basis seismic event without lifting of the pad. In addition, calculation X2CA52 evaluated the potential for sliding or overturning of the HIC (or other suitable container)/SEC during storage and determined that the HIC (or other suitable container)/SEC combination will not slide or overturn during a design-basis seismic event. Accordingly, the proposed storage of LLW in the Vogtle LLW storage facility will not result in an increase in radiological consequences during a design-basis seismic event.
- Flood – The proposed LLW storage facility is located in an area that minimizes the potential for flooding the LLW storage facility or the containers used to store the LLW. The probable maximum flood for the Vogtle site as described in FSAR Section 2.4.2.2 is 138 ft MSL without wave runup and 165 ft MSL with wave runup. The area surrounding the proposed LLW storage is at an elevation of approximately 210 ft MSL and is graded to ensure drainage is away from the LLW storage facility without creating additional runoff for the main power block. All LLW will be stored in HICs or other suitable containers and these will be stored in SECs.
- Tornado Wind Loads – The impact of the design-basis tornado wind loads on the surface of the SEC containing a HIC has been evaluated via calculation X2CA52 (Reference 6) and determined to

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not result in tipover or movement of the HICs (or other suitable container)/SECs on the LLW storage pad. Accordingly, the proposed storage of LLW in the Vogtle LLW storage facility will not result in tipover or movement of the SEC or result in a challenge to the integrity of the HIC (or other suitable container)/SEC.

Based on the above, storage of LLW in the Vogtle LLW storage facility does not result in an increase in radiological consequences of an accident previously evaluated in the FSAR. Accordingly, the proposed activity will not increase the consequences of an accident previously evaluated in the FSAR.


4. Yes No
 N/A
- Does the proposed activity result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the Updated FSAR?

Basis for Answer: The location of the storage facility ensures no direct or indirect impact to any safety related/ITS equipment. Loading and transport of the HICs or other suitable containers will be consistent with the existing practice described in the FSAR with the exception that the containers may be placed inside a transfer bell instead of a transportation cask for transport from the RPF to the LLW storage facility. The LLW storage facility is a passive facility in that it does not rely on any other system; either safety related or equipment important to safety (ITS), required to mitigate the consequences of a malfunction described in the FSAR. Accordingly, the proposed activity does not increase the consequences of a malfunction of equipment important to safety previously evaluated in the FSAR.

5. Yes No
 N/A
- Does the proposed activity create the possibility for an accident of a different type than any previously evaluated in the Updated FSAR?

Basis for Answer: FSAR Sections 15.7.1, 15.7.2, 15.7.3 describe accidents involving liquid and gaseous release of radioactive material from the waste gas decay tank and the recycle holdup tank. Currently, HICs are lifted inside the radwaste processing building and a drop of the HIC and corresponding radiological consequences are assumed to be bounded by the liquid and gaseous releases from the waste gas decay tank and recycle holdup tank. Accordingly, a drop of a HIC is not considered an accident in Chapter 15 of the FSAR. With the exception of interim storage of dewatered resins, waste contained in HICs or other suitable containers at the low-level waste storage facility is limited to dry, stabilized waste to reduce potential spread of contamination and thereby minimize the consequence of the unlikely rupture of a HIC or other suitable container.

Per calculation X2CA52 (Reference 6), 23" thick concrete wall of a SEC can withstand Tornado Missiles per FSAR Table 3.5.1-6. Also the lid of a SEC is secured and would not become a missile. The content of the HIC or other suitable containers will not be opened in this storage facility. Furthermore, a HIC or other suitable container will not be transported from RPF to the SEC storage area or transferred from the transfer bell or shipping cask to the SEC during inclement weather. As a current practice HIC is transported from RPF

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to vendor site (for volume reduction) or burial site by shipping cask. HIC or other suitable containers will be transported to the storage facility by shipping cask or transfer bell and will be inserted in the SEC at the LLW storage facility. Existing site administrative controls will be applied to lifting of the HICs or other suitable containers during transfer to the SEC at the LLW storage facility to minimize the potential for a drop event.

Based on the above, the proposed activity does not create the possibility of an accident of a different type than any previously evaluated in the FSAR.

6. Yes No N/A Does the proposed activity create the possibility for a malfunction of an SSC important to safety with a different result than any previously evaluated in the Updated FSAR?

