



Department of Energy
Savannah River Operations Office
P.O. Box A
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NOV - 6 2017

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, SC 29201

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

Dear Ms. Fulmer and Mr. Richards:

SUBJECT: Continued Usage of High-Level Waste Tank 11H, CERCLIS Number: 89

In accordance with the Federal Facility Agreement, this letter is to request your approval for continued usage of Type I Tank 11H for which the Bulk Waste Removal Efforts milestone was previously completed. Enclosed is a technical justification that provides a summary of Tank 11H operational and waste removal history, current status, and planned usage to support the Tank Closure Cesium Removal (TCCR) – Tank 10H Waste Removal Project (TCCR Unit 1). Our immediate proposed usage is for transfers of additional contaminated liquids only (i.e., no appreciable solids) from the discharge of the TCCR Unit 1 technology demonstration into Tank 11H.

As documented in the October 31, 2016, South Carolina Department of Health and Environmental Control (SCDHEC) and U.S. Department of Energy (DOE) signed *Dispute Resolution Agreement for Alleged Violations of Class 3 Industrial Solid Waste Landfill Permit Facility Paragraph 17* provides SCDHEC approval for reuse of Tank 11H to facilitate the implementation of that Agreement which includes our commitment for TCCR Unit 1.

DOE requests your approval, as soon as possible, only for continued usage of Tank 11H to support deployment of TCCR Unit 1.

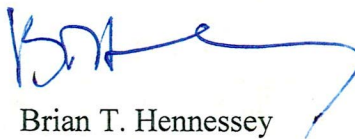
Ms. Fulmer
Mr. Richards

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The effort and time that the SCDHEC and the U.S. Environmental Protection Agency have given on the subject are greatly appreciated. DOE will keep you informed of the transfers and use of Tank 11H during our quarterly Liquid Waste regulatory meetings. Questions from you or your staff may be directed to me at (803) 952-8365, Ms. Jolene Seitz at (803) 208-6234, or Mr. Jeffrey Bentley at (803) 208-7513.

Sincerely,



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

WDED:JKS:lhl

WDPD-18-04

Enclosure:
Technical Justification for
Continued Use of Tank 11H

cc w/encl:

H. H. Cathcart, SCDHEC – Columbia
B. S. Mullinax, SCDHEC-Columbia
J. Dawson, TechLaw, Inc

cc w/o encl:

T. R. Fuss, SCDHEC – Aiken Environmental Affairs Office
M. D. Wilson, SCDHEC-Columbia
J. P. deBessonnet, SCDHEC-Columbia
G. K. Taylor, SCDHEC-Columbia
D. Scaturro, SCDHEC-Columbia
R. H. Pope, EPA-Atlanta

Enclosure
Technical Justification for Continued Use of Tank 11H

ARF-021291

Facts:

- Tank groups designed for infrastructure efficiency and avoidance of redundancy
- Waste transfers out of tanks restricted by infrastructure, transfer route limitations
- Tank 11H
 - Type I tank – nominal capacity 750,000 gallons
 - Designed and serves as hub tank associated with H-Area Tank Farm (HTF) Type I tanks
 - Two known leak sites
 - 25% of the primary tank wall has been inspected
 - Leak sites located at 189 inches and 235 inches above tank floor
 - Both leak sites are dry and stable (i.e., inactive)
 - Liquid level is maintained below 189 inches
 - Trace amounts of salt waste in annulus
 - Bulk Waste Removal Efforts (BWRE) declared completed in May 2011
 - Sludge heel (solids) volume of approximately 18,000 gallons at time of completion of BWRE
 - Added aluminum rich supernate to keep sludge heel hydrated
 - Previously supported waste removal efforts from other tanks
 - Tank 12H heel removal and closure preparations
 - Tank 10H bulk salt waste removal (dissolved salt solution)

Operational and Waste Removal History:

The twelve Type I tanks in both tank farms (Tanks 1F to 8F and 9H to 12H) were the first high-level waste (HLW) storage tanks built and commissioned for use at Savannah River Site. As designed and constructed, there are four underground Type I HLW storage tanks in the HTF in two parallel rows of two tanks. Tanks 9H, 10H, and 12H were designed with transfer jets that discharge to transfer lines connecting to Tank 11H. In order, to serve as the hub tank, Tank 11H was designed as the only HTF Type I tank with underground transfer line connections to diversion boxes.

Tank 11H was commissioned for use and received waste from H-Canyon from 1955 until 1982. The historical maximum waste volume attained was 734,000 gallons. The tank was removed from active service in 1989 until BWRE resumed in 2004.

