Please file as a record document for Construction Permit No 16,783-IW

Barry

dhec

WASTEWATER

FINAL APPROVAL TO PLACE INTO OPE

ISSUED TO: US DEPARTMENT OF ENERGY
SAVANNAH RIVER SITE
BUILDING 705-3C
AIKEN SC 29808

for the operation of a wastewater treatment/collection system permitted under Construction Permit No. 20,234-IW, dated November 1, 2018.

PROJECT NAME: SRS/SALT WASTE PROCESSING FACILITY (SWPF) Final Tie-Ins

COUNTY: Aiken

PROJECT DESCRIPTION: The Salt Waste Processing Facility (SWPF) is designed to extract and concentrate cesium, strontium, and actinides from salt wastes in the tank farms resulting in effluents that are acceptable for treatment at the Defense Waste Processing Facility (DWPF) and the Saltstone Production Facility (SPF). Attachment A provides a list of equipment.

The effluent concentrations of those constituents the wastewater treatment system is designed to remove or reduce for wastewater transferred to Tank 50 to the SPF are contained in Construction Permit No. 18,801-IW for the SPF. The solid waste from the SPF will be disposed in the Saltstone Disposal Facility (SDF) in accordance with Solid Waste Industrial Permit #025500-1603. The wastewater sent to the DWPF will be vitrified and poured into canisters that are transferred to the Glass Waste Storage Buildings.

PERMITTED FLOW: System Nominal Daily Flow: 35,840 gallons per day
System Design Capacity Flow: 185,736 gallons per day

WWTP: US DOE/SAVANNAH RIVER SITE Salt Waste Processing Facility (SWPF)

SPECIAL CONDITIONS:

1. This permit is in addition to Construction Permit No. 19,219-IW (Salt Waste Processing Facility (SWPF)), Construction Permit No. 20,194-IW (SWPF NGS Cold Chemical Feed Facility), Construction Permit No. 18,801-IW (Saltstone Production Facility (SPF)), Construction Permit No. 17,424-IW (F-Area and H-Area Tank Farms), and Construction Permit No. 16,783, Defense Waste Processing Facility.

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2. The jumpers that will tie the SWPF in with the SPF and DWPF are permitted by this construction permit. There shall be no radioactive salt solution received from the High Level Waste (HLW) tanks for processing and transfer to the DWPF and/or the SPF until these jumpers have been installed and the Department has issued the Approval to Place into Operation for this construction permit.

This approval is based on the APO request letter (SRR-ESH-2019-00118) signed by Ms. Patricia M. Allen. Note that Attachment 1 is the Engineer's letter of certification (signed by Andrew R. Redwood, P.E., South Carolina Registration No. 20525).

Barry S. Mullinax

Barry S. Mullinax, Engineer
(for) Environmental Affairs
AIKEN EA OFFICE

Date Issued: October 29, 2019

cc: Bureau of Water Permitting File – Construction Permit No. 20,234-IW
Bureau of Water Permitting File – Construction Permit No. 19,219-IW
Bureau of Water Permitting File – Construction Permit No. 20,194-IW
Bureau of Water Permitting File – Construction Permit No. 18,801-IW
Bureau of Water Permitting File – Construction Permit No. 17,424-IW
Bureau of Water Permitting File – Construction Permit No. 16,783-IW
Travis Fuss, Aiken EA Office
Crystal Robertson, Aiken EA Office
Shawn M. Clarke, BOW, Columbia Office
Crystal Rippy, BOW – Columbia Office
Andrew Redwood, P.E.,SRR

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Attachment A Equipment List

The equipment included in Construction Permit No. 20,234-IW is listed below:

1. Transfer Line SDP1 and Jumper 6-7(SPP2)2 for Raw Salt Solution (RSS) Transfer Line
2. Jumper 6-7(SPP3)3 for Strip Effluent (SE) Waste Transfer Line
3. Jumper 3(SPP3)15 for Monosodium Titanate Precipitate (MSTPCP) Waste Transfer Line
4. Transfer lines DSS-0077, SSP077, and WTS-SSP4 for the Decontaminated Salt Solution to Tank 50 and the Saltstone Production Facility.

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Healthy People. Healthy Communities.