Basis for Answer: The HICs (or other suitable containers)/SECs are located such that they are not in close proximity to any safety related/ITS equipment. The storage facility design utilizes offsite power for security lighting and is not connected to, nor does it require any plant system support to operate. Therefore the proposed activity does not create the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the FSAR.

- 7.a Yes No N/A Does the proposed activity have any impact on the integrity of the fuel cladding, reactor coolant pressure boundary, or containment? (Note: Answer Question 7b only if the answer to Question 7a is "YES.")


Basis for Answer: The LLW storage facility provides temporary storage of LLW pending NRC licensing of an acceptable disposal facility and has no interface with or impact to any plant SSC. The LLW storage facility location is outside the PA and does not impact any SSC inside the PA. Specifically, the proposed LLW storage facility does not place new or different requirements on the fuel cladding, reactor coolant pressure boundary, or containment and as a result, does not impact a fission product barrier. Accordingly, the proposed activity will have no impact on the integrity of the fuel cladding, reactor coolant pressure boundary, or containment.

- 7.b Yes No N/A Does the proposed activity result in a design basis limit for a fission product barrier as described in the Updated FSAR being exceeded or altered?

Basis for Answer:

8. Yes No N/A Does the proposed activity result in a departure from a method of evaluation described in the Updated FSAR used in establishing the design bases or in the safety analyses?

Basis for Answer: The proposed LLW storage facility is designed for temporary storage of LLW pending NRC licensing of an acceptable disposal facility. Construction and operation of the proposed LLW storage facility does not place new or different operating requirements on SSCs considered important to safety or the safety analysis described in the FSAR for SSCs considered important to safety. Accordingly, construction and operation of the LLW storage facility at VEGP does not involve the use any new or revised method of evaluation described

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in the updated FSAR used in establishing the design bases or in the safety analysis.

Provide a summary of the 10 CFR 50.59 evaluation in Section D. IF the answer to any of the questions in section C (excluding Question 7a) is "YES", a license amendment must be obtained from the NRC before the activity may be implemented. Do not complete section D if all aspects of the activity will be addressed in the license amendment request.

D. 10 CFR 50.59 Evaluation Summary

The 10 CFR 50.59 evaluation summary should include a brief description of the change and a concise summary of the responses to the evaluation questions provided in Section C.

Summary:

Due to closing of radwaste disposal facility at Barnwell, S.C. for non-Atlantic Compact Generators, a temporary storage facility is designed to store low level waste (LLW). This storage facility is located outside of the Protected Area (PA) in the Owner Controlled Area (OCA), West and North of the Unit-2 cooling tower. Access to this facility requires entry through the security gate to the OCA. The storage facility is enclosed by fence with locked gates and on site lighting. The access of this facility is under the direct control of the Health Physics Department as a radiation control area/radioactive material storage area and monitored by Security patrols. The storage of low level radwaste will be in high integrity containers (HICs) or other suitable containers which will be stored within shielded environmental containers (SECs) to provide appropriate shielding and missile protection. The concrete storage pad is intended to store up to 36 SECs containing HICs or other suitable containers.

In accordance with the provisions of 10 CFR 50.59, addition of the LLW storage facility does not: (1) result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the Updated FSAR; (2) increase in the likelihood of occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the Updated FSAR; (3) does not result in more than a minimal increase in the consequences of an accident previously evaluated in the Updated FSAR; (4) result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the Updated FSAR; (5) create the possibility for an accident of a different type from those previously evaluated in the Updated FSAR; (6) create the possibility for a malfunction of an SSC important to safety with a different result from those previously evaluated in the Updated FSAR; (7) result in a design basis limit for a fission product barrier being exceeded or altered; or (8) result in a departure from a method of evaluation described in the Updated FSAR used in establishing the design bases or in the safety analyses. Based on the above, the addition of the LLW storage facility may be implemented in accordance with the provisions of 10 CFR 50.59 without prior NRC approval.

Yes Check this box indicating a copy of the completed 10 CFR 50.59 screen/evaluation will be forwarded to Nuclear Licensing.