In May 2011, the U.S. Department of Energy (DOE) declared BWRE completed in Tank 11H and received concurrence from South Carolina Department of Health and Environmental Control (SCDHEC) and U. S. Environmental Protection Agency (EPA).

Need for Continued Usage Post-BWRE:

After declaring BWRE complete, Tank 11H has continued to be beneficially reused to receive and store liquid waste. Previously, to support waste removal in other tanks, Tank 11H received approximately:

Technical Justification for Continued Use of Tank 11H

- 25,000 gallons from Tank 12H during May – June 2012
- 100,000 gallons of dissolved salt cake solution from Tank 10H bulk salt waste removal efforts during May 2013
- 31,000 gallons from Tank 12H waste removal activities during July 2013

On October 31, 2016, SCDHEC and DOE signed the *Dispute Resolution Agreement for Alleged Violations of Class 3 Industrial Solid Waste Landfill Permit Facility* (hereinafter referred to as “the Salt Dispute Agreement”) for the purposes of reaching agreement concerning Special Conditions A.1.d.i-iii of the Class 3 Industrial Solid Waste Landfill Permit (Facility ID# 025500-1603) in effect for the Z-Area Saltstone Disposal Facility. Per paragraph 16 of the Salt Dispute Agreement, DOE agreed to implement several described Supplemental Tank Closure Activities and achieve waste processing amounts as specified. Of particular note are paragraphs 17 and 18. The Salt Dispute Agreement states in paragraph 17 “Tanks 4, 7, and 11 will be used to facilitate the implementation of this Agreement”. Paragraph 18(a) states that for Tank Closure Cesium Removal Unit 1 (TCCR Unit 1) DOE will “Design, construct, install and operate a demonstration unit (TCCR Unit 1) for the removal of cesium from liquid tank waste. TCCR Unit 1 is expected to process approximately 750,000 gallons of liquid waste resulting from the dissolution of saltcake from one of the H-Tank Farm tanks towards achieving DOE’s liquid waste processing obligations specified in paragraph 22 of this Agreement.”

DOE is in the process of designing and constructing TCCR Unit 1 and selected Tank 10H to serve as the initial demonstration for processing liquid waste resulting from the dissolution of salt cake. Based on the current project execution schedule, operation of TCCR Unit 1 for this initial demonstration is anticipated to begin during the third quarter of fiscal year 2018. The decontaminated salt solution discharged from TCCR Unit 1 will be transferred and collected in Tank 11H, the Type I HTF hub tank. It will subsequently be transferred from Tank 11H to the Saltstone Feed Tank, Tank 50H.

As previously discussed with SCDHEC and EPA, the future use of hub tanks that have been declared BWRE completed is needed to support waste removal from other tanks. This requires reuse of Tank 11H to support eventual waste removal (salt cake dissolution as well as future sludge heel) in Tanks 9H and 10H.

Current Status and Path Forward:

Tank 11H contains approximately 100,000 gallons of supernate and 18,000 gallons of sludge. Prior to receiving decontaminated salt solution from TCCR Unit 1, much of the preexisting supernate will be transferred to another waste tank for future treatment. During refilling of Tank 11H with the TCCR discharge, the conductivity probe will be maintained at 145 inches above the tank floor and the liquid level in the tank will be kept below the lowest leak site. Dissolution of the Tank 10H saltcake is anticipated to occur in several batches. The decontaminated salt solution will be collected and stored in Tank 11H until transferred to Tank 50H as space becomes available.

Technical Justification for Continued Use of Tank 11H**Request for Concurrence:**

The Salt Dispute Agreement provided DOE with SCDHEC approval for reuse of Tank 11H to facilitate implementation of that agreement which includes demonstration of the at-tank cesium removal demonstration technology (i.e., TCCR Unit 1). Additionally, SCDHEC Industrial Wastewater Construction Permit No. 20150-IW issued on October 31, 2017, for SRS/Tank Closure Cesium Removal System – Phase 1 also specifies that Tank 11H will be used to receive the discharge from the TCCR Unit 1. DOE is submitting this request for reuse of Tank 11H to comply with the bulk waste removal definition included in Appendix L of the Federal Facility Agreement (FFA). DOE seeks written concurrence from the SCDHEC and EPA FFA Managers for continued usage of Tank 11H to support waste removal efforts from Tank 10H during the TCCR technology demonstration. DOE will continue to provide the status as well as any additional information regarding Tank 10H salt dissolution and removal, use of Tank 11H, and demonstration of the TCCR Unit 1 during our Liquid Waste Program quarterly regulatory meetings.