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Healthy People. Healthy Communities.

October 31, 2017

Patricia M Allen
US DEPT OF ENERGY SAVANNAH RIVER SITE
BLDG 766-H RM 2308
Aiken, SC 29808

Re: Construction Permit No. 20150-IW
SRS/TANK CLOSURE CESIUM REMOVAL SYSTEM - PHASE 1
Aiken County

Dear Patricia M Allen:

Enclosed is a SC Wastewater Construction Permit for the above referenced project. Construction is to be performed in accordance with this permit and supporting engineering report, plans, and specifications approved by this Office.

This system cannot be placed into operation until final approval is granted by the appropriate Bureau of Environmental Health Services (BEHS) Regional Office. Your Regional contact is Joshua C Yon, in the MIDLANDS REGION BEHS AIKEN. This regional office should be notified when construction begins at the following address and phone number: 206 BEAUFORT ST NE, AIKEN SC 29801-4476, 803-642-1637.

Upon completion of any construction, a letter must be submitted to the BEHS Regional Office from the registered engineer certifying that the construction has been completed in accordance with the approved plans and specifications. An inspection may then be scheduled. The BEHS Regional Office will approve the system for operation upon successful completion of this project.

Sincerely,

Barry S. Mullinax

Barry S Mullinax
Industrial Wastewater Permitting Section
Water Facilities Permitting Division

cc: Joshua C Yon, MIDLANDS REGION BEHS AIKEN
Michael B Wood, SRR

Wastewater Construction Permit
Bureau of Water

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PROJECT NAME: SRS/TANK CLOSURE CESIUM REMOVAL SYSTEM - PHASE 1	COUNTY: AIKEN

PERMISSION IS HEREBY GRANTED TO: **US DEPT OF ENERGY SAVANNAH RIVER SITE**
Bldg 766-H Rm 2308
Aiken SC 29808

for the construction of a new wastewater treatment plant in accordance with the construction plans, specifications, engineering report and the Construction Permit Application signed by: Michael B Wood, Registered Professional Engineer, S.C. Registration Number: 22845; Eric A. Anderson; Registered Professional Engineer, S.C. Registration Number: 32165; and Thomas B. Caldwell, Registered Professional Engineer, S.C. Registration Number: 14164.

PROJECT DESCRIPTION:

The Tank Closure Cesium Removal (TCCR) system will use an ion exchange process to remove radioactive cesium-137 from high level waste. This facility is a skid-mounted system on a concrete slab with four ion exchange columns with prefilters, resin trap, Tank 10H pump, hose-in-hose process hoses (6 hoses of varying sizes), and piping and appurtenances.

For Phase 1, the dissolved salt waste in Tank 10H will be transferred to the TCCR unit to remove radioactive cesium-137 at a nominal flowrate of 5 to 10 gpm with a maximum flowrate of 10 gpm (daily maximum rate of 14400 gallons per day) *There will be no discharge of wastewater to Waters of the State.* Processed wastewater (decontaminated salt solution) will be transferred to Tank 11H. Shielded cesium-laden resin columns will be transferred to Interim Safe Storage.

CONDITIONS: See page 2.

In accepting this permit, the owner agrees to the admission of properly authorized persons at all reasonable hours for the purpose of sampling and inspection. This is a permit for construction only and does not constitute DHEC approval, temporary or otherwise, to place the system in operation. An Approval to Place in Operation is required and can be obtained following the completion of construction by contacting the MIDLANDS REGION BEHS AIKEN at 803-642-1637. Additional permits may be required prior to construction (e.g., Stormwater).

PERMIT NUMBER:	**20150-IW**
ISSUANCE DATE:	**October 31, 2017**
EXPIRATION DATES:	**October 31, 2019** (to begin construction) **October 31, 2020** (to obtain Approval to Place in Operation)

Jeffrey P. deBessonet, P.E., Director
Water Facilities Permitting Division

BSM

CONDITIONS

1. This construction permit is in addition to the Tank Farm Permit (Construction Permit No. 17,424-IW).

2. This construction permit is for the treatment of dissolved salt waste in Tank 10H by the TCCR unit to remove radioactive cesium-137 at a minimum decontamination factor of 1,000. Once treatment of Tank 10H dissolved salt waste by TCCR is completed, SRS will have 180 days, unless otherwise approved by the Department, to decide if the TCCR unit will be deployed for another tank or if TCCR will be subject to final closure. If TCCR will be redeployed, TCCR will by placed into a layup configuration until redeployed for another tank. If the layup configuration requires modifications other than column removal, revised drawings will be required to be submitted to the Department for review and approval prior to being modified. After Department approval and modifications are completed, the District Engineer will be requested to perform an inspection to verify that an acceptable configuration has been achieved while the TCCR unit is awaiting future deployment. If no physical changes are required, the Department shall be notified by letter and the District Engineer will not be required to perform an inspection of the layup configuration. If TCCR is to be redeployed, see Condition #3. If TCCR will not be redeployed, see Condition #4.

3. The treatment of Tank 10H waste by TCCR will be Phase 1. Subsequent deployment of TCCR for other HLW tanks will represent an additional phase for each additional tank to be treated. For each subsequent deployment of TCCR, a letter shall be submitted to SCDHEC for review and approval. If the redeployment is approved, the Department will issue a Letter of Approval (LOA) for the next phase. The updated information in the submittal letter for the next TCCR phase will:

    a. Identify the new location of the TCCR unit, if necessary.

    b. Identify the tank containing dissolved salt waste to be treated.

    c. Identify the receipt tank for the decontaminated salt solution.

    d. Provide revised or new plans and specifications for a required modification if the TCCR configuration for the additional phase is not consistent with the approved design including drawings and specifications.

    e. Include a statement that TCCR complies with the current Documented Safety Analysis (DSA) or the revised DSA .

    f. Include new calculations, if needed.

    g. Obtain written SCDHEC approval for the new deployment of the TCCR unit before making any modifications for the new phase.

    h. After installation is completed for the new phase, request an inspection by the District Engineer for the TCCR configuration for the new deployment.

    i. Obtain an Approval to Place into Operation (APO) from the District Engineer before TCCR can process the dissolved salt waste in the new Tank.

4. In accordance with Regulation 61-67, Standards for Wastewater Facility Construction, the TCCR system shall be closed out within 180 days, unless otherwise approved by the Department, when a phase is completed and the decision has been made that no other TCCR deployments will be made. Closure of wastewater

treatment facilities necessitates the submittal of a closure plan and approval of the plan by the Department in accordance with R.61-82 prior to closure of any wastewater treatment unit(s).