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SRMC-CWDA-2026-00058
Revision 0

Proposal to Cease Waste Removal Activities in H-Area Diversion Box 3 and Enter Sampling and Analysis Phase

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Waste Disposal Authority
September 10, 2026

Presentation Outline

- Meeting Objective
- Summary/Recommendations
- Background
  - *Ancillary Structures*
  - *Diversion Boxes*
- H-Area Diversion Box 3 (HDB-3) Current Status
- Cleaning Considerations
- Performance Assessment Assumptions
- Path Forward
- Request for Department of Energy (DOE), South Carolina Department of Environmental Services (SCDES), and Environmental Protection Agency (EPA) Concurrence
- Background

Acronyms

ALT	Alternate	LWTRSAPP	Liquid Waste Tank Residuals Sampling and Analysis Program Plan
CGCP	Consolidated General Closure Plan	LWTRS-QAPP	Liquid Waste Tank Residuals Sampling Quality Assurance Program Plan
CM	Closure Module	MCL	Maximum Contaminant Level
CMA	Closure Module Addendum	PA	Performance Assessment
CTS	Concentrate Transfer System	PCWR	Preliminary Cease Waste Removal
DOE	Department of Energy	PO	Performance Objective
EPA	Environmental Protection Agency	RBOF	Receiving Basin for Offsite Fuel
ESD	Explanation of Significant Difference	RRF	Resin Regeneration Facility
FCR	Final Configuration Report	Rvw	Review
FFA	Federal Facility Agreement	S&A	Sampling and Analysis
FTF	F-Tank Farm	SCDES	South Carolina Department of Environmental Services
HDB-3	H-Area Diversion Box 3	SCDHEC	South Carolina Department of Health and Environmental Control
HPP	H-Tank Farm Pump Pit	STD	Standard
HPT	H-Tank Farm Pump Tank	WAC	Waste Acceptance Criteria
HTF	H-Tank Farm	WD/I	Walkdown Inspection
I.D.	Inside Diameter		

[1]South Carolina Department of Environmental Services (SCDES) was known as South Carolina Department of Health and Environmental Control (SCDHEC) prior to July 1, 2024. Throughout this presentation figures and text reproduced from existing documents may still reflect SCDHEC nomenclature.

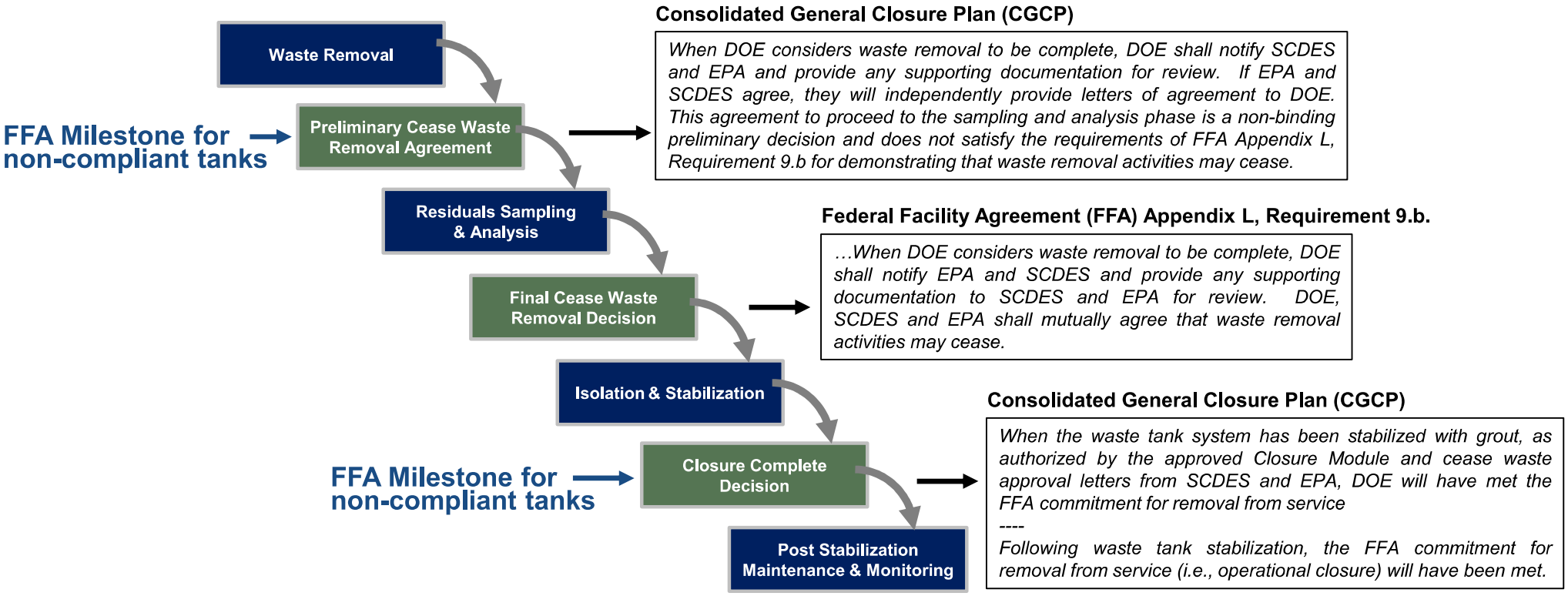
Meeting Objective

- **Obtain mutual agreement among DOE, SCDES, and EPA to:**

1. **Suspend waste removal activities in HDB-3**
2. **Enter the Sampling and Analysis phase in HDB-3 consistent with the *Consolidated General Closure Plan for F-Area and H-Area Waste Tank Systems (CGCP)* and *Liquid Waste Tank Residuals Sampling and Analysis Program Plan (LWTRSAPP)***



Tank and Ancillary Structure Closure Process



Summary

- No process waste has been observed in the HDB-3 vault and no history of transfer line leakage in the HDB-3 vault
- A qualitative assessment indicates that the CGCP performance objectives will not be challenged
- HDB-3 is not a significant contributor to doses in the H-Area Tank Farm (HTF) Performance Assessment (PA) and waste removal efforts would have limited, if any, impact on estimated doses/performance objectives
- Waste removal activities in HDB-3 would have negative impact on other Liquid Waste System risk reduction activities
- A quantitative assessment utilizing final residual inventories will be included in the Closure Module covering HDB-3
- A formal discussion on the “practicability” of waste removal will be included in the Closure Module covering HDB-3

Performance Objectives

Based on the characteristics and estimated inventory of the waste remaining in HDB-3, performance objectives are expected to be met.

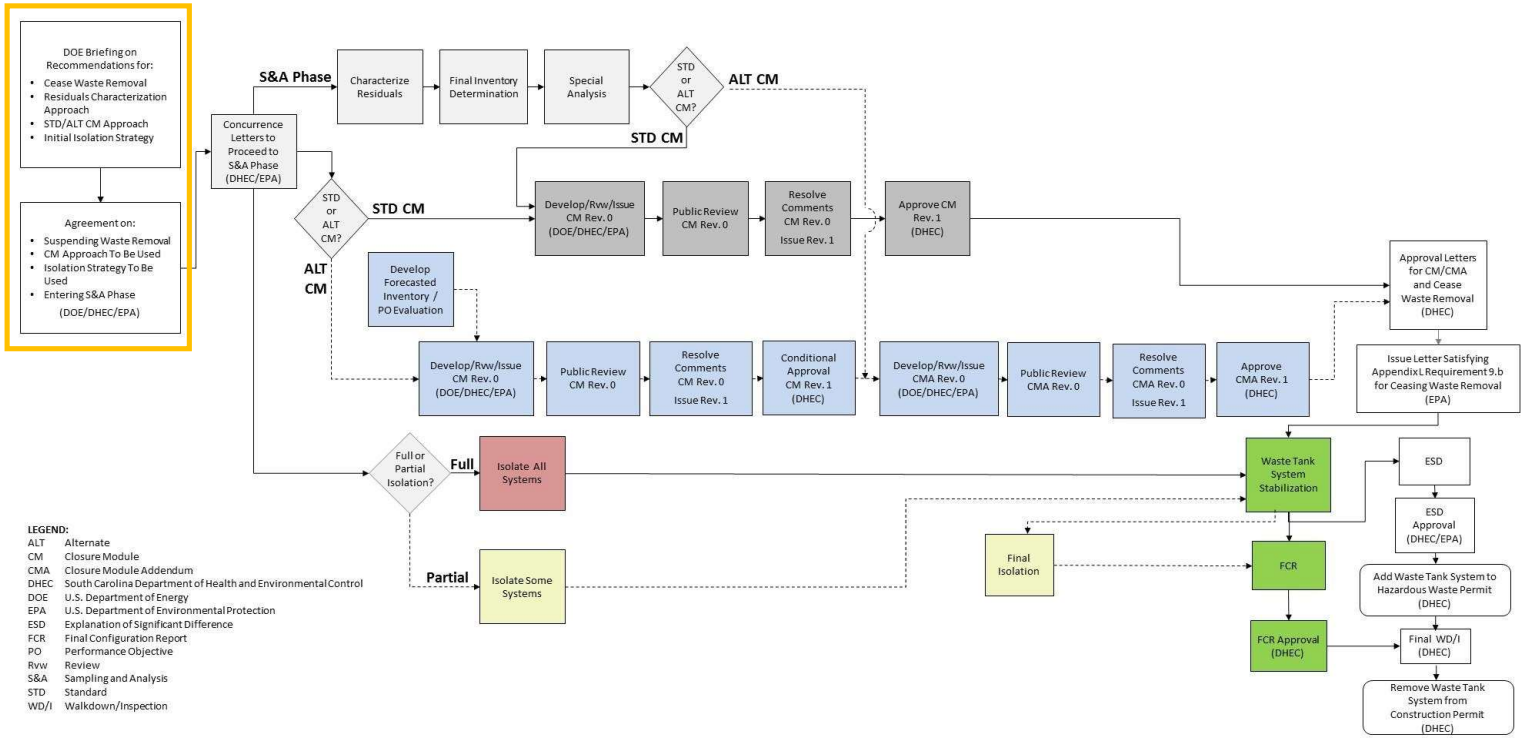
- **Anticipate that concentration values in the groundwater for HTF will be below the Maximum Contaminant Level (MCL) values for all the nonradiological organic constituents listed in Table 9.2-1 of the CGCP**
- **Anticipate that concentration values in the groundwater for HTF will be below the MCL values for radionuclides consistent with the State Primary Drinking Water Regulations (Regulation 61-58.5) including:**
  - *4 mrem/yr dose for beta- and gamma-emitting nuclides*
  - *15 picocuries per liter (pCi/L) for alpha-emitting nuclides (including Ra-226 but excluding radon and uranium)*
  - *5 pCi/L for radium (Ra-226 plus Ra-228)*
  - *30 micrograms per liter (µg/L) of uranium*

Radiation Dose Perspective

- **Anticipate that the peak dose from HDB-3 alone will be <0.0002 mrem/year during both the 1,000-year and 10,000-year periods after HTF closure***
- **To put this radiological dose into perspective**
  - *Per NCRP-160, the average annual dose to a person in the United States is approximately 620 mrem primarily from:*
    - Approximately 310 mrem from naturally occurring background
    - Approximately 300 mrem from medical procedures

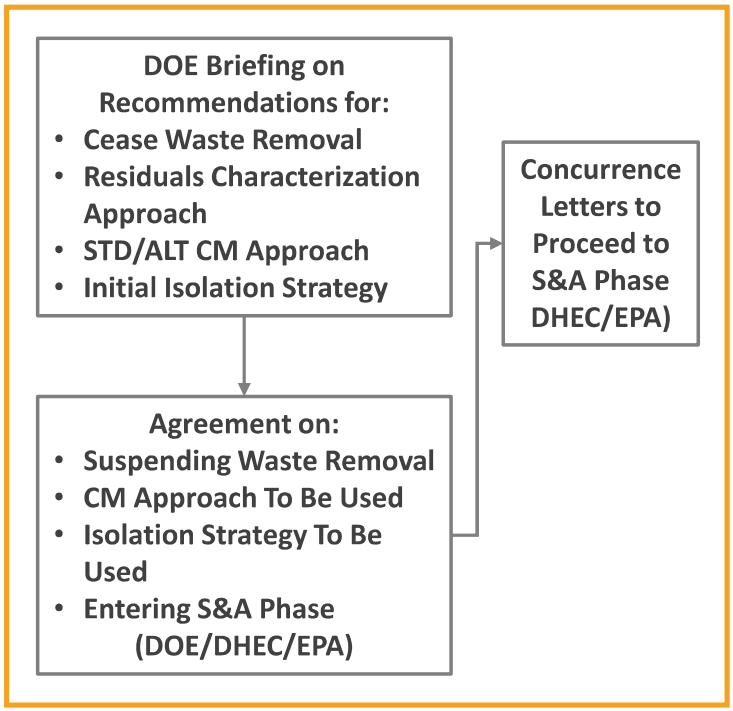
*Based on a preliminary estimate of the inventory utilizing methodology similar to that used to assign inventory for operational closure of F-Tank Farm (FTF) F-Area Diversion Boxes 5 and 6. Final inventories and associated doses will be included in the Closure Module and supporting documentation.

