

From: Galvin, Dennis
Sent: Wednesday, July 20, 2022 6:23 PM
To: Wendy Brost (webrost@stpegs.com)
Subject: South Texas Project – Request for Additional Information – 10 CFR 20.2002
Alternate Disposal Request (EPID: L 2021-LLL-0022)
Attachments: STP VLLW 20.2002 ADR RAIs L-2021-LLL-0022 2022-07-20.pdf

Dear Ms. Brost,

By letter dated November 4, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21308A603) as supplemented by letter dated December 3, 2021 (ML21337A126), South Texas Project (STP) Nuclear Operating Company (STPNOC), the licensee submitted a request for approval of alternate disposal procedures for very low-level waste (VLLW) to the Nuclear Regulatory Commission (NRC). STPNOC is requesting approval of its current disposal practice for VLLW, for which the NRC is exercising enforcement discretion pending the NRC review of the STPNOC request as described in the August 10, 2021, NRC letter (ML21180A195). The STPNOC request also refers to previously submitted information dated August 14, 2018 (ML18226A352).

The NRC staff has determined that additional information is needed to complete its review. The requests for additional information (RAIs) were transmitted to the licensee in draft form on June 8, 2022, and revised draft RAIs were transmitted on July 7, 2022. Clarification calls were held on June 27, 2022, and July 19, 2022. The licensee agreed to provide responses to the RAIs by August 19, 2022. The NRC staff agreed with this date.

Respectfully,

Dennis Galvin
Project Manager
U.S Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Operating Reactor Licensing
Licensing Project Branch 4
301-415-6256

Docket Nos. 50-498 and 50-499

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Created By: Dennis.Galvin@nrc.gov

Recipients:
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REQUEST FOR ADDITIONAL INFORMATION
REQUEST FOR APPROVAL OF ALTERNATE DISPOSAL PROCEDURES FOR
VERY LOW-LEVEL WASTE
STP NUCLEAR OPERATING COMPANY
SOUTH TEXAS PROJECT UNITS 1 AND 2
DOCKET NOS. 50-498 AND 50-499

By letter dated November 4, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21308A603) as supplemented by letter dated December 3, 2021 (ML21337A126), South Texas Project (STP) Nuclear Operating Company (STPNOC), the licensee submitted a request for approval of alternate disposal procedures for very low-level waste (VLLW) to the Nuclear Regulatory Commission (NRC). STPNOC is requesting approval of its current disposal practice for VLLW, for which the NRC is exercising enforcement discretion pending the NRC review of the STPNOC request as described in the August 10, 2021, NRC letter (ML21180A195). The STPNOC request also refers to previously submitted information dated August 14, 2018 (ML18226A352).

To complete its review, the NRC staff requests the following additional information.

RAI-1

Issue:

The submittal does not provide sufficient details to define the specific disposal action requested under 10 CFR 20.2002. Specifically, 20.2002(a) requires a clear understanding of the licensed material being considered for disposal as well as the proposed manner and conditions of the waste disposal. The submittal describes the waste being considered for disposal as “dewatered sewage sludge, ion exchange media, desiccant, ventilation filtration media, and soil that is originated from the secondary side of plant operations” but does not provide sufficient details related to the volume of material that is being requested for disposal per this approval or provide the NRC staff with a sufficient understanding of the manner and conditions in which STP is proposing to dispose of the material. Much of this information is also considered when assessing doses associated with the proposed action in accordance with 10 CFR 20.2002(d).

The information needed is that which is not covered by the Generic Environmental Impact Statement for License Renewal of Nuclear Plants—Final Report (GEIS) (NUREG-1437, Revision 1) (GEIS) (ML13106A241) or the NUREG-1437, Supplement 48 (SEIS) (ML13322A890), which specifically assessed the impacts associated with low-level radioactive waste from reactors at STP during their period of continued operations.

Regulatory Basis:

This information is needed to ensure that the proposed disposal action is understood and that specific details pertaining to the description of the waste and the “manner and conditions of

waste disposal” discussed in 10 CFR 20.2002(a) and the ability to maintain the doses, including future doses, ALARA per 10 CFR 20.2002(d) are considered.