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Figure 1 - Non-Radiological Environmental Impact Evaluation Checklist

- (1) PLANT AND UNIT Vogtle Electric Generating Plant, Units 1 and 2
- (2) DESCRIPTION OF ACTIVITY OR ISSUE Interim Onsite Storage Facility for Low Level Radwaste (RER A071430001), Version 2

(3) ENVIRONMENTAL EVALUATION - PART A: Does the activity to which this check list is applicable represent:

(3.1) Yes ___ No X An activity required to achieve compliance with Federal, State, or local environmental regulations?

If the answer to question 3.1 is yes, omit 3.2 through 4.3.

(3.2) Yes ___ No X A change to the plant design or operation which affects the environment?

(3.3) Yes ___ No X A test or experiment which affects the environment?

(3.4) Yes ___ No X A change to the Environmental Protection Plan (EPP)?

If the answer to question 3.2, 3.3, or 3.4 in Section 3 is "Yes," complete Section 4 and attach supporting documentation, calculations, etc. If the answers to questions 3.2, 3.3, and 3.4 are "No," omit Section 4.

(4) NON-RADIOLOGICAL ENVIRONMENTAL IMPACT EVALUATION - PART B

(4.1) Yes ___ No ___ Will the activity result in a significant increase in any adverse environmental impact previously evaluated in the final environmental statement (FES) as modified by NRC staff's testimony to the Atomic Safety and Licensing Board (ASLB), supplements to the FES, environmental impact appraisals, or in any decisions of the ASLB?

(4.2) Yes ___ No ___ Will the activity result in a significant change in effluents or power level?

(4.3) Yes ___ No ___ Will the activity result in a matter not previously reviewed and evaluated in the documents specified in (4.1) which may have a significant adverse environmental impact?

If the answer to any of the above questions is "Yes," an unreviewed environmental question may be involved.

(5) REMARKS: (Attach additional pages if necessary) See attached.

(6) PREPARED BY: Gregory D. Elmore
 DATE: 3/13/08

(7) REVIEWED BY: William J. Dyer
 DATE: 3/14/08

(8) APPROVED BY: N/A
 DATE: _____

ATTACHMENT TO NON-RADIOLOGICAL ENVIRONMENTAL IMPACT EVALUATION
VOGTLE ELECTRIC GENERATING PLANT UNITS 1 AND 2
INTERIM ONSITE STORAGE FACILITY FOR LOW LEVEL RADWASTE
(RER A071430001)

1. Item 3.1 is answered "NO" because this is not an activity which requires action to achieve compliance with Federal, State or Local non-radiological environmental regulations.
2. Item 3.2 is answered "NO" because the activity does not result in a significant increase in any environmental impact previously evaluated in the Final Environmental Statement (FES), as modified by staff testimony at the hearing, supplements thereto, environmental impact appraisals or in initial or final adjudicatory decisions. In addition, the activity does not constitute an unreviewed matter which may have significant non-radiological environmental impact.

Per discussion with SNC Design Support personnel and review of design information provided, the following information was utilized in performing the EPP evaluation for construction of the Vogtle interim onsite storage facility for low level radwaste:

- Located northwest of the Unit 2 cooling tower on previously disturbed land.
- No potable water or sewage system connections.
- No process/industrial wastewater discharges will be created or modified.
- No additional bulk chemical storage, fuel storage, or oil-filled electrical equipment are included in the design.
- No combustion equipment or other potential air emission sources are included in the design.
- No new sources of noise that could impact noise levels at the site boundary.
- No modification to existing storm drains. The storage facility consists of a pad with slight slopes to facilitate sheet flow runoff of stormwater.
- The overall storage facility dimensions are approximately ^{168'}158' by 168'. Less than one acre of land will be disturbed to construct the facility. *file 4/18/08*
- The area will be well-lit and enclosed in a security fence. The low level radwaste will be stored inside High Integrity containers, which will in turn be stored within Shielded Environmental Containers. The multiple barriers will serve to prevent contamination of stormwater runoff and the security features will prevent tampering or sabotage of the storage containers.

Based on the above information, the proposed construction of an interim onsite storage facility for low level radwaste will not result in a significant increase in any adverse non-radiological environmental impact previously evaluated in the FES.

3. Item 3.3 is answered "NO" because the activity does not involve a test or experiment as defined in plant procedures or in 10 CFR 50.59.
4. Item 3.4 is answered "NO" because the effect of the activity has been reviewed against the Vogtle Electric Generating Plant Environmental Protection Plan (EPP) and no change to the EPP is required.