Pathway to Closure



Closure Module Approval and Waste Tank System Removal from Service Process (CGCP Figure 11.4-1) [SRR-CWDA-2017-00015]

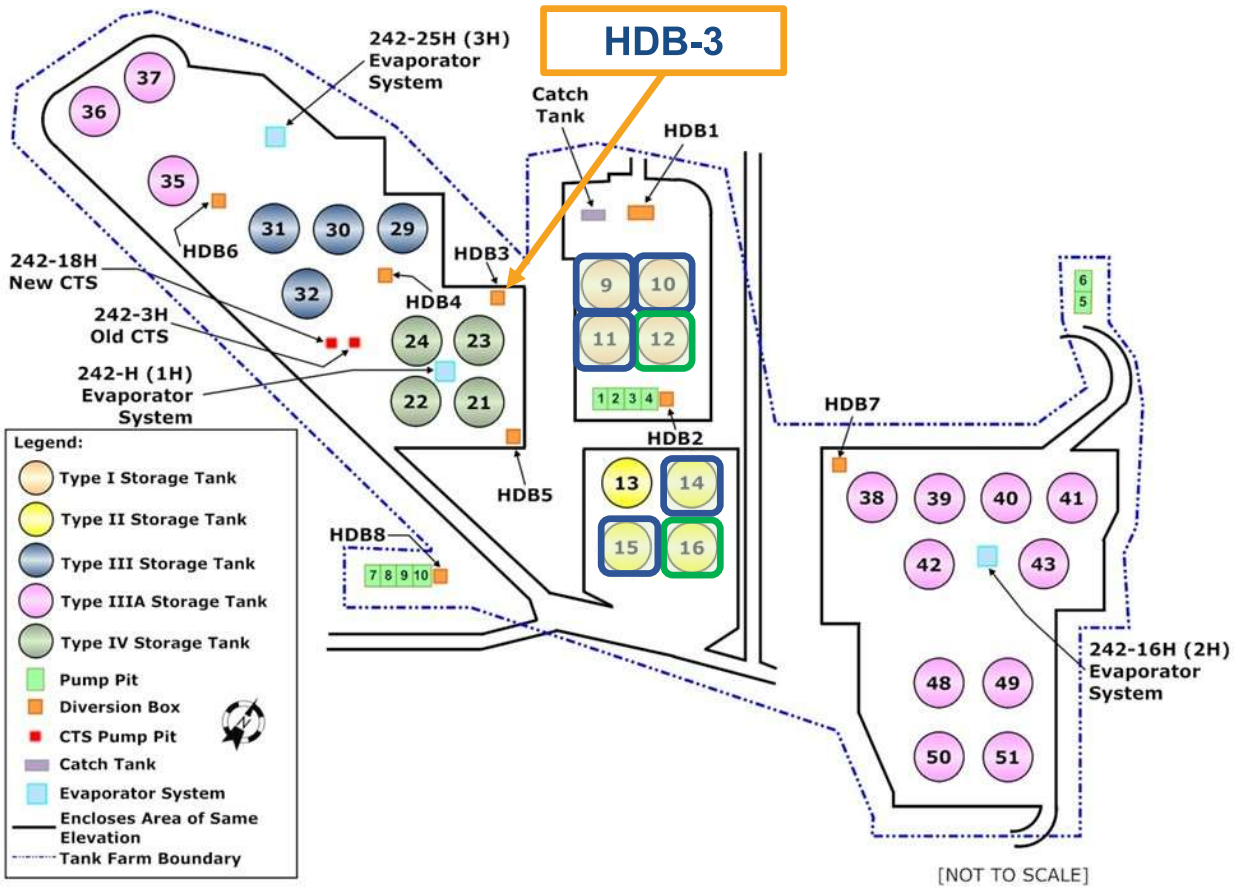
Recommendations



[SRR-CWDA-2017-00015]

1. **Waste removal activities are not warranted or required for HDB-3**
   - *No process waste has been observed in the HDB-3 vault, and there is no history of transfer line leakage in the HDB-3 vault*
2. **"Process knowledge" will be used to determine the residual inventory for HDB-3**
   - *Consistent with Section 8.0 of the CGCP, collecting samples and performing laboratory analyses is not warranted because no accumulation of residual waste is present in the diversion box*
3. **DOE will draft a Closure Module using the *Standard Closure Module a*pproach**
4. **The Closure Module will include appropriate isolation and stabilization provisions using the *Full Isolation* approach**

H-Tank Farm Layout



Closed Tank(s)

PCWR Complete Tank(s)

[SRR-CWDA-2017-00015]

What is an Ancillary Structure?

- **According to the Section 5.3 of the CGCP, Ancillary Structures are defined as follows:**

  The FTF and HTF both contain ancillary structures with internal equipment having residual contaminant inventory that must be accounted for as a part of facility closure. These ancillary structures and equipment include buried transfer lines, pump tanks, and evaporators, many of which have been in contact with liquid waste during the operating life of the facilities. The ancillary equipment was used in the FTF and HTF to transfer waste (e.g., transfer lines, pump tanks) and reduce waste volume through evaporation (e.g., the evaporator systems). The amount of contamination associated with these components depends on such factors as the component service life, its materials of construction, and the contaminating medium in contact with the component.

[SRR-CWDA-2017-00015]

CGCP Table 11.2-2: Example HTF Waste Tank Systems Removal From Service Tracking Table *(continued on next slide)*

Table 11.2-2: Example HTF Waste Tank Systems Removal From Service Tracking Table

Waste Tank System Listed in SCDHEC Construction Permit #17,424-IW	SRS Identifier[a]	Closure Module / Addendum Document Number	Removal from Service Date[b]
Tank 9	HL-241909-WTE-TK-9		
Tank 10	HL-241910-WTE-TK-10		
Tank 11	HL-241911-WTE-TK-11		
Tank 12	HL-241912-WTE-TK-12	SRR-CWDA-2014-00086 / SRR-CWDA-2015-00074	April 2016
Tank 13	HL-241913-WTE-TK-13		
Tank 14	HL-241914-WTE-TK-14		
Tank 15	HL-241915-WTE-TK-15		
Tank 16	HL-241916-WTE-TK-16	SRR-CWDA-2013-00091	September 2015
Tank 21	HL-241921-WTE-TK-21		
Tank 22	HL-241922-WTE-TK-22		
Tank 23	HL-241923-WTE-TK-23		
Tank 24	HL-241924-WTE-TK-24		
Tank 29	HL-241929-WTE-TK-29		
Tank 30	HL-241930-WTE-TK-30		
Tank 31	HL-241931-WTE-TK-31		
Tank 32	HL-241932-WTE-TK-32		
Tank 35	HL-241935-WTE-TK-35		
Tank 36	HL-241936-WTE-TK-36		
Tank 37	HL-241937-WTE-TK-37		
Tank 38	HM-241938-WTE-TK-38		
Tank 39	HM-241939-WTE-TK-39		
Tank 40	HB-241940-WTE-TK-40		
Tank 41	HM-241941-WTE-TK-41		
Tank 42	HB-241942-WTE-TK-42		
Tank 43	HM-241943-WTE-TK-43		
Tank 48	HI-241948-WTE-TK-48		
Tank 49	HI-241949-WTE-TK-49		
Tank 50	HI-241950-WTE-TK-50		
Tank 51	HB-241951-WTE-TK-51		
242-H (1H) Evaporator Pot	EP-1 (M-M6-H-1343)		
Condenser	EP-3 (M-M6-H-0227)		
Mercury Collection Tank	(M-M6-H-1645)		

CGCP Table 11.2-2: Example HTF Waste Tank Systems Removal From Service Tracking Table *(continued on next slide)*

Table 11.2-2: Example HTF Waste Tank Systems Removal From Service Tracking Table (continued)

Waste Tank System Listed in SCDHEC Construction Permit #17,424-IW	SRS Identifier[a]	Closure Module / Addendum Document Number	Removal from Service Date[b]
Cesium Removal Column Pump Tank	EP 13-1 (M-M6-H-1647)		
Overheads Tank #4	EP-4 (M-M6-H-1341)		
Overheads Tank #5	EP-5 (M-M6-H-1341)		
242-3H (Old) Concentrate Transfer System[c]	W238683		
242-18H (New) Concentrate Transfer System	EP 20-10-1 (W702921)		
242-16H (2H) Evaporator Pot	HM-242016-WEE-TK-3		
Condenser	HM-242016-WEE-HX-2		
Mercury Collection Tank	HM-242016-WEE-TK-7		
Cesium Removal Column Pump Tank	HM-242016-WEE-TK-8		
Overheads Tank #1	HM-242016-WEE-TK-5		
Overheads Tank #2	HM-242016-WEE-TK-6		
242-25H (3H) Evaporator Pot	HL-242025-WEE-EVP-1		
Condenser	HL-242025-WEE-COND-223		
Mercury Collection Tank	HL-242025-WEE-TK-311		
Overheads Tank #1	HL-242025-WEE-TK-1		
Overheads Tank #2	HL-242025-WEE-TK-2		
HPP-1[d]	HL-241035-WTS-PPIT-1		
HPP-2	HL-241035-WTS-PPIT-2		
HPT-2	HL-241035-WTS-TK-2		
HPP-3	HL-241035-WTS-PPIT-3		
HPT-3	HL-241035-WTS-TK-3		
HPP-4	HL-241035-WTS-PPIT-4		
HPT-4	HL-241035-WTS-TK-4		
HPP-5	HM-241070-WTS-PPIT-5		
HPT-5	HM-241070-WTS-TK-5		
HPP-6	HM-241070-WTS-PPIT-6		
HPT-6	HM-241070-WTS-TK-6		

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CGCP Table 11.2-2: Example HTF Waste Tank Systems Removal From Service Tracking Table *(continued)*

Table 11.2-2: Example HTF Waste Tank Systems Removal From Service Tracking Table (continued)

Waste Tank System Listed in SCDHEC Construction Permit #17,424-IW	SRS Identifier[a]	Closure Module / Addendum Document Number	Removal from Service Date[b]
HPP-7	HG-241100-WTS-PPIT-7		
HPT-7	HG-241100-WTS-TK-7		
HPP-8	HG-241100-WTS-PPIT-8		
HPT-8	HG-241100-WTS-TK-8		
HPP-9	HG-241100-WTS-PPIT-9		
HPT-9	HG-241100-WTS-TK-9		
HPP-10	HG-241100-WTS-PPIT-10		
HPT-10	HG-241100-WTS-TK-10		
HDB-1	HL-241000-WTS-DBX-1		
HDB-2	HL-241035-WTS-DBX-2		
HDB-3	HL-241003-WTS-DBX-3		
HDB-4	HL-241008-WTS-DBX-4		
HDB-5	HL-241052-WTS-DBX-5		
HDB-6	HL-241056-WTS-DBX-6		
HDB-7	HM-241031-WTS-DBX-7		
HDB-8	HG-241100-WTS-DBX-8		
H-Area Catch Tank	HL-241909-WTS-TK-1		

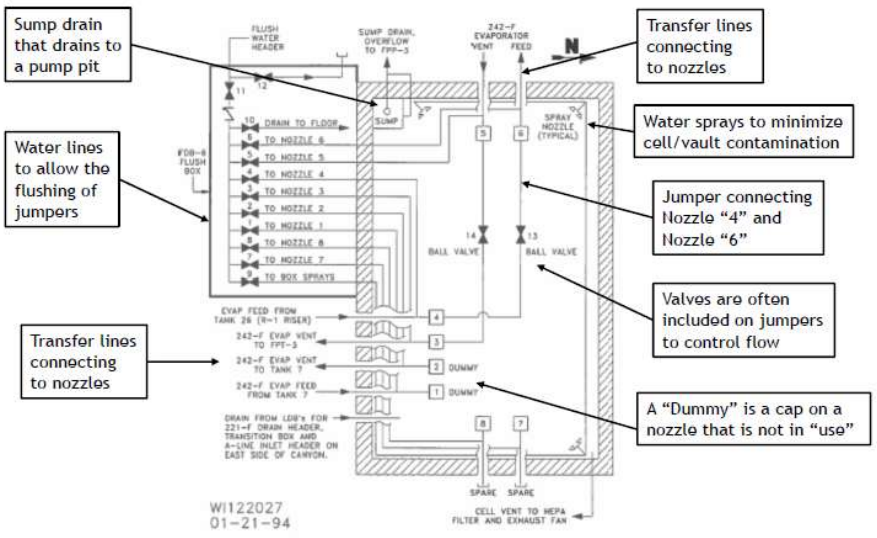
[a] Either the Smart Plant Component Location Indicator number or engineering drawing number showing the component.
[b] As used here, the *Removal From Service Date* is the DOE letter date documenting operational closure to SCDHEC and EPA.
[c] Note: The transfer tank has been removed from the 242-3H Concentrate Transfer System.
[d] Note: HPP-1 did not have a pump tank.

