Department of Energy
Savannah River Operations Office
P.O. Box A
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MAY 10 2022

Ms. Susan B. Fulmer, P.G., Manager
Federal Remediation Section
Division of Site Assessment, Remediation and
Revitalization Bureau of
Land and Waste Management
South Carolina Department of Health and
Environmental Control 2600 Bull Street
Columbia, South Carolina 29201

Mr. Jon Richards
Savannah River Site Remedial Project
Manager Superfund Division
U. S. Environmental Protection Agency,
Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303

Dear Ms. Fulmer and Mr. Richards:

SUBJECT: Federal Facility Agreement (FFA) Appendix L Commitment to "Start discussions for renegotiating Liquid Waste (LW) tank commitments within 30 days of issuing the Notice to Proceed"

REFERENCE: Your Letter, Fulmer to Folk, Comments/Questions on Liquid Waste System Plan, SRR-LWP-2009-00001, Revision 22, September 21, 2021 (dated February 18, 2022)

The U.S. Department of Energy (DOE) is notifying the South Carolina Department of Health and Environmental Control (SCDHEC) and the U.S. Environmental Protection Agency (EPA) that the FFA Appendix L commitment to "Start discussions for renegotiating LW tank commitments within 30 days of issuing the Notice to Proceed" was met on December 14, 2021, ahead of the commitment date of December 27, 2021. A briefing to SCDHEC and EPA on the Liquid Waste System Plan Revision 22, which was prepared by the previous liquid waste contractor, Savannah River Remediation (SRR) was held on December 14, 2021.

After review, SCDHEC provided comments and questions in the referenced letter. DOE responses were discussed with EPA and SCDHEC by videoconference on April 7, 2022. The responses are attached to this letter for your convenience.

Questions from you or your staff may be directed to me at (803) 952-8365, or the DOE Federal Program Manager, Ms. Sonitza Blanco at (803) 208-6029.

Sincerely,

Brian T. Hennessey Digitally signed by Brian T. Hennessey Date: 2022.05.10 09:54:29 -04'00'

Brian T. Hennessey
SRS Remedial Project Manager
Infrastructure and Area Completion Division

BTH:SB:vgf
WDPD-22-26

Enclosure:
Savannah River Site's Responses
to South Carolina Department of
Health and Environmental Control's
Comments on the Liquid Waste System
Plan (SRR-LWP-2009-00001, Revision 22,
September 21, 2021)

cc w/enclosure:
Heather Cathcart, SCDHEC
Fatina Washburn-Clark, SCDHEC
Jana Dawson, EPA-Atlanta
Mac McRae, TechLaw. Inc.

cc w/o enclosure:
Crystal Rippy, SCDHEC
Ken Taylor, SCDHEC
Van Keisler, SCDHEC
Jessica Price, SCDHEC
Myra Reece, SCDHEC
Travis Fuss, SCDHEC
Gregg O'Quinn, SCDHEC
Leigh Beatty, SCDHEC
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Juli Blalock, SCDHEC
Stacey French, SCDHEC
Sheila Watts, SCDHEC
Robert Pope, EPA-Atlanta

Savannah River Site's Responses to South Carolina Department of Health and Environmental Control's Comments on the Liquid Waste System Plan (SRR-LWP-2009-00001, Revision 22, dated September 21, 2022

Comments Received: February 18, 2022

General Comments

1. This Liquid Waste System Plan (LWSP) assumes that there are no equipment failures other than the DWPF Melter replacement. Given the aging infrastructure at SRS, this seems overly optimistic. Even the last sentence in the last paragraph in Section 3.2, South Carolina Environmental Laws and Permits, on page 8 implies that some of the older facilities will be operated as part of a complex set of interdependent facilities which could result in additional force majeure events. Contingencies for equipment failure and down time should be factored into the assumptions in LWSP. This, in turn, will aid in the development of revised and achievable milestones for liquid waste to be listed on Appendix L of the Federal Facility Agreement.