The GEIS and SEIS discuss disposal of solid radioactive wastes in accordance with applicable requirements addressed in 10 CFR 61, “Licensing Requirements for Land Disposal of Radioactive Waste,” and 10 CFR Part 71, “Packaging and Transportation of Radioactive Material.” Further, all such operations are accounted for in the annual radioactive effluent release reports submitted to the NRC to demonstrate compliance with the applicable Federal standards and requirements. The primary standards applicable to all the power plants are contained in 10 CFR Part 20, “Standards for Protection Against Radiation,” 40 CFR Part 190, “Environmental Radiation Protection Standards for Nuclear Power Operations,” and Appendix I, “Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion “As Low as is Reasonably Achievable for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents,” to 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities.”

Path Forward:

- a. Provide specific details regarding the volume of material expected for each shipment, the length of time STP plans to perform the proposed action (the current license is through 2048), and the total volume of material to be disposed should this request be approved. The August 14, 2018, letter from STPNOC to the NRC notes that the State of Texas approval does not include a “sunset clause or other time-limiting condition.” However, this information is needed to ensure that the proposed disposal action is understood and that specific details pertaining to the description of the waste discussed in 10 CFR 20.2002(a) and the ability to maintain the doses, including future doses, ALARA per 10 CFR 20.2002(d) are considered.
- b. Identify any processes related to the packaging and shipping of the material from STP to the disposal site that differ from the processes already evaluated in the GEIS or the SEIS.
- c. Clarify the anticipated maximum number of annual shipments of material transferred to the disposal site(s). The discussion in the “Proposed Manner and Conditions of Disposal” section of the submittal notes that STPNOC performs five shipments per year, on average. However, in the “Dose Analyses – Annual Dose to a Material Shipment Driver” section of the submittal STPNOC assumes that 12 shipments are made annually. Also, clarify the statement “[w]aste must be received and interred by the end of business on the date received,” and clarify the length of time between when the material is packaged and shipped until it received and interred. Also clarify whether individual shipments will contain the same material or a mixture of different material types, the method used to transport the material (e.g., trucks, trains, etc.), and the method for tracking and documenting which materials were shipped to specific landfills.
- d. Describe any alternatives to disposing of the material at Texas Class I or Class II landfills that were considered (e.g., treatment methods, disposal onsite at STP or at licensed low-level waste disposal sites, disposal in landfills outside the State of Texas, etc.) and provide the bases for why such alternatives were or were not considered reasonable.

RAI-2

Issue:

Satisfying 10 CFR 20.2002(b) and (c) requires a clear understanding of the environment surrounding the areas associated with the actions related to the alternate disposal request as well as other potentially affected licensed and unlicensed facilities in the vicinity. Satisfying these requirements for this specific request may be met by providing sufficient details to describe the characteristics of Texas Class 1 or Class 2 industrial landfills in general or the site-specific characteristics of a specific Texas Class 1 or 2 industrial landfill (or landfills) to be considered with this request that will ensure the safe disposal as well as long-term safety to surrounding licensed and unlicensed sites. Although this submittal provides some specific details regarding the current landfill and a criterion that would be used to select future landfill disposal sites, specific details related to the surrounding environment of potentially impacted licensed and unlicensed facilities were not specifically addressed in the submittal. Similar details related to the environment and impacts to areas surrounding STP and, more specifically the environmental yard, were also not provided.

Additionally, the approval of a 10 CFR 20.2002 alternate disposal request is a Federal action that requires an environmental review in accordance with the National Environmental Policy Act (NEPA). As a result, an environmental review of the entirety of the disposal actions associated with this request also needs to be conducted as part of the NRC staff's review.

The information needed is that which is not covered by the GEIS or the SEIS (which are further described in the regulatory basis for RAI 1) and ensures the safe disposal of material at an offsite disposal facility authorized to accept the material in accordance with Texas regulations.