EXAMPLE

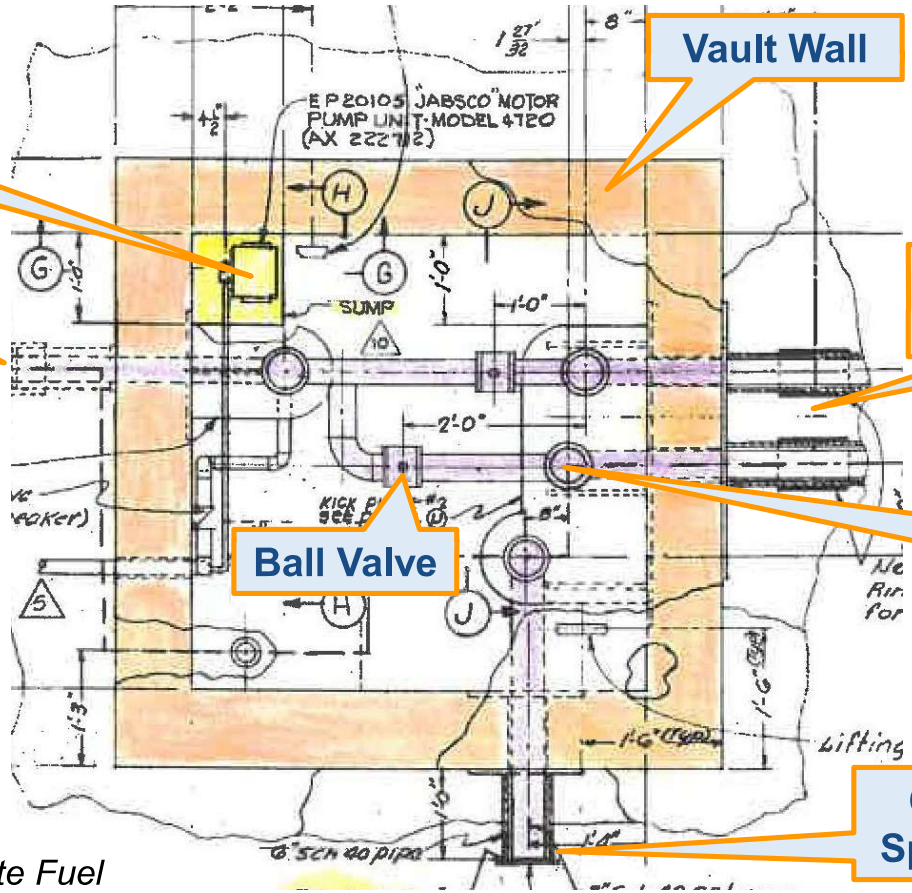
What is a Diversion Box?

- Diversion boxes are part of the waste transfer line system in the Tank Farms
- A diversion box is an underground concrete structure that contains a series of connection points, known as nozzles, that are associated with different transfer lines that lead to waste tanks, other diversion boxes, or other ancillary structures such as pump tanks
- By the use of jumpers that connect from one nozzle to another, waste in the tank farms can be transferred from one point to another while minimizing the number of required transfer lines
- As a practical matter, the diversion box serves as secondary containment for the jumpers within that particular diversion box

Diversion Box Example – Plan View



HDB-3 Plan View



Interior Floor = 5-feet x 5-feet

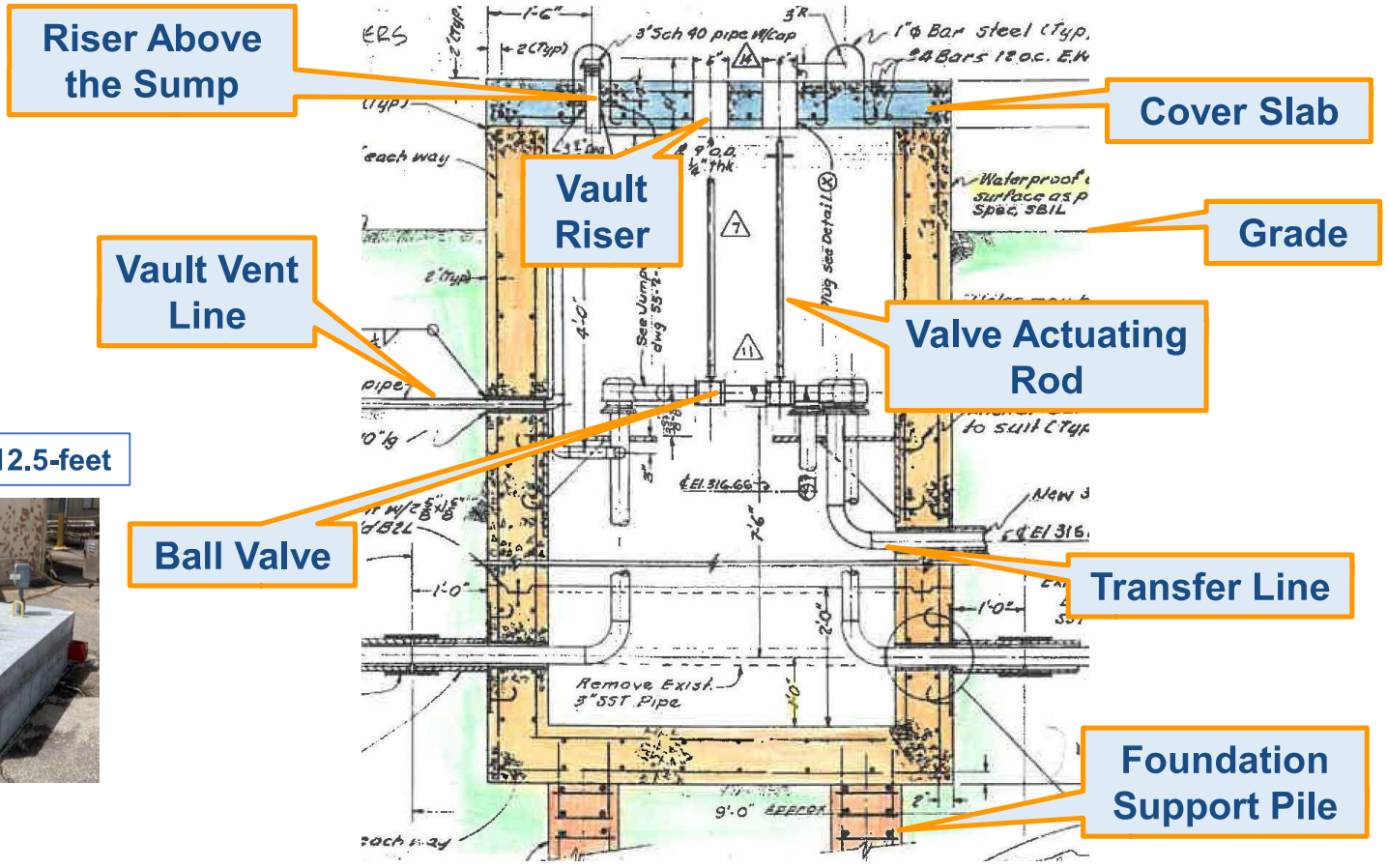


HDB-3 During Construction

*RBOF = Receiving Basin for Offsite Fuel

[S5-2-1341]

HDB-3 Cross-Section View



Interior Height = 12.5-feet



[S5-2-1341]

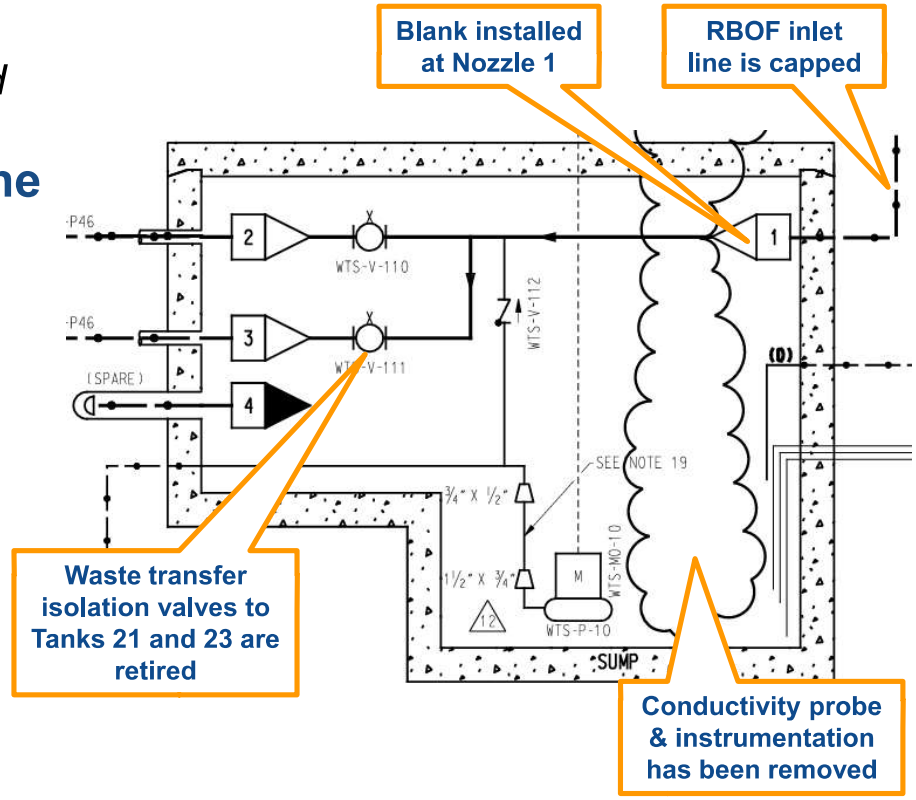
HDB-3 Historical Context

- HDB-3 was constructed around 1962 to direct liquid waste transfers from the Receiving Basin for Offsite Fuel (RBOF) facility and Resin Regeneration Facility (RRF) to Tanks 21 and 23
- The RBOF facility was located northwest of HDB-3 outside the HTF boundary and received spent fuels from defense and research reactor programs for reprocessing
- The first contaminated waste transfer through HDB-3 took place in June 1963 to Tank 21
- The last transfer was made in April 2004 to Tank 21 and HDB-3 has since been designated as an “inactive process area”
- HDB-3 was isolated from RBOF in 2004 and was not integrated with any other functions of the Liquid Waste system

[WSRC-SA-11, DPSP 63-1-6-S, M-DCF-H-14713, CBU-PIT-2004-00002]