   Response to General Comment #1: Every facility has an assumed availability with a corresponding unavailability (downtime). For example, SWPF has an assumed availability of 75% which means it has an unavailability of 25%. This equates to 3 months of downtime every year. Some of this downtime is for planned outages such as the site steam outage or maintenance outages, while the rest is for unplanned outages resulting from equipment failures. This 25% unavailability is factored into the facility's processing rate. Again, using SWPF as an example, after the NGS implementation and subsequent ramp up, SWPF would be capable of processing 1,000,000 gallons of salt feed per month if it operated continuously for the entire month. Applying the availability factor of 75% reduces the "rated" throughput to 750,000 gallons of salt feed per month. For the Tank Farms, the availability of different individual components varies from 50% up to 98%. DWPF has an assumed availability of 78.8% (the actual availability has been as high as 82% in 2019). Saltstone needs to be available at least 38% of the time to support SWPF and TCCR combined. Extensive upgrade projects have recently been completed at Saltstone to increase the facility's availability to 75%. Therefore, the statement in the System Plan could be clarified to: Equipment failures are assumed to be encompassed within a specific facility's unavailable time/downtime; the exception is DWPF Melter Replacement, which is allocated its own outage above and beyond the assumed facility unavailability.

2. This LWSP does not address preventive maintenance for SWPF nor the impact of preventive maintenance for other SRS facilities, such as DWPF and SPF. See Specific Comment #7.

   Response to General Comment #2: See Above. The System Plan assumes that preventive maintenance occurs during the assumed facility downtime or while the facility is operating.

Specific Comments

1. Section 1, Executive Summary, page 1, fifth paragraph. The Plan forecasts that salt processing at SWPF will be completed in 2033. Appendix C1, Sludge Processing, states that a Melter Replacement Outage will occur from October 2028 through January 2029. It does not appear that the Melter Replacement Outage was accounted for in determining the SWPF processing. Based on the projected waste processing information from the Plan, the enclosed table indicates salt waste processing would be completed in November 2034. See the attached table of projected SWPF processing based on this LWSP.

   Response to Specific Comment #1: The System Plan is correct. See attached month-by-month processing breakdown.

2. Table 1-1, Results of Modeled Cases, page 3. Please provide the date in which normal H-Canyon waste will discontinue in the ABD case.

   Response to Specific Comment #2: Normal HLW discards from H-Canyon to Tank 39 have already been discontinued. H-Canyon will continue to discard low volumes (<20,000 gallons per year) of Low Activity Waste (sump discards, etc.) to Tank 39.

3. Section 2.3, Risk Assessment, page 7. Under the second bullet, Aging Infrastructure, might one be able to consider a plausible amount of downtime due to previous problems encountered as a result of this risk?

   Response to Specific Comment #3: See response to General Comment #1 above.

4. Section 2.3, Risk Assessment, page 7. Under the last bullet, DWPF Recycle, it would seem as if the DWPF recycle should be accounted for in the system plan until a final treatment path has been determined.

   Response to Specific Comment #4: The purpose of developing a System Plan is to predict, as accurately as possible, the remaining activities that will be carried out to complete the mission. This often includes assumptions for technologies or facilities that have not yet been deployed or constructed. TCCR is a current example. The Inputs and Assumptions for Rev 20 of the System Plan were developed in 2015 and included a TCCR demonstration while TCCR was still in the conceptual phase. Other examples of technologies/facilities that were included before they were finalized but eventually came to fruition include SWPF, ARP/MCU, Melter Bubblers, NGS, and Glycolic Acid. A few examples of technologies/facilities that have been included in the System Plan but were eventually not pursued are Small Column Ion Exchange (SCIX), Fluidized Bed Steam Reforming (FBSR) to treat Tank 48, and, most recently, DWPF Recycle Diversion.

5. Section 4.3, DWPF Operations, page 13. The second paragraph states that the plan is based on 276 canisters per year to match the SWPF production rate. Why would the canister rate not be based on the total influent to DWPF? Perhaps reword for clarification.

   Response to Specific Comment #5: You are correct. DWPF throughput is set to optimize processing of influents from SWPF (Strip Effluent and MST/Sludge solids). This results in a calculated production of 276 canisters per year.