September 24, 2019

Put in file for Construction Permit No. 16,783 BSM

Ms. Patricia M. Allen, Director
Savannah River Remediation, LLC
Bldg-766H, Room 2308
Aiken, SC 29808

RE: (1) Letter, Patricia M. Allen (SRR) to Barry S. Mullinax (SCDHEC), *Request for Reclassification of Salt Waste Processing Facility Operator Classification,* SRR-ESH-2019-00108, Dated September 23, 2019
(2) Letter, M. F. Sadler to W.L. Payne, *Wastewater Treatment Plant Classification for Specialized Facilities at SRS*, Dated August 14, 1995.

Dear Ms. Allen:

In Reference 1, SRR submitted a letter to request that the State-certification Classification for operators of specialized radioactive waste treatment facilities at SRS be established as "Not Applicable". This classification was previously established by South Carolina Department of Health and Environmental Control (SCDHEC) in Reference 2. The Department agrees with your request since the operator classifications in the South Carolina Pollution Control Act, Section 48-1-110, do not address the SRS specialized radioactive waste treatment facilities. This "NA" classification applies to the following SRS waste treatment facilities: (e.g., the Actinide Removal Process (ARP), the Modular Caustic Side Solvent Extraction Unit (MCU), the Defense Waste Processing Facility (DWPF), the Saltstone Production Facility (SPF), the Salt Waste Processing Facility (SWPF), and the Tank Closure Cesium Removal (TCCR) facility. While there are no State-certification classifications for operators of the SRS specialized radioactive waste treatment facilities, the Department of Energy (DOE) requires that operators of these specialized SRS treatment facilities receive training and obtain qualifications required by the appropriate administrative procedures. As SCDHEC has previously acknowledged (See Reference 2), the successful completion of the required training and qualification program is considered as an appropriate certification for operators of these SRS facilities.

It should be noted that the South Carolina Pollution Control Act, Section 48-1-110, requirements apply to the Effluent Treatment Project (ETP) and the DWPF Chemical Treatment Facility (through the Central Sanitary Wastewater Treatment Facility). Therefore, State-certified operators of the appropriate grade are required for these facilities.

Please contact me at 803-898-4012 or at mullinbs@dhec.sc.gov if you have any questions and/or comments.

Sincerely,

Barry Mullinax

Barry Mullinax, P.E.
Industrial Wastewater Permitting Section

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cc (via e-mail): Keith Liner, SRR
Shawn Clarke, SCDHEC - Columbia
Crystal Rippy, SCDHEC - Columbia
Crystal Robertson, SCDHEC - Aiken Office

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

CONSTRUCTION PERMIT

Permission is hereby granted to: Westinghouse-Savannah River Company S-Area
P.O. Box 616
Aiken, S.C.
29802

for the construction of a waste treatment and/or collection system in accordanced with construction plans, specifications, engineering report and Construction Permit Application signed by John William Nelson, Ninh An Dzoan, **Registered Professional Engineer, S.C. Registration No.:** 4448, 11559.

Project Description: (See Attachment)

Effluent to be discharged to N/A(Effluent will be recycled to the H-Area Tank Farm) (Stream or Existing System) **in the** N/A **basin at a daily rate not to exceed** N/A **gallons per day. County in which project is located:** Aiken **Coordinates of the discharge point:** N/A (to nearest five seconds)

Effluent concentrations of those constituents the system is designed to remove or reduce will be as follows:

N/A

Special Conditions: (See Attachment)

Permit No.: 16,783 **Date of Issue:** November 9, 19 90

Expiration Date: Unless construction is initiated prior to November 9, 1991, **it will be necessary to reapply since this permit will no longer be valid.**

Treatment Plant Classification: Group IV-P/C.

In accepting this permit, the owner agrees to the admission of properly authorized persons at all reasonable hours for the purposes of sampling and inspection.

THIS IS A PERMIT FOR CONSTRUCTION ONLY AND DOES NOT CONSTITUTE STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL APPROVAL, TEMPORARY OR OTHERWISE, TO PLACE THIS SYSTEM IN SERVICE.