HDB-3 Current Configuration

- **HDB-3 has been retired from service and declared as inactive**
  - *Waste transfers into or through HDB-3 are prohibited*
- **RBOF has been deactivated and the line from RBOF to HDB-3 has been cut and capped at the RBOF valve box**
- **At Nozzle 1 (the inlet line from RBOF), a blank is installed to isolate the deactivated line**
  - *The vent line at the back of Nozzle 1 is also cut and capped*
- **The lines that connect HDB-3 to Tank 21 and Tank 23 are at a point high enough that fluid level in either tank will never reach the connection for flow to occur**
  - *The associated waste transfer isolation valves are retired*
- **The HDB-3 conductivity probe has been removed and associated instrumentation disconnected**



[P-DCF-H-01561, M-DCF-H-14713, M-M6-H-8899]

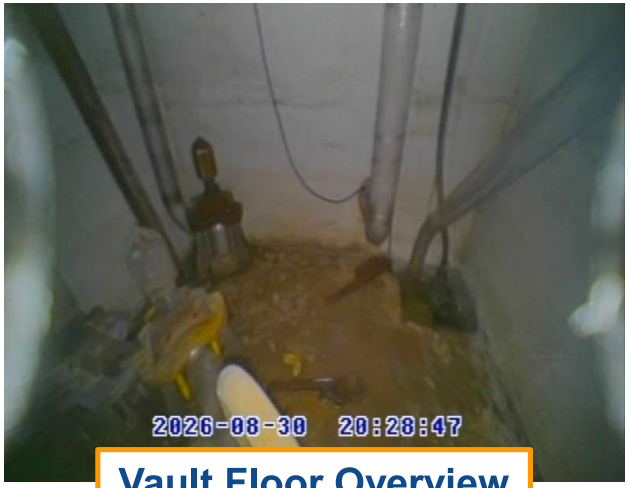
HDB-3 Leakage History

- **There are no recorded instances of waste leakage in HDB-3**
- **Rainwater intrusion through the cover slab does occur**
  - *Anecdotal reports of regular transfers of rainwater out of HDB-3 at two-year intervals*
  - *Some transfers out of HDB-3 were performed through poly bottles rather than directly to Tank 23, which have not historically been tracked*
  - *Transfers of rainwater performed as "non-waste transfers"*
- **Last transfer performed in May 2026 with final sump liquid level of ~1.8 inches**

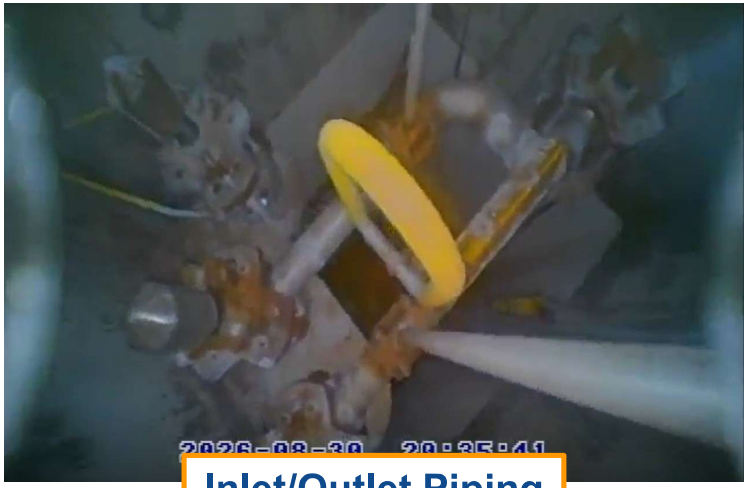
[241-H-4693]

HDB-3 Vault Current Status

- **Latest camera inspection performed in August 2026: No process waste was identified during the inspection**
  - *Radiation rates over open access port were non-detect, indicative of minimum contamination levels within HDB-3*
- **Review of August 2026 camera inspection confirmed the presence of two discarded jumpers, one Hanford connector, and three pipe wrenches**
- **The water level in the vault appeared to be slightly above the sump level indicating additional rainwater intrusion since May 2026**



Vault Floor Overview



Inlet/Outlet Piping

HDB-3 Vault Current Status



Waste Removal Options

- **HDB-3 Waste Removal Options**
  - *Any type of mechanical or chemical cleaning method, and/or deployment of a vacuum technology would only serve to potentially remove any surface residue that may be present on the interior surfaces of HDB-3 and potentially inside the abandon jumpers*
    - Rainwater removal since 2004 has essentially served to flush the floor/sump of the diversion box
    - Interior of installed jumper would not be impacted without removal
    - Cleaning of any type would divert resources (i.e., funding and personnel) from other Liquid Waste System risk reduction activities
    - Given no visible solids present within the diversion box, and no history of leakage into the diversion box, the level of additional waste removal would be uncertain and would have minimal impact, if any, on final performance objectives concentrations and doses
  - *Removal of the existing jumpers, installed and abandon, would only serve to potentially remove any waste that may be associated with residue on the interior surface of the jumpers*
    - Jumpers treated the same as connected transfer lines with regard to flushing after transfers
    - No history of jumper pluggage within HDB-3
    - Jumper removal and subsequent disposal would divert resources (i.e., funding and personnel) from other Liquid Waste System risk reduction activities
    - Given the length of the jumpers associated with HDB-3 only represent a very small fraction of the miles of transfer lines within HTF, the level of additional waste removal associated with jumper removal would have minimal impact, if any, on final performance objectives concentrations and doses

Consolidated General Closure Plan (CGCP)

- **The CGCP provides the protocols "by which DOE intends to remove from service the waste tanks and ancillary structures"**
- **It states that "The FTF and HTF both contain ancillary structures with internal equipment having residual contaminant inventory that must be accounted for as part of facility closure"**
- **With regards to residual characterization in Ancillary Structures, the CGCP states the following:**

  The residuals in each waste tank or ancillary structure will be characterized using the methodology and requirements in the Liquid Waste Tank Residuals Sampling and Analysis Program Plan (LWTRSAPP) and Liquid Waste Tanks Residuals Sampling – Quality Assurance Plan (LWTRS-QAPP) that were reviewed and approved by the SCDHEC and EPA. [SRR-CWDA-2011-00050, SRR-CWDA-2011-00117] ***In some cases, process knowledge and historical sampling may be used to support residuals characterization.***

  If residuals in an ancillary structure require sampling for characterization, a sampling approach and plan consistent with the LWTRSAPP to collect and analyze representative samples will be developed. [SRR-CWDA-2011-00050]

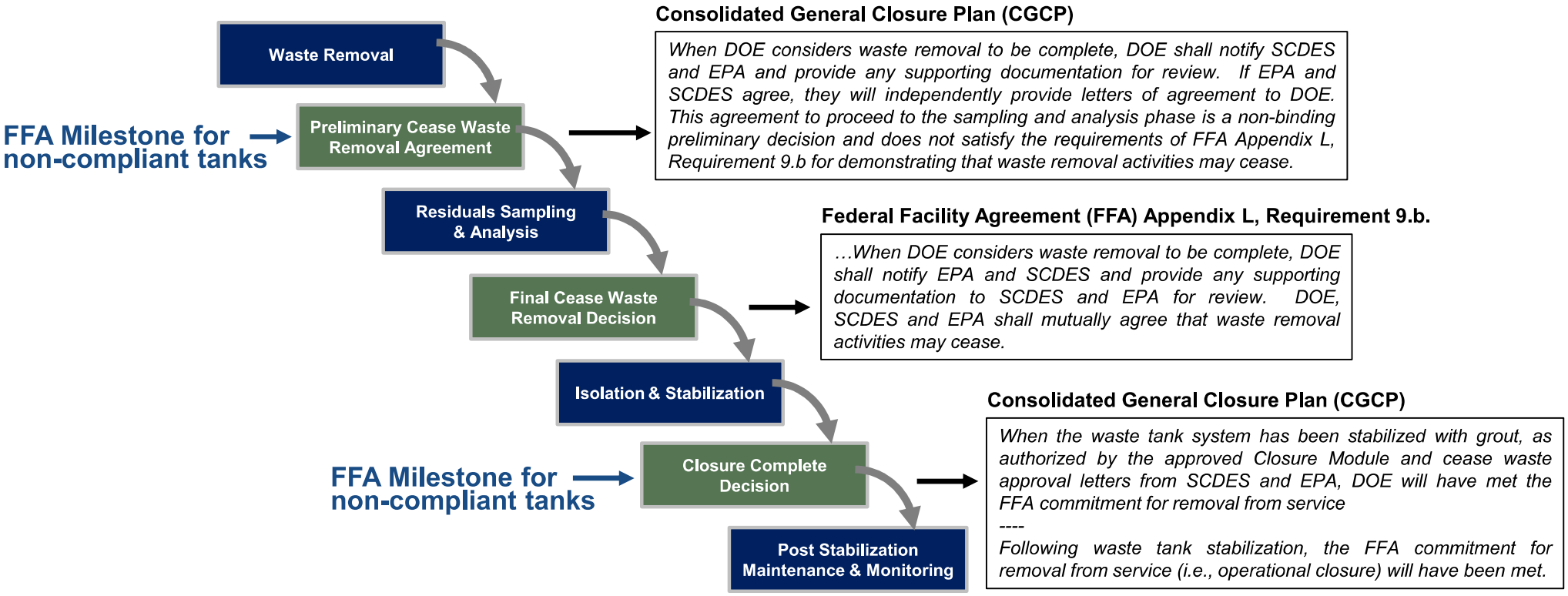
[SRMC-CWDA-2017-00015, SRR-CWDA-2011-00050, SRR-CWDA-2011-00117]

Performance Assessment Assumptions

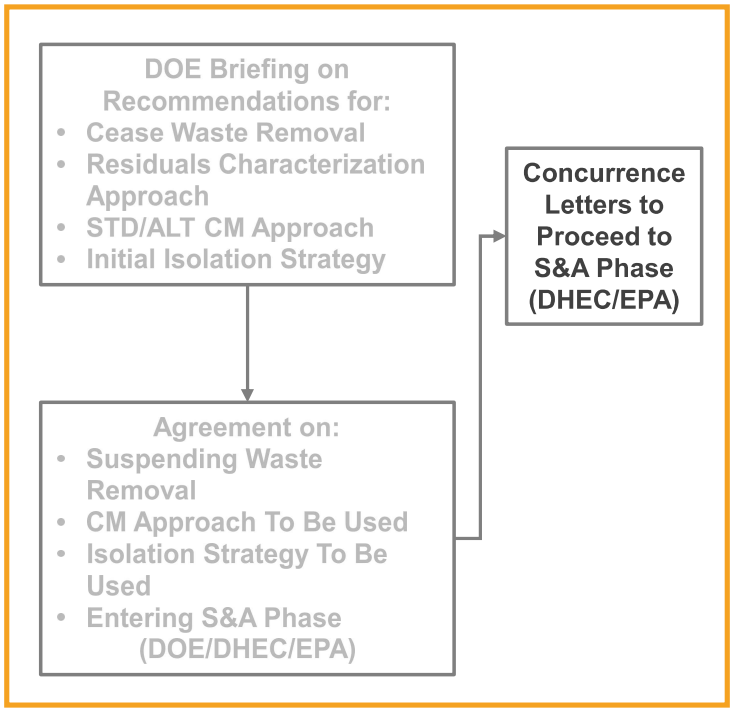
- **For the HTF PA, source inventories were assigned to HTF Ancillary Structures, including HDB-3, based on projections of remaining residuals**
  - *HDB-3 assigned a conservative inventory assuming a residue of sludge on the diversion box floor and inside jumper surfaces*
  - *Similar methodology utilized to assign inventory for F-Area Diversion Boxes 5 and 6 operational closure*
- **The diversion boxes are assumed to be filled with grout (or equivalent) to prevent future subsidence based on the structure design and size**
  - *Considering no significant quantity of radionuclides assumed present in HDB-3, an engineered grout designed to reduce radionuclide migration is not required*
  - *Transfer line (e.g., jumper) grouting not anticipated*
- **All ancillary structures are assumed to "fail" and begin contaminant releasing at 500 years after closure regardless of the physical and chemical properties of the structure**

[SRMC-CWDA-2023-00073, SRR-CWDA-2014-00106, SRR-CWDA-2015-00073]