6. Section 4.3, DWPF Operations, page 14. The first paragraph under the section for Two-step Production Improvement Approach states that process improvements are planned for the DWPF feed preparation system required to support a feed rate greater than 7.2 Mgal per year. Are these improvements adequate to support a feed rate of 9 Mgal per year?

   Response to Specific Comment #6: Yes.

7. Section 4.3, DWPF Operations, page 14. The third paragraph under the section for Two-step Production Improvement Approach states that there will be two one-week outages every year for planned maintenance and a two-week outage every year for a site wide steam outage. Does this also mean that SWPF will be shut down four weeks each year?

   Response to Specific Comment #7: As explained above in the response to General Comment #1, SWPF is expected to be down 3 months of every year (except during the year when Melter replacement occurs in which case SWPF will be down 4 months for Melter replacement and an additional 25% of the remaining 8 months of that year). A portion of this downtime is planned and the remainder is for unplanned outages due to equipment failure.

8. Section 4.3, DWPF Operations, page 14. The fourth paragraph under the section for Failed Equipment Storage Vaults and Melter Storage Boxes stated that the construction of MSB3 is forecast to be competed in FY21. Was this construction completed in FY21?

   Response to Specific Comment #8: Yes.

9. Section 4.5.3, Ancillary Structure Operational Closure and Stabilization, page 21. The first sentence in the last paragraph states, "the Federal FFA…" Delete "Federal."

   Response to Specific Comment #9: Will be corrected in next System Plan revision.

10. Section 4.5.3, Ancillary Structure Operational Closure and Stabilization, page 21. The last sentence of this section states the operational closure of the 1F Evaporator and the associated 242-3F Concentrate Transfer System are planned in the near term. What is the timeline for closure of these ancillary structures?

    Response to Specific Comment #10: DOE to provide desired answer to SCDHEC.

11. Section 4.6.2, DWPF Recycle Handling, page 21. Why would one not assume the worst case of 3.2 Mgal/yr for conservatism for this system plan? Also, why would it no longer be accounted for after FY26 if a disposition path has not been finalized?

    Response to Specific Comment #11: See response to Specific Comment #4 above.

12. Section 6.9, Saltstone Disposition, page 33. The second paragraph in this section states that SWPF feed of up to 13Mgal/yr is expected. How long would SWPF be operated at this processing rate? Can DWPF, SPF, and SDF support operation at this level of waste processing?

    Response to Specific Comment #12: This statement is referring to the DSS feed to Saltstone from all sources which, as shown in Appendix A1 (page 38), is up to 12,533,000 gallons. The statement in the text rounded this up to 13 million gallons.

13. Appendix B1, Tank Farm Influents and Effluents, page 39. The ETF facility listed in this table should be ETP. Footnote C states that after FY23, DWPF recycle will be treated by the ETP. Should this footnote say "after FY26"?

    Responses to Specific Comment #13:

    Yes. Will be corrected in next System Plan revision.

    Please note, this waste stream will need to be listed in the NPDES permit as one of the waste streams discharged at Outfall H-16 when this change occurs.

    Noted.

14. Appendix B2, Tank Farm Influents and Effluents, page 47. The ETF facility listed in this table should be ETP. Footnote C states that after FY23, DWPF recycle will be treated by the ETP. Should this footnote say "after FY26"?

    Responses to Specific Comment #14:

    Yes. Will be corrected in next System Plan revision.

Please note, this waste stream will need to be listed in the NPDES permit as one of the waste streams discharged at Outfall H-16 when this change occurs.

Noted.

Additionally, why are some of the effluent values for DSS to SPF, Sludge to DWPF, and Total Inventory different than the values in Appendix B1 for FY2021 and FY2022?

Slight modeling differences exist between the 2 cases driven by the need to posture the LW system to begin receiving the ABD streams in 2022.

15. Appendix B2 - Tank Farm Influents and Effluents (ABD Case), page 47, footnote b. The last sentence is incomplete. The sentence should read, "The H-Canyon forecast for these materials will be included in future versions of this Plan, as it is made *available.*

Response to Specific Comment #15: Noted.