JBR/LEA/jf

J. Bart Rutt P.E.

Bureau of Water Pollution Control

DHEC #1916 (7/85) [5/87]

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

November 9, 1990

Mr. J.S. Roberts
Environmental Protection Section
Westinghouse-Savannah River Company
P.O. Box 616
Aiken, S.C.
29802

Re: Construction Permit #16,783
SRS S-Area
Aiken County

Dear Sir:

Enclosed is a State Construction Permit for the above-referenced wastewater treatment facility. The conditions of the permit are explicitly stated: construction is to be performed in accordance with this permit and the supporting engineering report, plans and specifications approved by this Office.

Your District Environmental Engineer from this Department is Kim Cauthen (address below). He, along with this Division of the SC Department of Health and Environmental Control, should be notified when construction has begun and when the facility is ready for operation. A final inspection must be made before the treatment facility is placed in operation. At the time of this inspection, you must submit a letter from a registered engineer certifying that the construction has been completed in accordance with the approved plans and specifications.

In accordance with State Law, your facility will be required to have an operator-in-charge who has been certified by the SC Environmental Certification Board. Your facility has been classified in Group IV-P/C, necessitating an operator holding a Grade A-P/C or higher certificate. You will not be given permission to operate your facility until a properly qualified operator(s) has been obtained. Questions in this matter should be directed to William R. Moore, SC Environmental Certification Board, 2221 Devine Street, Suite 320, Columbia, SC 29205.

Sincerely,

J. Bart Ruiter P.E.

J. Bart Ruiter, P.E., Director
Industrial & Agricultural
Wastewater Division

Address of District Engineer:
117 Marion St., NE, Aiken, S.C.

JBR/LEA/jf

cc: Kim Cauthen, Lower Savannah EQC

Project Description

The DWPF Vitrification Facility is to batch treat the tank sludge and ITP precipitate slurries which will be generated from the F and H-Area Tank Farm initial treatment operations. The DWPF Vitrification Facility treatment process is a "closed-loop" operation and is designed to remove organics, mercury, and radioactive/non-radioactive solids from the wastewater. The non-volatile radioactive/non-radioactive solids will be vitrified into a solid glass matrix for off-site disposal at the High-Level-Radioactive-Waste Federal Geological Repository. Volatile organics which are generated during the treatment process will be collected and transferred to the Organic Waste Storage Tank (OWST) for temporary storage prior to being incinerated at the CIF. Mercury is to be reclaimed from the wastewater and purified for reuse at SRS facilities. Wastewater generated during the process will be collected in the treated aqueous recycle system and transferred through the S and H Interarea Transfer Line back to the H-Area Tank Farm.

There are four process cells within the canyon portion of the DWPF Vitrification Facility. These cells include the Salt Process Cell, the Chemical Process Cell, the Melt Cell, and the Mercury Purification Cell.

Salt Cell

The Salt Cell is designed to treat the precipitate slurry from the ITP process. Within the Salt Process Cell, the precipitate slurry will be separated into an organic stream which is low in radioactivity, and an aqueous slurry containing the radionuclides which were in the precipitate slurry. Volatile organics generated in this cell will be transferred to the Organic Waste Storage Tank (OWST) prior to being incinerated at the CIF. Major component detail is as follows:

1. Precipitate Reactor Feed Tank (PRFT)
   a. 7000 gallon capacity
   b. dimensions: 16'3" high x 10' diameter
   c. Input/Output:
      Input from: F/H Tank Farm
      Output to: PT
      Overflow to: salt cell sump then to precipitate reactor.
   d. Transfer Pump Specification: 15 hp, 20 gpm.
   e. Ancillary components:
      20hp agitator
      60gal oil drain catch tank
      255sq.ft. cooling coil
      associated piping

2. Precipitate Reactor (PR)
   a. 7000 gallon capacity
   b. dimensions: 16'3" high x 10' diameter
   c. Input/Output:
      Input lines from: PRFT, PRCD, feed chemical tanks
      Output to: PRCD, PRBT
      Overflow to: salt cell sump then to precipitate reactor.
   d. Transfer Pump Specification: 7.5 hp, 100 gpm.

e. Ancillary components:
166sq.ft. cooling coil
255sq.ft. heating coil
associated piping

3. Precipitate Reactor Condenser-Decanter (PRCD)
   a. 500 gallon capacity
   b. dimensions: 10' high x 3'diameter
   c. Input/Output:
      Input from: PR, OE, OECT
      Output to: SCVC, OE, PR, SMECT
      Overflow to: NA
   d. Transfer Pump Specification: NA
   e. Ancillary components:
      576sq.ft. cooling coil
      associated piping