Regulatory Basis:

This information is needed when evaluating specific impacts associated with the proposed disposal action per 10 CFR 20.2002(b) and (c) and to perform an environmental review in support of NEPA requirements.

Path Forward:

- a. Identify the criteria and characteristics used by the State of Texas to classify a specific disposal site as a Texas Class 1 or Class 2 landfill that is acceptable for receiving and disposing of the VLLW material sent from STP or identify specific characteristics of specific site(s) the STP may use for waste disposal during the remainder of the current operating license period, or an alternate period consistent with the duration of the alternate disposal request. Also identify the range of environmental settings (e.g., urban, suburban, rural, etc.) for these disposal site(s) and how the environmental setting impacts their classification as a Texas Class 1 or Class 2 landfill.
- b. Describe the processes associated with the disposal of the material at Texas Class 1 and Class 2 disposal site(s) that are protective of the workers and members of the public at the landfills and in the areas surrounding the landfills. If specific Texas Class 1 and Class 2 disposal sites are being proposed for consideration, describe the processes and safety measures taken by those specific sites to ensure the safety of the workers and members of the public at the landfills and in the surrounding areas.

- c. Describe the environmental impacts associated with this alternate disposal request. When considering impacts associated with onsite activities STPNOC may use existing environmental analyses, if appropriate, including the GEIS and SEIS, and consider how disposal processes that have already been evaluated compare to the proposed disposal procedures. For activities occurring offsite, describe any environmental impacts specifically associated with the disposal of VLLW at Texas Class 1 and Class 2 disposal sites. If specific Texas Class 1 and Class 2 disposal sites are being proposed, describe any environmental impacts specifically associated with the disposal of VLLW at these sites. STPNOC should consider any new or additional information related to environmental resources not previously considered by the NRC. since the publication of the SEIS. Specific considerations should include impacts to prominent vegetation, wildlife, aquatic habitats, and biota, as well as federally listed species and critical habitats protected under the Endangered Species Act.
- d. Identify the Federal, State, and local regulations that would be used to ensure that industrial landfills accepting VLLW are safe and that surrounding areas are not impacted. Also identify any other Federal, State, and local permits and approvals that are needed or have been already obtained in connection with the proposed action.

RAI-3

Issue:

The submittal does not provide sufficient details related to the doses to workers and members of the public associated with disposing of the waste to meet the requirements in 10 CFR 20.2002(d). This includes a description of the exposure scenarios, exposure pathways, and site-specific parameter values used to calculate doses to onsite facility workers at STP, transportation workers involved with transporting the material to the disposal site, landfill workers involved with the disposal actions at the landfill(s), and potential future intruders that could come into contact with the material once the landfill is no longer used.

Regulatory Basis:

This information is needed when evaluating the dose calculations needed to assess the doses (10 CFR 20.2002(d)) associated with this proposed disposal action in accordance with 10 CFR 20.2002.

Path Forward:

- a. Provide a summary of the input parameters for the sites being considered for disposal under the requested action and resulting doses from the RESRAD [RESidual RADioactive]-ONSITE and RESRAD-OFFSITE analyses (these could be the summary reports) as well as any other technical analyses performed for this submittal. Also provide the basis for considering specific modeling assumptions used in these calculations.
- b. Clarify the different workers involved with these disposal actions, the number of workers associated with each task, whether workers may perform multiple tasks associated with the proposed action, and if additional workers are necessary. Clarify whether the actions related to packaging and preparing the shipments at STP are performed by qualified

radiation workers, members of the public, or someone else and whether any radiation exposure monitoring activities are performed.

- c. Clarify the statement in the section, "Dose Analyses – Annual Dose to a Material Shipment Driver" that each shipment is assumed to be one-twelfth of an annual activity of $2.00\text{E-}05$ curies of Cobalt 60 (Co-60). Explain the origin of the $2.00\text{E-}05$ curie value as it is well below the Co-60 values provided in Table 2 of the submittal and why a fraction of Co-60 is considered but no other radionuclides are being considered for disposal.