Tank and Ancillary Structure Closure Process



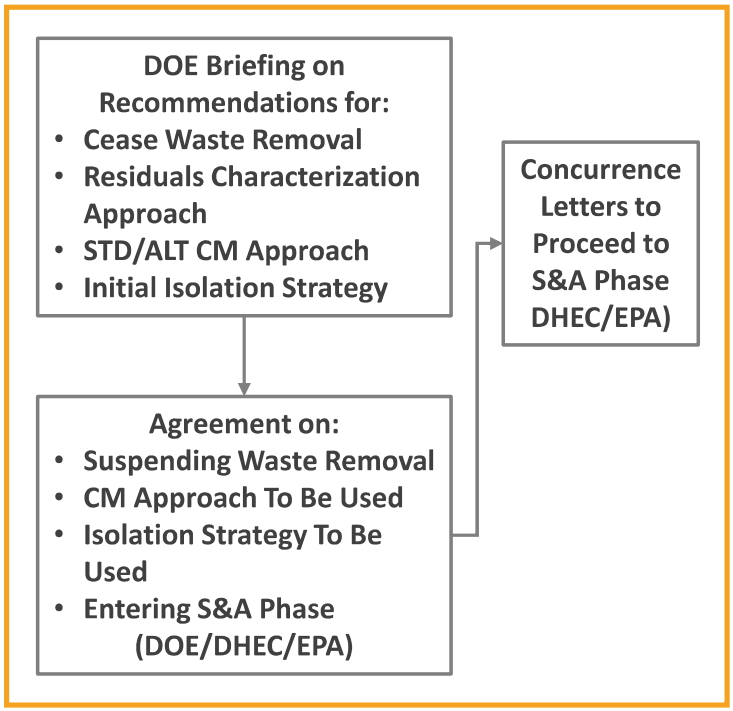
Requested Action



[SRR-CWDA-2017-00015]

The three agencies agree that, based upon the described qualitative assessment, there is reasonable assurance that it is appropriate to suspend waste removal activities and enter the Sampling and Analysis phase of the operational closure process for HDB-3

Agreements Being Requested



[SRR-CWDA-2017-00015]

1. Waste removal activities are not warranted or required for HDB-3
2. "Process knowledge" can be used to determine the residual inventory for HDB-3
3. DOE will draft a Closure Module using the *Standard Closure Module* approach
4. The Closure Module will include appropriate isolation and stabilization provisions using the *Full Isolation* approach

Next Steps

- **DOE will forward a letter to SCDES and EPA formally requesting concurrence to proceed to the Sampling and Analysis phase in HDB-3**
  - *This presentation will be attached as a primary reference*
  - *The requested action is a non-binding preliminary decision based on the qualitative information available at this time and presented today*
- **DOE and the Liquid Waste Contractor will proceed in developing the regulatory documentation necessary to operationally close HDB-3**
  - *DOE will coordinate with SCDES and EPA to establish a schedule for the development, review and approval of the Closure Module consistent with the approach described in the CGCP*
  - *Once a suitable fill material is identified, as described in Section 2.0 of the CGCP, SCDES approval for the use of an alternate fill material will be sought*

Common Goals and Values*

Values

1. Maintain transparency with open communication between regulators, DOE and the contractor on program process, and significant emerging issues.
2. Ensure DOE's strategy and plans are subject to stakeholder engagement and input, including SCDHEC permitting processes, and CERCLA, as appropriate.
3. Maximize the amount of curies (especially long-lived radionuclides) vitrified and ready for ultimate disposal out of state.
4. Limit disposal of curies onsite at SRS so that residual radioactivity is as low as reasonably achievable.

Goals

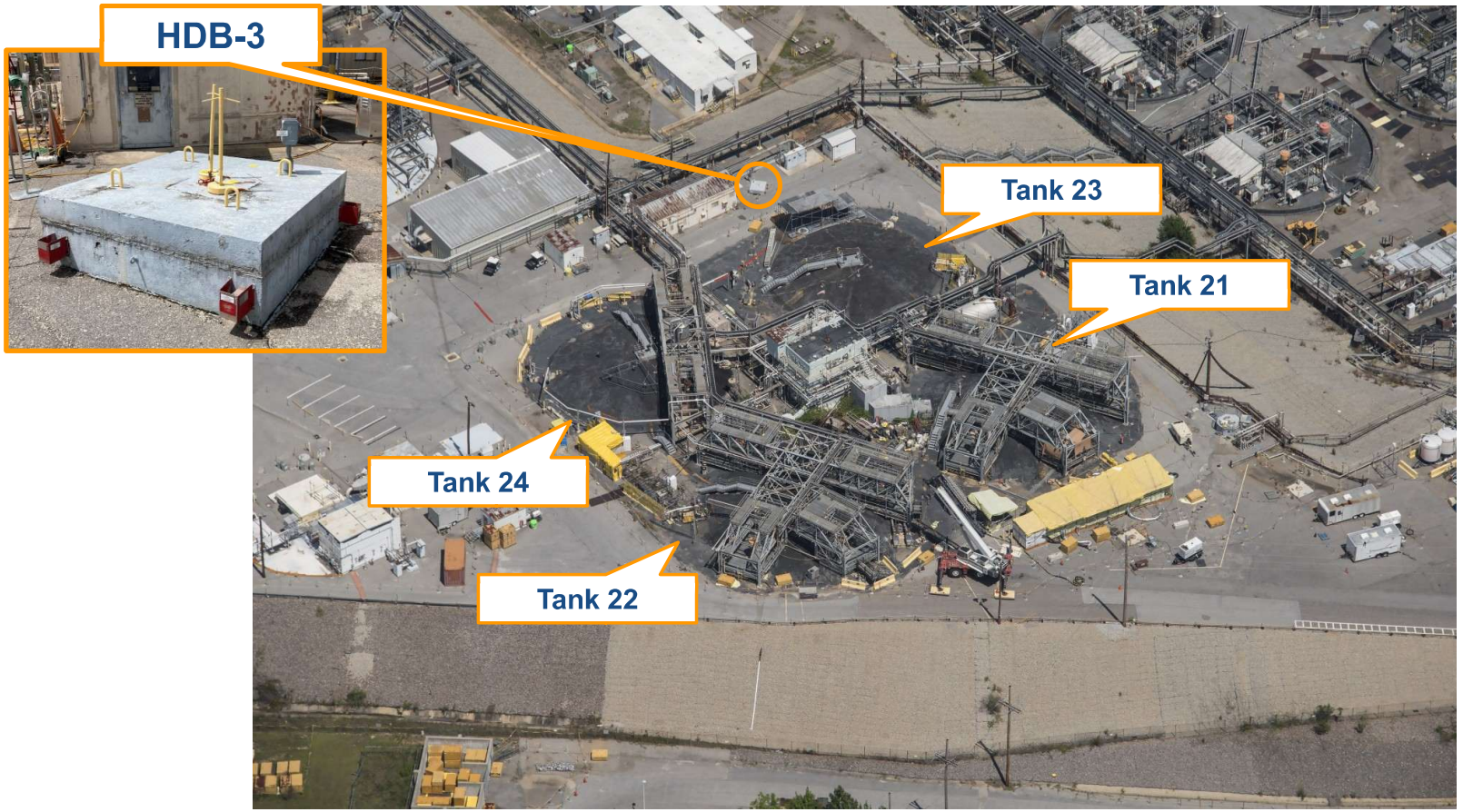
1. Reduce risk to the environment by removing waste and closing tanks with a foal of completion of the liquid waste program by 2037.
2. Reduce operational and environmental risk by aggressively removing curies from the waste tanks.
3. Reduce operational and environmental risk by optimizing operations to minimize liquid waste program total life cycle.
4. Complete waste removal and subsequent grouting of all waste tanks and ancillary structures with a risk-based priority order: first to tanks in the water table, followed by F-Tank Farm tanks, followed by remainder of waste tanks, followed by ancillary structures, recognizing the potential for future emergent conditions or opportunities.