4. Organic Evaporator (OE)
   a. 700 gallon capacity
   b. dimensions: 11' high x 5' diameter
   c. Input/Output:
      Input from: PRCD, SCVC, OECD
      Output to: OECD, PRCD
      Overflow to: Salt Cell sump which then returns to the precipitate reactor.
   d. Transfer Pump Specification: 3.0 hp, 5 gpm.
   e. Ancillary components:
      2hp agitator
      15sq.ft. cooling coil
      51sq.ft. heating coil
      associated piping

5. Organic Evaporator Condenser-Decanter (OECD)
   a. 500 gallon capacity
   b. dimensions: 10' high x 3' diameter
   c. Input/Output:
      Input from: OE, SCVC, OECT
      Output to: SCVC, OE, OECT
      Overflow to: NA
   d. Transfer Pump Specification: NA
   e. Ancillary components:
      576sq.ft. cooling coil
      associated piping

6. Organic Evaporator Condensate Tank (OECT)
   a. 370 gallon capacity
   b. dimensions: 6'6" high x 4'6" diameter
   c. Input/Output:
      Input from: OECD
      Output to: SCVC, OECD, PRCD, OWST
      Overflow to: NA
   d. Transfer Pump Specification: 3 hp, 10 gpm.

e. Ancillary components:
associated piping

7. Salt Cell Vent Condenser (SCVC)
   a. 370 gallon capacity
   b. dimensions: 7'9" high x 3'6" diameter
   c. Input/Output:
      Input from: PRCD, OECD, OECD
      Output to: OE, PVVH
      Overflow to: NA
   d. Transfer Pump Specification: 3 hp, 10 gpm.
   e. Ancillary components:
      584sq.ft. cooling coil
      associated piping

Chemical Process Cell

Upon completion of the batch reaction in the PR, the aqueous bottoms from the PR will be transferred to the Chemical Process Cell and into the Precipitate Reactor Bottoms Tank. Within this cell, the precipitate slurry will be mixed with the sludge slurry from the F and H-Area Tank Farms. The Chemical Process Cell functions to receive the aqueous bottoms and the tank farm sludge for preparation and transfer to the Glass Melter. Major component detail is as follows:

1. Precipitate Reactor Bottoms Tank (PRBT)
   a. 11000 gallon capacity
   b. dimensions: 18' high x 12'diameter
   c. Input/Output:
      Input from: PR
      Output to: SRAT, FAVC
      Overflow to: Chemical cell sump then to recycle collection tank.
   d. Transfer Pump Specification: 20 hp, 100 gpm.
   e. Ancillary components:
      20hp agitator
      161sq.ft. cooling coil
      associated piping

2. Sludge Receipt and Adjustment Tank (SRAT)
   a. 11000 gallon capacity
   b. dimensions: 18' high x 12' diameter
   c. Input/Output:
      Input from: H-Area Tank farm, PRBT, MWWT
      Output to: SMECT, FAVC, MWWT
      Overflow to: Chemical cell sump then to recycle collection tank.
   d. Transfer Pump Specification: 20 hp, 100 gpm.
   e. Ancillary components:
      100hp agitator
      60gal oil drain catch tank

1gpm Hg transfer pump
2'diameter x 10.5' high condenser
182sq.ft. cooling coil
306sq.ft. heating coil
associated piping

3. Slurry Mix Evaporator-Condenser (SMEC)
   a. 11000 gallon capacity
   b. dimensions:
      evaporator: 18' high x 12' diameter
      condenser: 2' diameter x 10.5' high
   c. Input/Output:
      Input from: SRAT, frit storage & recycle
      Output to: FAVC, MFT, SMECT
      Overflow to: Chemical cell sump then to recycle collection tank.
   d. Transfer Pump Specification: 20 hp, 100 gpm.
   e. Ancillary components:
      100hp agitator
      60gal oil drain catch tank
      100gpm sample pump
      associated piping

4. Slurry Mix Evaporator Condensate Tank (SMECT)
   a. 11000 gallon capacity
   b. dimensions: 18' high x 12' diameter
   c. Input/Output:
      Input from: SME, FAVC, MWWT, Hg from CPC & SPC tanks
      Output to: MWWT, FAVC, RCT
      Overflow to: Chemical cell sump then to recycle collection tank.
   d. Transfer Pump Specification: 20 hp, 100 gpm.
   e. Ancillary components:
      100gpm sample pump
      associated piping

5. Mercury Water Wash Tank (MWWT)
   a. 110 gallon capacity
   b. dimensions: 3'6" high x 3'0" diameter
   c. Input/Output:
      Input from: SRAT, SMECT
      Output to: MAWT, SMECT, SRAT, RCT
      Overflow to: NA
   d. Transfer Pump Specification: 1 gpm.
   e. Ancillary components:
      1gpm Hg pump
      associated piping

6. Formic Acid Vent Condenser (FAVC)
   a. 500 gallon capacity
   b. dimensions: 13'6" high x 2' diameter
   c. Input/Output:

Input from: SME, SRAT, PRBT, SMECT, MFT
Output to: Process vessel vent header
Overflow to: NA

d. Transfer Pump Specification: NA
e. Ancillary components:
230sq.ft. cooling coil
associated piping

7. Melter Feed Tank (MFT)
a. 11000 gallon capacity
b. dimensions: 18' high x 12' diameter
c. Input/Output:
Input from: SME
Output to: FAVC, Glass melter
Overflow to: Chemical cell sump then to the recycle collection tank.
d. Transfer Pump Specification: 15 hp, 100 gpm.
e. Ancillary components:
100hp agitator
60gal oil drain catch tank
100gpm sample pump
2- 100 gpm feed pumps
323sq.ft. cooling coil
associated piping

8. Recycle Collection Tank (RCT)
a. 11000 gallon capacity
b. dimensions: 14.5' high x 12' diameter
c. Input/Output:
Input from: SMEC, DWTT, Stack and sand filter, off-gas treatment system.
Output to: FAVC, H-Area tank farm
Overflow to: Chemical cell sump then to the recycle collection tank.
d. Transfer Pump Specification: 10 hp, 100 gpm
e. Ancillary components:
20hp agitator
60gal oil drain catch tank
20hp, 100gpm sample pump
161sq.ft. cooling coil
associated piping

9. Decontamination Waste Treatment Tank (DWTT)
a. 11000 gallon capacity
b. dimensions: 18' high x 12' diameter
c. Input/Output:
Input from: Lab sinks, SWT
Output to: PVVH, RCT
Overflow to: DWTT sump then returned to DWTT
d. Transfer Pump Specification: 10 hp, 80 gpm.
e. Ancillary components:
100hp agitator

60gal oil drain catch tank
2' diameter x 14' high reflux condenser
306sq.ft. cooling coil
182sq.ft. heating coil
associated piping

Melt Cell

The Melt Cell (MC) will receive the concentrated slurry/glass frit mixture. It is in the MC that the vitrification processes of drying, calcining, and melting will occur. The process will culminate when borosilicate glass is poured into stainless steel waste containers. The gaseous wastes produced within the glass melter will be processed in the melter off-gas system. The gases will be quenched, condensed, scrubbed, passed through a High Efficiency Mist Eliminator, reheated, and passed through two High Efficiency Particulate Air Filters (HEPA) placed in series. The emissions will then be passed through a common sand filter and stack with the gases from the Process Vessel Vent System and the cell ventilation exhaust. Major component detail is as follows:

1. Glass Melter (GM)
   a. 1440 gallon capacity
   b. dimensions: 14' high x 10' diameter
   c. Input/Output:
      Input from: melter feed tank
      Output to: Stainless steel canisters, OGCT
      Overflow to: NA
   d. Transfer Pump Specification: NA
   e. Ancillary components:
      associated piping

2. Two(2) Off-Gas Condensate Tanks (one is backup) (OGCT)
   a. 11000 gallon capacity
   b. dimensions: 18'high x 12'diameter
   c. Input/Output:
      Input from: GM, various components of the off-gas treatment system.
      Output to: RCT
      Overflow to: NA
   d. Transfer Pump Specification: 10 hp, 100 gpm.
   e. Ancillary components:
      20hp agitator
      60gal oil drain catch tank
      15hp, 58gpm sample pump
      20hp, 120gpm quencher pump
      20hp, 70gpm melter spout pump
      20hp, 32gpm scrubber pump
      associated piping