**From Federal Facility Agreement (FFA) 2022 High Level Waste Tank Milestones Agreement* [WSRC-OS-94-42]

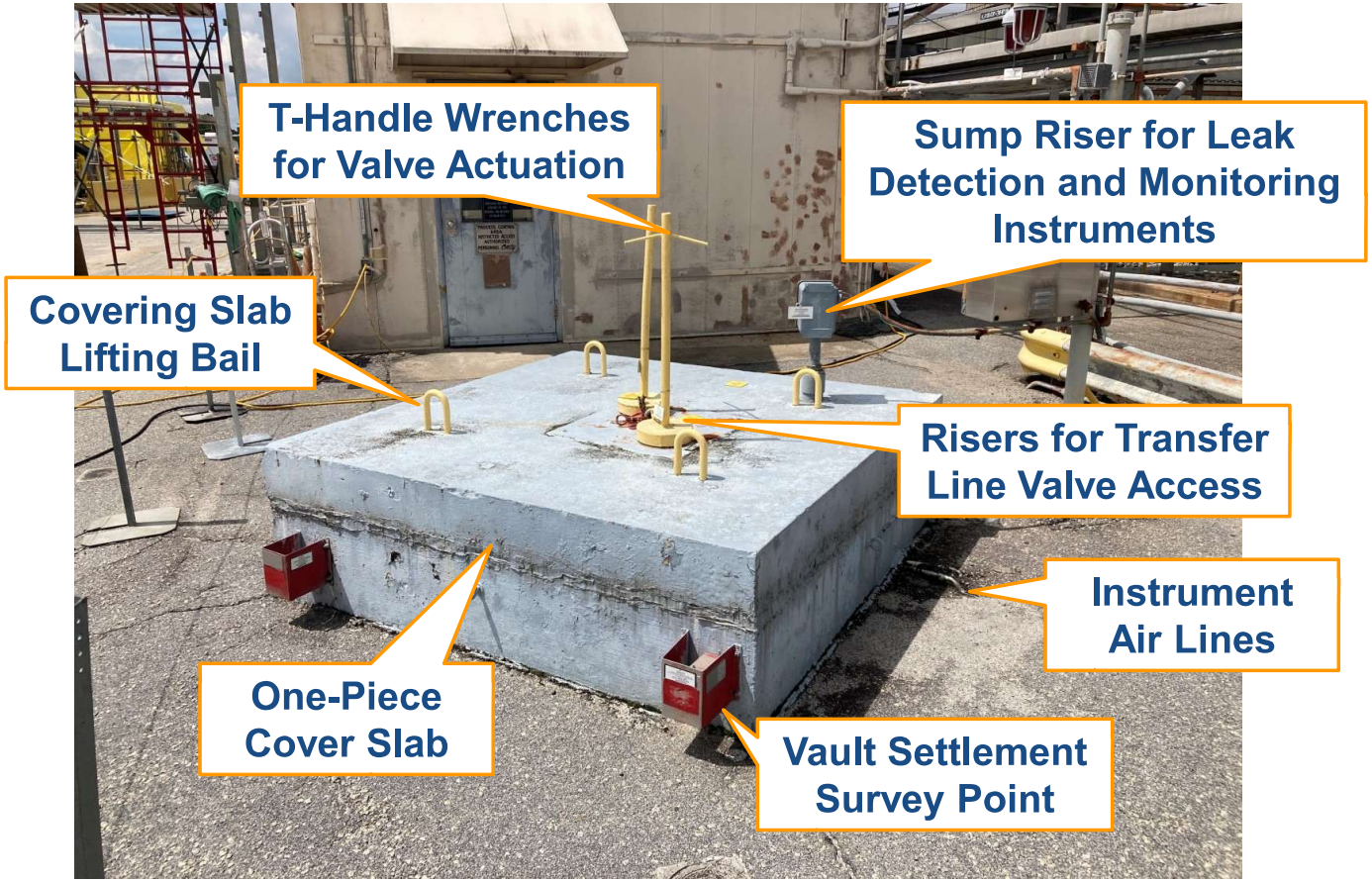
HDB-3

Background Information

HDB-3 Within H-Tank Farm



HDB-3 External Components



HDB-3 Construction



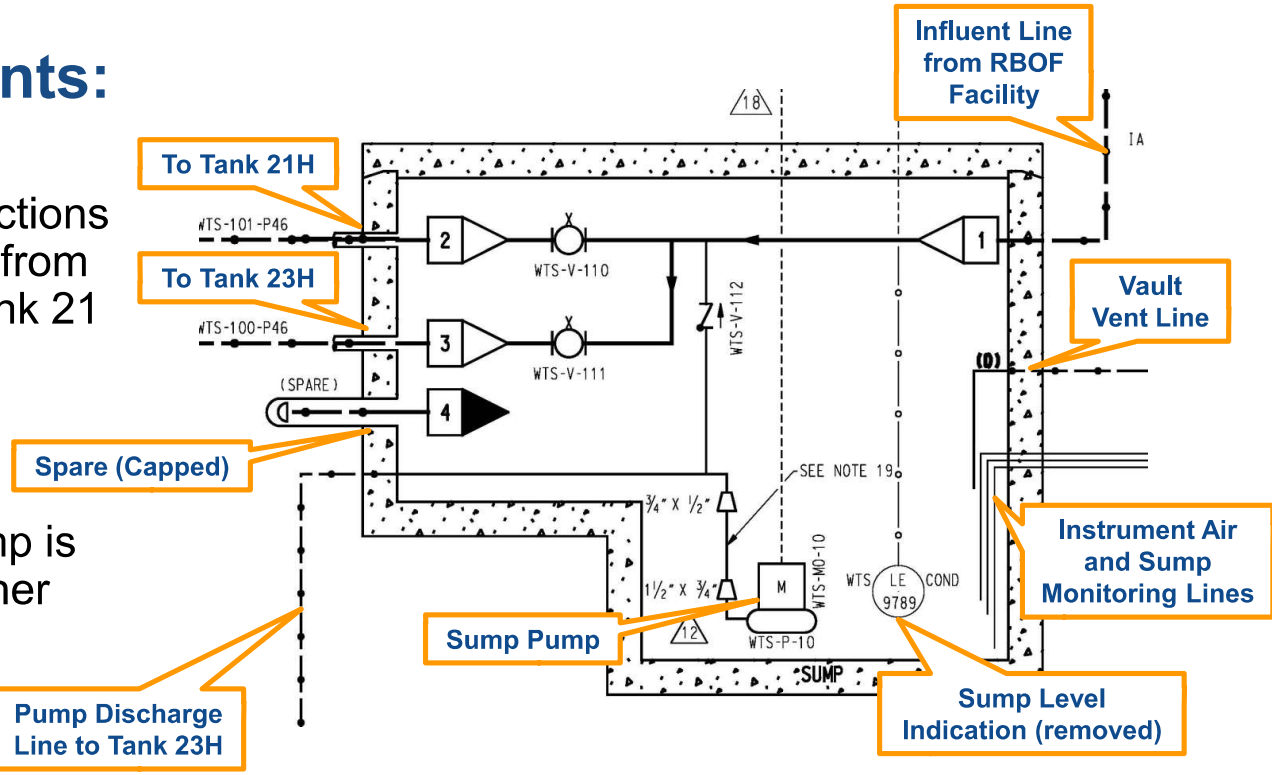
HDB-3 During Construction

- HDB-3 has a square foundation with dimensions: 6-feet 8-inches x 6-feet 8-inches
- External height: 14-feet
- Interior floor dimensions: 5-feet x 5-feet
- Interior height: 12.5-feet
- Concrete walls and floor thickness: 10-inches
- Concrete roof slabs thickness: 8-inches
- Vault floor is ~11.7-feet below grade, vault top is ~2.2-feet above grade
- There is a 1-foot square, 1-foot deep sump with a dedicated pump in the north vault corner
- The interior of the diversion box is lined with stainless steel and painted with acid-resistant and fume-resistant paint
- Exterior was coated with a waterproofing compound during construction
- There are two, 6-inch inside diameter (I.D.) risers for transfer line valve access and one 3-inch I.D. riser above the sump for leak detection monitoring equipment

[SRMC-CWDA-2023-00073, S5-2-1341]

HDB-3 Structure Characteristics

- **The HDB-3 structure is comprised of two segments:**
  - *Main Diversion Box*
    - Contains jumpers and connections for routing influent discharge from the RBOF facility to either Tank 21 or 23
  - *Sump*
    - A sump with a dedicated pump is located in the north vault corner and discharges to Tank 23



[M-M6-H-8899]

HDB-3 Design Details

- **HDB-3 was modified from the original one transfer line design to accommodate up to four lines**
- **HDB-3 used dedicated (fixed) lines with ball valves to change waste stream path**
  - *Unlike typical diversion boxes that switched custom-designed jumpers between the wall nozzles to direct the waste flow path*
  - *Influent discharge from the RBOF facility was directed to either Tank 21 or 23 by turning the ball valves in the transfer lines*
- **T-handle wrenches were used through the cover slab to turn actuating rods extending upward from the valves**

HDB-3 Operational Service

- **HDB-3 was in service from 1962 through 2004**
  - *HDB-3 became obsolete when the RBOF facility was decommissioned*
- **HDB-3 was constructed to direct spent resin transfers from the RBOF facility to Tanks 21 and 23**
- **There are little to no records of significant operational events**
- **Interviews of HTF operations personnel**
  - *Regular transfers of rainwater out of HDB-3 occurred at two-year intervals of approximately 200 gallons each; approximately 10 transfers totaling 2500 gallons have occurred since April 2004*
  - *Some transfers out of HDB-3 were through poly bottles rather than directly to Tank 23, which have not historically been tracked*

[N-ESR-G-00001]

RBOF Facility

- **RBOF was built in the early 60's to support the "Atoms for Peace" program**
- **RBOF received spent fuels from defense and research reactor programs for reprocessing**
- **The facility was a 139-feet wide by 148-feet long structure that housed the primary facilities to unload, handle, and store spent nuclear fuel**
  - *Included a fuel receiving port, a cask wash pit, a cask unloading basin, two fuel storage racks, a fuel inspection basin, a fuel disassembly basin, and a fuel repackaging basin*
- **Located outside of HTF border, northwest of HDB-3**
- **The RRF was adjacent to RBOF and regenerated the ion exchange resins used in RBOF's filter-deionizer system**
  - *Spent resin transfers sent to HBD-3 starting in 1963*





[WSRC-MS-99-00678, WSRC-TR-95-0379]

RBOF Liquid Waste Sources

- **Liquid waste in the RBOF/RRF was generated primarily from the following operational activities:**
  - *Resin regeneration (3-4 deionizers/year)*
  - *Filter maintenance*
  - *Cask decontamination*
  - *Miscellaneous waste (cell sump transfers, rainwater, basin water, etc.)*
- **Resin regeneration waste consisted primarily of deionized water, nitric acid, and sodium hydroxide generated from the washing of spent cation and anion resin**
  - *Resin regeneration waste may also contain small, undigested quantities of ion exchange resin*
- **Filter maintenance backwashing sent oxalic acid (cleaning material) and caustic flush waste (generated from treatment of the filter with sodium hydroxide)**
- **Cask wash pit solution from cask decontamination with steam and deionized water had a slightly basic composition due to the use of a commercial cleaning solution**
- **The combined waste stream from the RBOF/RRF was classified as an irregular waste stream due to its inherently variable composition and was periodically characterized following the requirements of the HTF Waste Acceptance Criteria (WAC)**

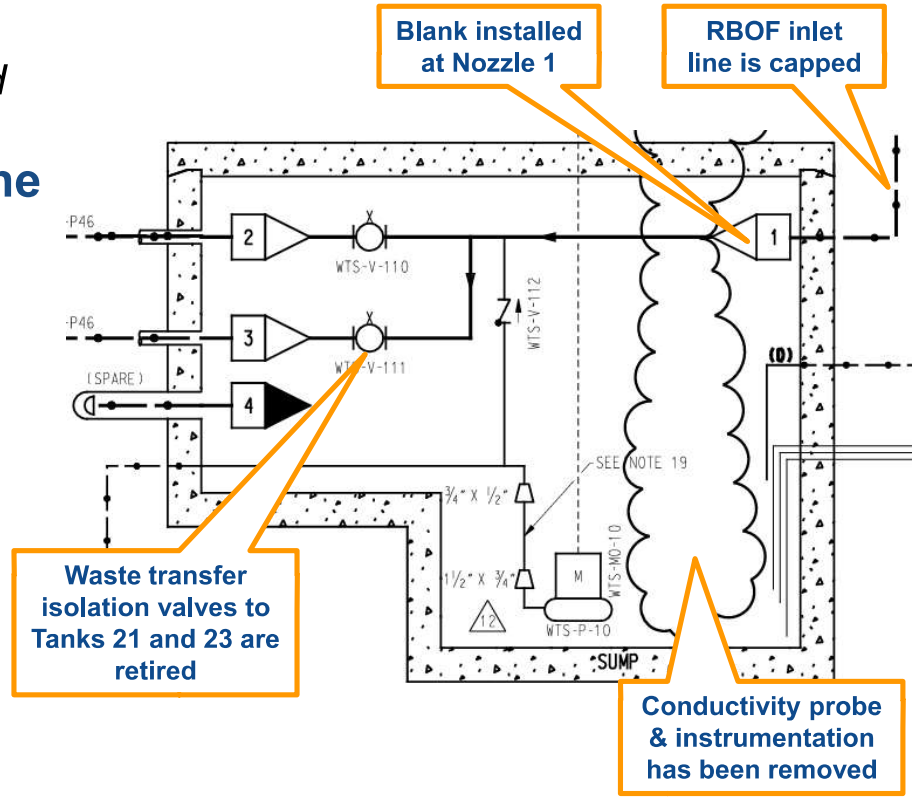
[WSRC-TR-95-0379]

HDB-3 Waste Removal

- **There is no history of transfer line leakage in the HDB-3 vault and no waste removal efforts have been performed**
- **Transfer lines were typically flushed several times with clean water after each transfer; only minimal, if any, waste might be present inside the lines**
- **Only non-waste debris has been seen in the vault (two abandoned jumpers, one Hanford connector, and three pipe wrenches)**
- **Abandoned equipment will not be removed prior to grouting and will be entombed in-place**
  - *Internal void spaces will be filled to the extent practicable as the grout level rises*