The following are the major components of the Off-Gas system:

1. Quencher
   dimensions: 2'diameter x 7'high
   Ancillary components:
   associated piping

2. seal pot
   dimensions: 4'diameter x 10'high
   Ancillary components:
   associated piping

3. 2 stage atomized scrubber
   dimensions: 78"x 39" center to center and 95" high
   Ancillary components:
   associated piping

4. Off-Gas Condenser
   dimensions: 22"diameter x 9'7" high
   Ancillary components:
   14"diameter x 6"high de-entrainer
   associated piping

5. High Efficiency Mist Eliminator (HEME)
   dimensions: 84" diameter x 85.75" T-T
   Ancillary components:
   2.5gpm, 25micron water filter
   associated piping

Mercury Purification Cell

Mercury collected within the Salt Process Cell and the Chemical Process Cell will be transferred to the SMECT where it will be collected and subsequently pumped into the MWWT. Mercury which is recovered from the SRAT operation will collect directly in the MWWT. The accumulated mercury/water mixture will be transferred from the MWWT to the Mercury Acid Wash Tank (MAWT) in the Mercury Purification Cell. Within the MAWT, the mercury/water mixture will be washed with nitric acid and agitated with air. Following the washing process, the mercury will be allowed to settle prior to being transferred to the Acid Scrub Column where it will be scrubbed by a countercurrent flow of nitric acid. The mercury stream proceeds through the Water Wash Column where a countercurrent flow of water will be used to remove the nitric acid. The mercury will be transferred to a hold tank for storage and sampling. If the radioactive levels are low, the mercury will be transferred to the Mercury

Feed Flash for temporary storage prior to being distilled within the Vacuum Still. The mercury vapor from the distillation unit will be condensed and stored in containers. The used nitric acid, wastewater, and residual mercury from the purification process will be drained to the Spent Wash Tank. These waste materials will be sent to the Decontamination Waste Treatment Tank. The following are major components of the Mercury Purification Cell:

1. Mercury Acid Wash Tank (MAWT)
   a. 23 gallon capacity
   b. dimensions: 20.5" high x 20" diameter
   c. Input/Output:
      Input from: MWWT
      Output to: SWT, MASC
      Overflow to: NA
   d. Feed Pump Specification: 1/4hp, 2 1/2gpm
   e. Ancillary components:
      associated piping

2. Spent Wash Tank (SWT)
   a. 48 gallon capacity
   b. dimensions: 28.5" high x 24" diameter
   c. Input/Output:
      Input from: MAWT, MASC, MWWC, MHT, Mercury feed flask
      Output to: DWTT
      Overflow to: NA
   d. Ancillary components:
      associated piping

3. Mercury Hold Tank (MHT)
   a. 11 gallon capacity
   b. dimensions: 13.5" high x 18" diameter
   c. Input/Output:
      Input from: MWWC
      Output to: SWT, Mercury feed flask
      Overflow to:
   d. Transfer Pump Specification: 20 hp, 100 gpm.
   e. Ancillary components:
      associated piping

4. Mercury Water Wash Column (MWWC)
   a. dimensions: 2"diameter x 36" high
   b. Input/Output:
      Input from: MASC
      Output to: MHT, SWT
   c. Ancillary components:
      2.5gpm, 1/2 hp feed pump
      associated piping

5. Mercury Acid Scrub Column (MASC)
   a. dimensions: 2"diameter x 36"high
   b. Input/Output:
      Input from: MAWT

Output to: MWWC, SWT
c. Ancillary components:
2.5gpm, 1/2hp feed pump
associated piping

6. Mercury Vacuum Still (MVS)
a. condenser dimensions: 2.5"diameter x 8"high
b. Input/Output:
Input from: mercury feed flasks
Output to: mercury storage
c. Ancillary components:
890 PCU/HR, 1600W, 1/4hp refrigerated circulator
2.5liter/min, 1/3 hp vacuum pump

The following tanks store and provide chemical feed to various processes in the DWPF. Each tank has associated pumps and piping.