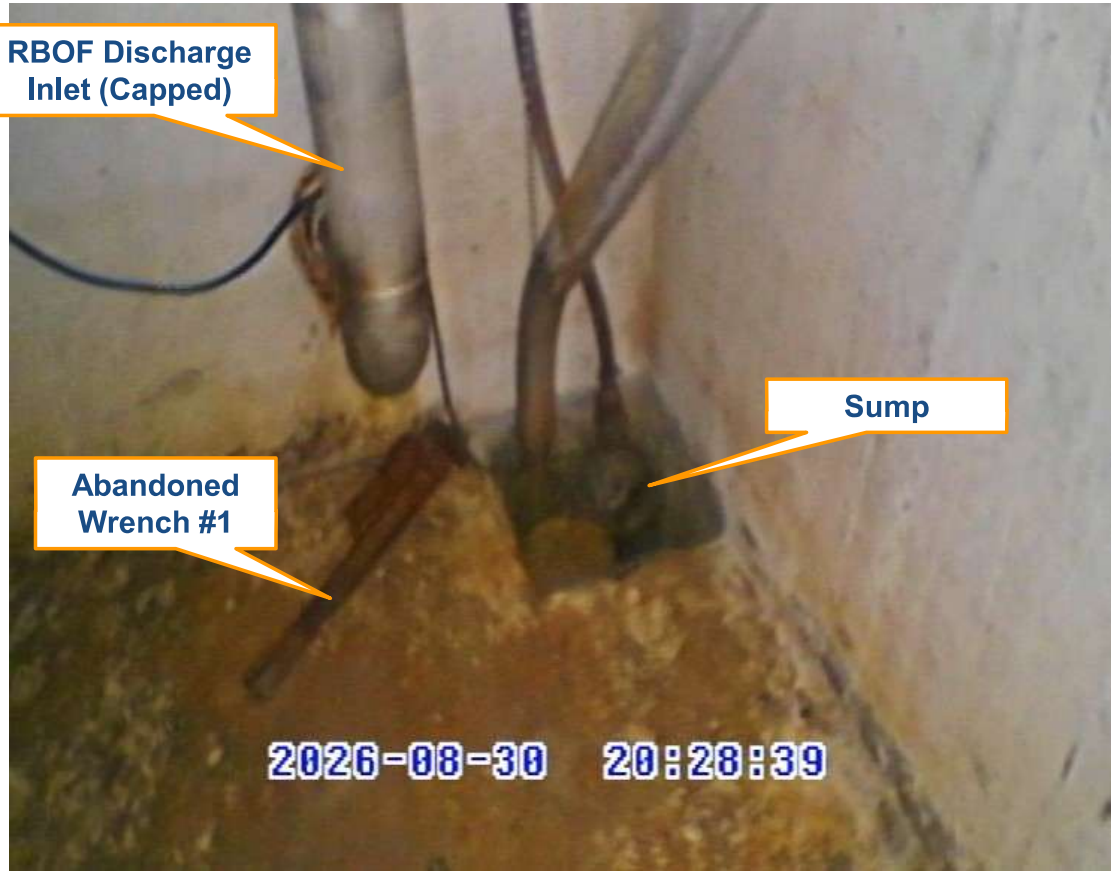
HDB-3 Current Configuration

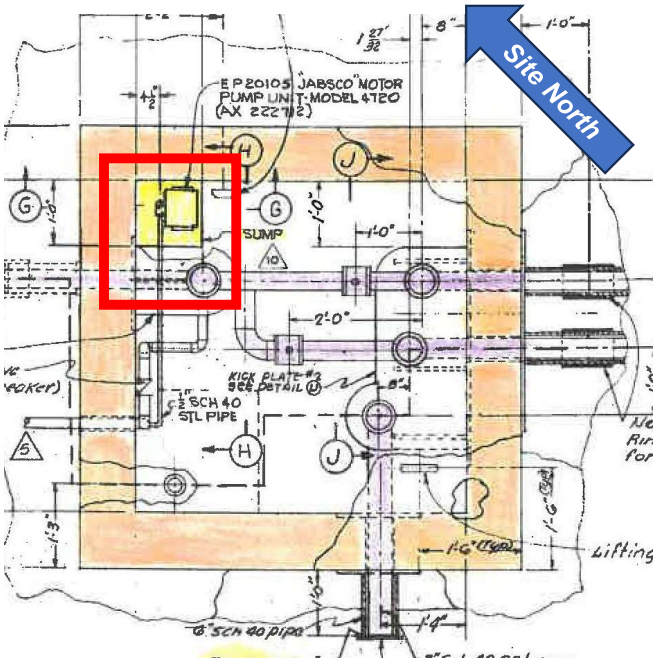
- **HDB-3 has been retired from service and declared as inactive**
  - *Waste transfers into or through HDB-3 are prohibited*
- **RBOF has been deactivated and the line from RBOF to HDB-3 has been cut and capped at the RBOF valve box**
- **At Nozzle 1 (the inlet line from RBOF), a blank is installed to isolate the deactivated line**
  - *The vent line at the back of Nozzle 1 is also cut and capped*
- **The lines that connect HDB-3 to Tank 21 and Tank 23 are at a point high enough that fluid level in either tank will never reach the connection for flow to occur**
  - *The associated waste transfer isolation valves are retired*
- **The HDB-3 conductivity probe has been removed and associated instrumentation disconnected**



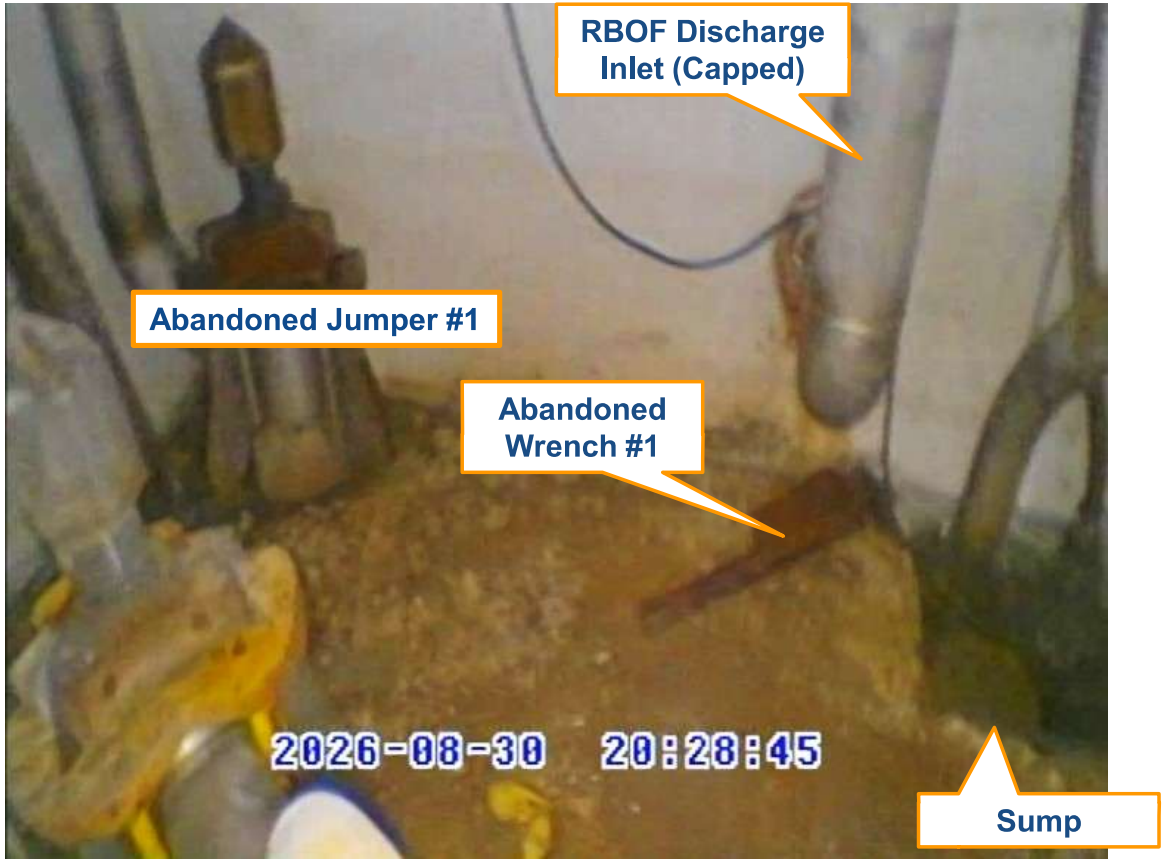
[P-DCF-H-01561, M-DCF-H-14713, M-M6-H-8899]

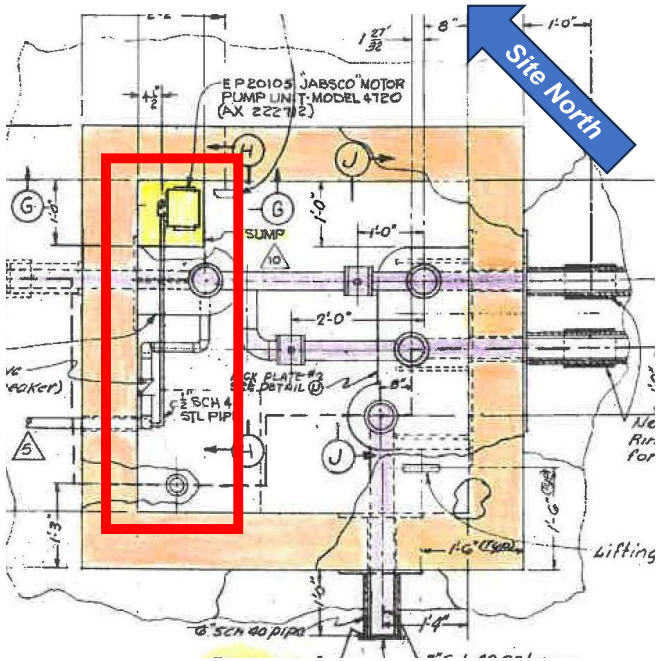
HDB-3 Current Condition – Floor, North Corner



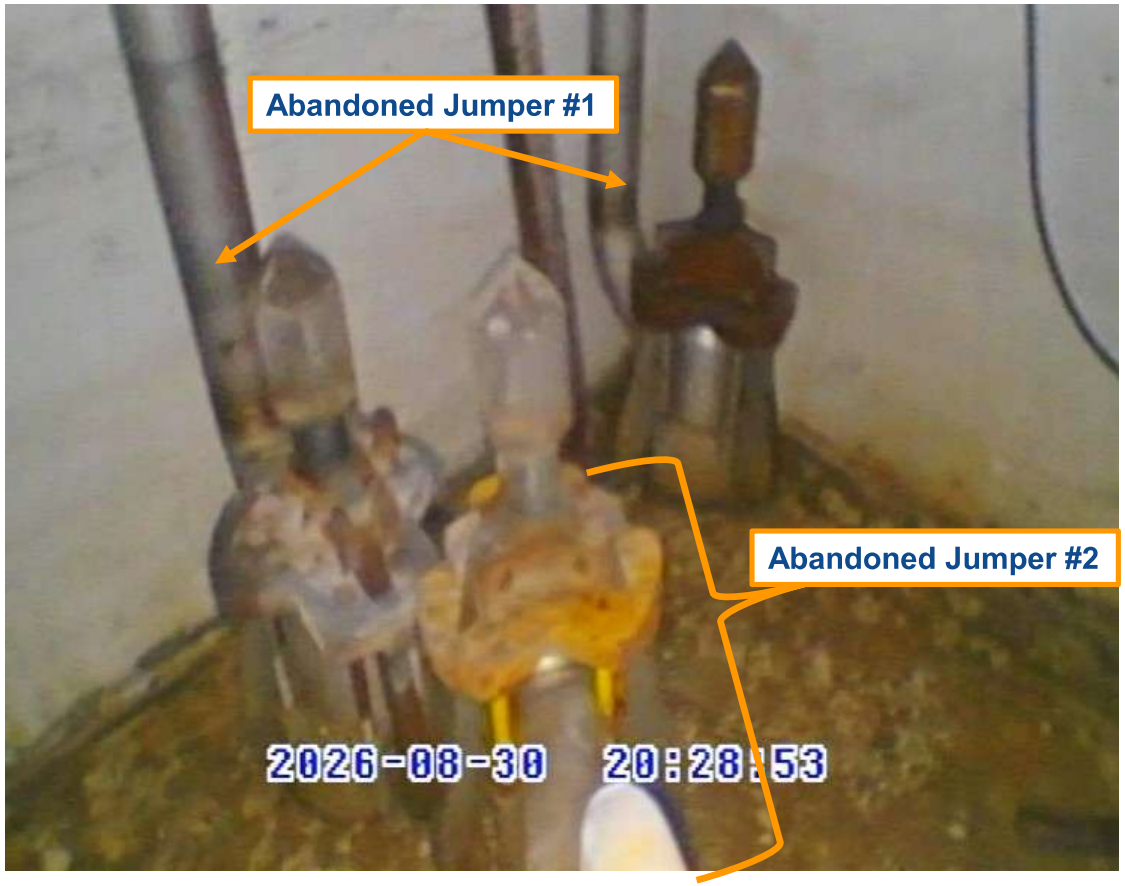


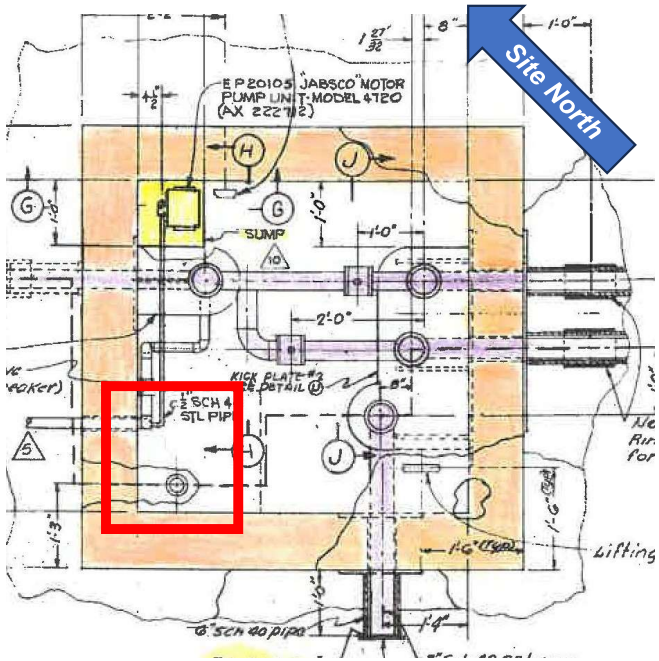
HDB-3 Current Condition – Floor, Northwest Wall





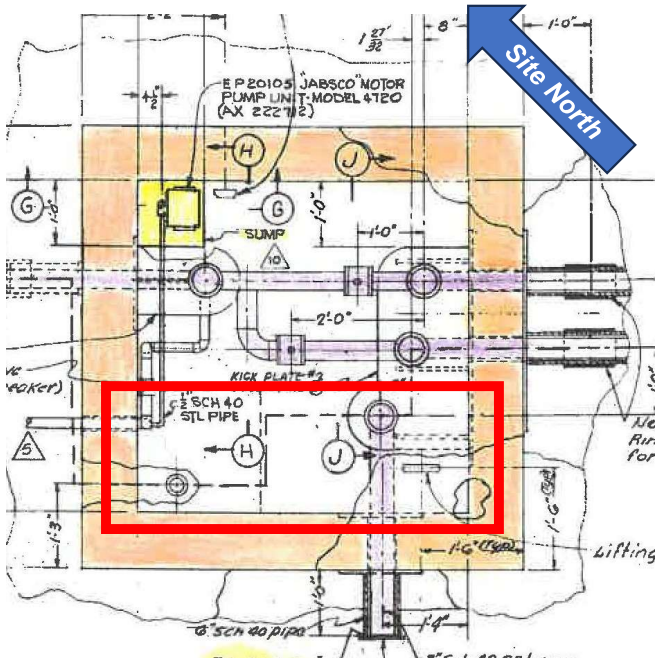
HDB-3 Current Condition – Floor, West Corner





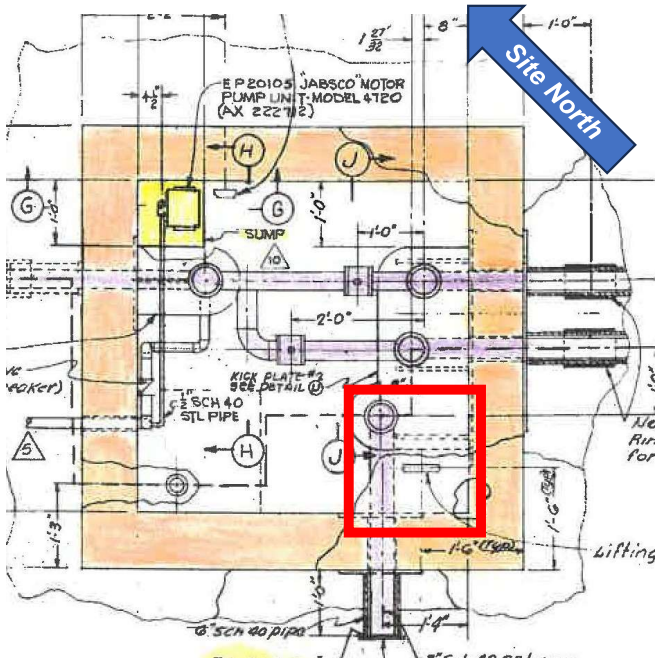
HDB-3 Current Condition – Floor, Southwest Wall



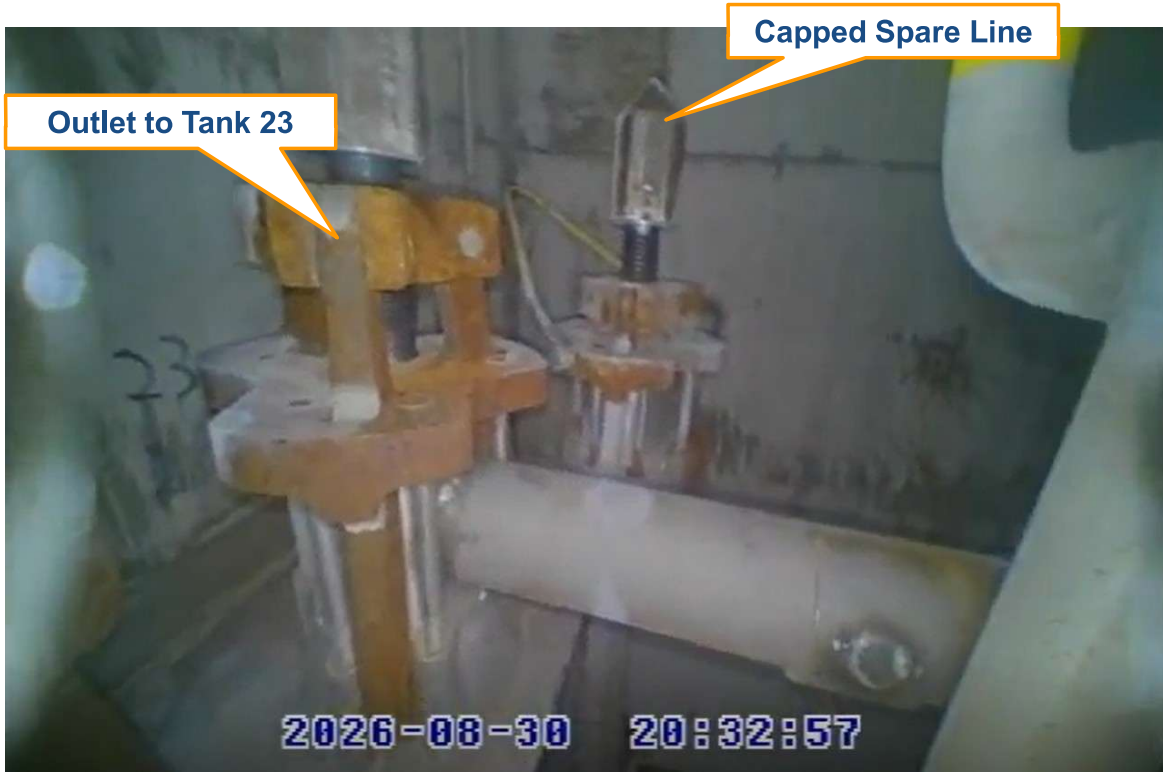


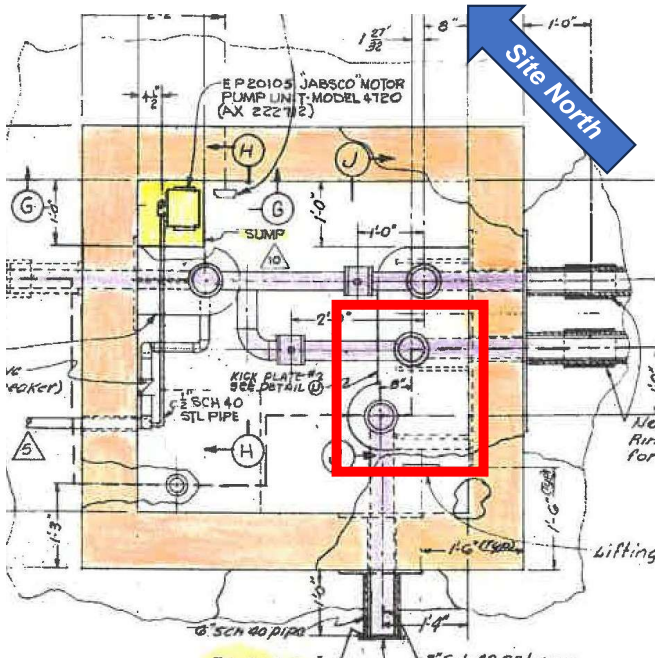
HDB-3 Current Condition – Floor, South Corner



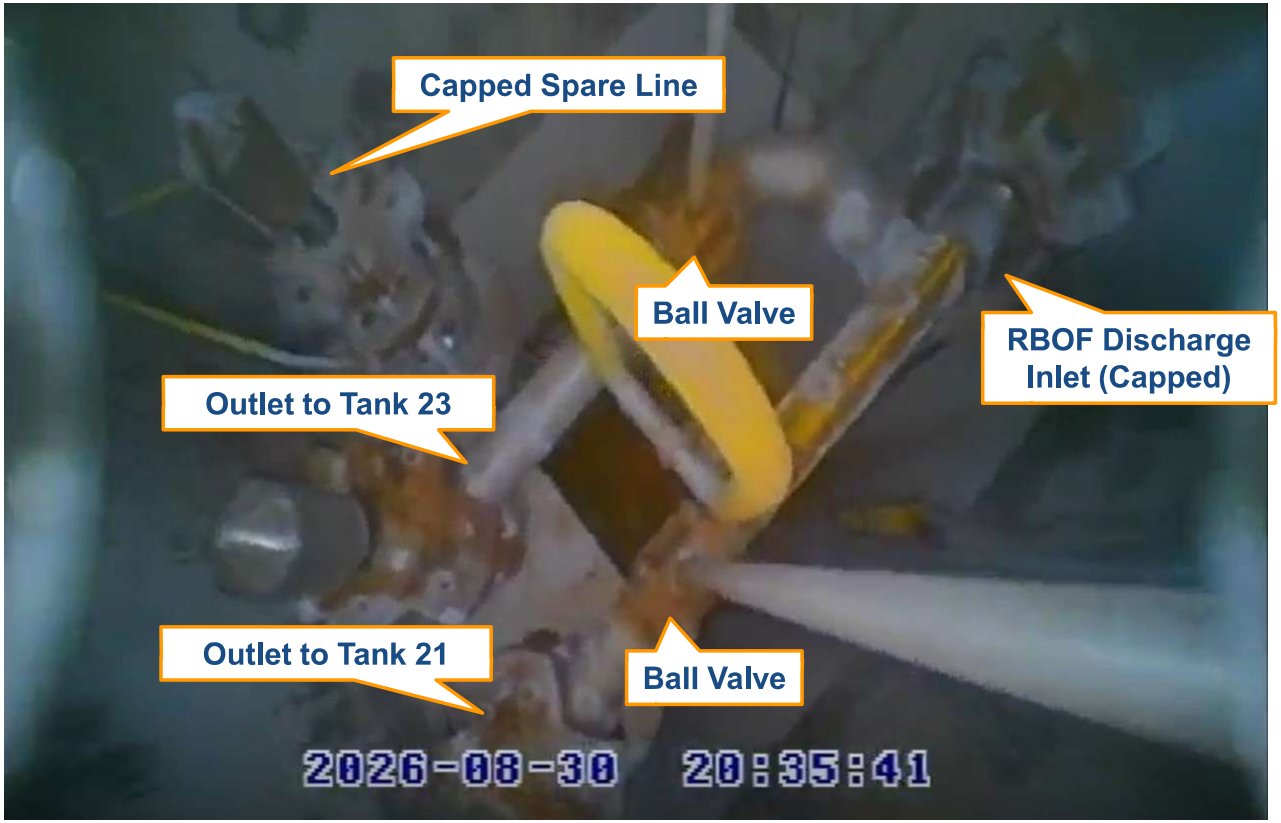


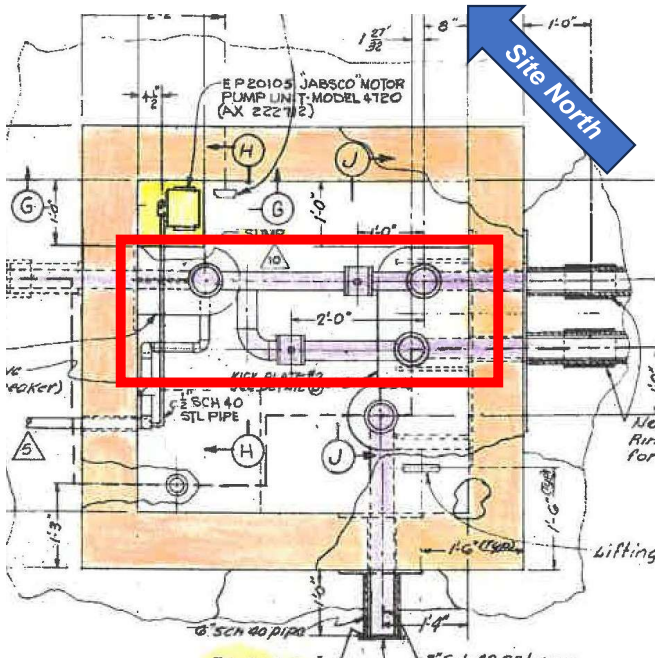
HDB-3 Current Condition - Piping





HDB-3 Current Condition – Piping





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