1. 600gal Hydroxylamine Nitrate Feed Tank
2. 600gal Sodium Nitrite Feed Tank
3. 600gal 90% Formic Acid Feed Tank
4. 600gal Caustic Feed Tank
5. 600gal Nitric Acid Feed Tank
6. 100gal Nitric Acid Dilution Tank
7. 180gal Catalyst Feed Tank
8. 2500gal Process Frit Slurry Feed Tank
9. 180gal Additive Mix/Feed Tank
10. 100gal Off-Gas Chemical Feed Tank

Special Conditions

1. The permittee shall maintain at the permitted facility a complete Operations and Maintenance Manual for the waste treatment plant. The manual shall be made available for on-site review during normal working hours. The manual shall contain operation and maintenance instructions for all equipment and appurtenances associated with the waste treatment plant. The manual shall contain a general description of the treatment process(es), operating characteristics that will produce maximum treatment efficiency and corrective action to be taken should operating difficulties be encountered.

2. The permittee shall provide for the performance of routine daily treatment plant inspections by a certified operator of the appropriate grade. The inspection shall include, but is not limited to, areas which require a visual observation to determine efficient operations and for which immediate corrective measures can be taken using the O & M manual as a guide. All inspections shall be recorded and shall include the date, time and name of the person making the inspection, corrective measures taken, and routine equipment maintenance, repair, or replacement performed. The permittee shall maintain all records of inspections at the permittee facility and the records shall be made available for on-site review during normal working hours.

3. The permittee shall develop and implement a Best Management Practices (BMP) Plan to identify and control the discharge of significant amounts of oils and the hazardous and toxic substances listed in 40 CFR Part 117 and Tables II and III of Appendix D to 40 CFR Part 122. The plan shall include a listing of all potential sources of spills or leaks of these materials, a method for containment, a description of training, inspection and security procedures, and emergency response measures to be taken in the event of an unexpected or undesired discharge from this facility. Sources of such discharges may include materials storage areas; in-plant transfer, process and material handling areas; loading and unloading operations; and waste storage areas. The BMP plan shall be developed in accordance with good engineering practices, shall be documented in narrative form, and shall include any necessary plot plans, drawings, or maps. The BMP plan shall be developed no later than six months after issuance of the final permit (or modification), and shall be implemented no later than one year after issuance of the final permit. The BMP plan shall be maintained at the plant site and shall be available for inspection by EPA and Department personnel.

4. Disposal of all waste oils shall meet all requirements of SCDHEC's Bureau of Solid and Hazardous Waste Management. Prior written approval must be obtained before any disposal activities are initiated.

5. Within twelve (12) months after beginning the "Hot Operations" the permittee shall submit to the Department a report on the quality of the waste or product (both solid and liquid where applicable) from each major step of the process. The report shall compare the actual results to the desired results. The report shall also discuss areas in the process in which the quality of waste anticipated was not achieved, any effects on the desired final product, and any corrective measures needed or anticipated to achieve an acceptable borisilicate glass waste.

6. The permittee shall notify the Department in writing within one (1) month of the capacity of the Organic Waste Storage Tank (OWST) reaching the point where one (1) year of storage remains. The notification shall include the reason organic waste is accumulating in the OWST and a schedule for action necessary to free OWST storage volume.

7. Within Three (3) months after the issuance of this permit, the permittee shall submit to the Department, for its review and approval, plans and specifications for the Temporary Glass Waste Storage Facility.

8. Prior to initiating the cold chemical runs, the permittee shall submit to the Department for its review and approval, a report detailing the chemical runs. This report shall include the purpose for the chemical runs, any modifications or changes to the permanent treatment system necessary to accommodate the chemical runs, the location of test chemical addition to the system, disposal of wastes generated during the chemical runs, and number and duration of the chemical runs.

9. Within six (6) months after beginning the cold chemical runs and every six (6) months thereafter, until the chemical runs are completed, the permittee shall submit to the Department a report on the results of the runs. This report shall include the anticipated results of the chemical runs and any major variations from the anticipated results. The report should also address any changes or modifications to the treatment system deemed necessary as a result of the chemical runs.

10. The permittee shall notify the Department within six (6) months of the Temporary Glass Waste Storage Facility reaching the point where two (2) years of canister storage remains. The notification shall include an update of any changes in when canisters will be transferred to the Permanent Federal Repository. The permittee shall also include a report on conditions in the Temporary Glass Waste Storage Facility including any maintenance and/or operations problems which may have occurred during facility loading. Any additional glass waste storage must receive prior approval from this Department.