Applicable Field Changes _____

SOP 63-11

TEMPORARY 6,000-GALLON TANK SOLUTION TRANSFERS

Rev. 0

Approved P S Klaus
Operations Manager

Date 3/9/88

Approved T F Murawski
Cognizant Engineering Manager

Date 3/9/88

Approved D. A. Dooley
Radiation and Safety Manager

Date 3/9/88

Approved B R Christensen
Quality Assurance

Date 3-9-88

System Quality Level N

System Safety Class N

WEST VALLEY NUCLEAR SERVICES CO., INC.

March 1988

Prepared by: Beverly F. Lewis
B. F. Lewis
C. A. Curtis
D. T. Hendricks
L. C. Keeys
M. A. Messner
R. D. Osika

LED0434:ENG-364

RECORD OF REVISION

PROCEDURE

If there are changes to the procedure, the revision number increases by one. These changes are indicated in the left margin of the body by an arrow (>) at the beginning of the paragraph that contains a change. If the paragraph or section contains a partial revision and/or addition, the revised section is enclosed with arrows (>> ... <<).

Example:

> The arrow in the margin indicates a change. >>These arrows indicate that this section has been revised and/or added.<<

Procedure No. SOP 63-11, Rev. 0 Date: March, 1988

Rev. No.	Description of Changes	No. of Page
0	Initial Document	

RECORD OF REVISION (CONTINUATION SHEET)

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TEMPORARY 6,000-GALLON TANK SOLUTION TRANSFERS

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SOP 63-11

REV. 0

TEMPORARY 6,000-GALLON TANK SOLUTION TRANSFERS

1.0 SCOPE

This procedure applies to nonradioactive solution transfers from the temporary 6,000-gallon tank to various tanks in the Vitrification Facility. This procedure is for interim use until permanent installations is completed.

2.0 ABBREVIATIONS

2.1 MFHT - Melter Feed Hold Tank

2.2 TCCFMUB - Temporary Cold Chemical Feed Make Up Building

2.3 6K - 6,000 Gallons

2.4 11K - 11,000 Gallons

2.5 WO - Work Order

2.6 CTS - Component Test Stand

3.0 RESPONSIBILITIES

3.1 The Vitrification Test Group Manager is responsible for directing the overall operation of the Vitrification System.

3.2 Vitrification Test Engineering is responsible for the technical operation of the Vitrification System.

3.3 The Vitrification Operations Shift Supervisor is responsible for assignment of properly trained operators at the Vitrification Facility and for day-to-day direction of those operators.

3.4 The Vitrification Operator is responsible for operation of the Vitrification facility according to approved operating procedures, run plans, sample schedules, and the operating procedures in this SOP. When a situation is not covered by a procedure, he/she is responsible for notifying the Vitrification Operations Shift Supervisor.

3.5 Quality Assurance will perform surveillance of the ongoing work as deemed appropriate.

4.0 TOOLS, EQUIPMENT, COMPONENTS, AND REFERENCES

4.1 Tools, Equipment, and Components

4.1.1 Melter Feed Hold Tank 63-V-11

4.1.2 West Cold Chemical Feed Make Up Tank 65-D-02

4.1.3 East Cold Chemical Feed Make Up Tank 65-D-01

4.1.4 11,000-Gallon Tank 63-D-18

4.1.5 Temporary 6,000-Gallon Tank

4.1.6 Double Diaphragm Air Operated Pump T65-G-01 for East and West Cold Chemical Feed Make Up Tanks

4.1.7 Double Diaphragm Air Operated Pump T65-G-02 for 11K tank, MFHT, and 6K tank.

4.1.8 2-inch Chemical Transfer Hose and associated stainless steel hose fittings

4.1.9 Utility and Instrument Air

4.1.10 Demineralized water

4.2 References

4.2.1 WVDP-011, Industrial Hygiene and Safety Manual

5.0 GENERAL

5.1 Temporary 6,000-Gallon Tank

This tank is a vertical 304 L stainless steel tank measuring 109-inch OD and 150 inches in height. It is supported by four six-inch steel pipes of stainless steel doublers with adjustable base plates. It is located on the west side of the Vitrification Facility on a concrete pad. The 6K tank is used for interim storage of waste liquid from the Vitrification Facility.

5.2 Review and comply with the appropriate sections of the Vitrification Operations monthly IWP for solution transfers.

5.3 OPERATORS SHOULD PERFORM FREQUENT CHECKS ON SYSTEMS THAT ARE TURNED ON OR SHUT DOWN TO ASSURE THAT THE SYSTEM DOES WHAT IS EXPECTED, I.E., WATER FLOWS, PRESSURE RISES, LEVEL INDICATORS, ETC. IF THE REQUIRED ACTION THAT IS SUPPOSED TO HAPPEN DOES NOT HAPPEN, (1) STOP - DO NOT ATTEMPT TO PERFORM THE NEXT STEP, (2) SECURE SYSTEM IN A SAFE MODE, AND (3) NOTIFY SHIFT SUPERVISOR IMMEDIATELY.

6.0 PROCEDURE

ALL STEPS IN THIS PROCEDURE WHICH REQUIRE AN INSPECTION, THE RECORDING OF DATA, OR A SIGN-OFF WILL BE DENOTED BY A [+] IN THE LEFT HAND MARGIN. THE INSPECTION RESULTS, DATA, OR SIGN-OFF WILL BE RECORDED IN THE CTS OPERATIONS LOG BOOK, VITRIFICATION TANK LEVEL LOG, AND/OR SAMPLE LOG.

Any deviations from pump and/or hose type, size, and/or materials of construction shall be approved by the shift supervisor.

6.1 Solution Transfers From The 6,000-Gallon Tank (6K) To The 11,000-Gallon Tank 63-D-18.

[+] 6.1.1 Verify the transfer with the shift supervisor.

6.1.2 Obtain the 11,000-Gallon Tank (11K) level by:

a. Turn off the 11K agitator and tag per Standing Instruction 005, at the MCC and open the safety disconnect on top of the 11K.

b. Open the port cover.

c. Insert the wooden stick marked in inches into the 11K tank.

d. Remove the stick and replace the cover. Note the inches on the stick.

e. Close the safety disconnect, untag per Standing Instruction 005 and turn on the 11K agitator at the MCC, if it contains sufficient solution/slurry.

f. Using the 11K calibration chart, convert the inches to gallons.

6.1.3 Obtain the level of the 6,000-gallon tank by inserting the wooden stick marked in inches into one of the ports on the 6,000-gallon tank and noting the inches on the stick.

[+] 6.1.4 Verify the 11K tank has the void capacity to hold the amount of solution/slurry to be transferred. Compare the levels obtained in steps 6.1.2 and 6.1.3 with the levels last recorded in the Vitrification Tank Level Log Book. If there is a large discrepancy between the levels, contact the shift supervisor.

Void Capacity= .90 (Total Capacity) - Present Volume

6.1.5 Check with the shift supervisor or cognizant engineer to see if samples of either tank contents is required before the transfer. If required, take the sample, label, and log in Sample Log.

6.1.6 Check that the 6K drain valve is closed.

6.1.7 Check that the CTS west wall penetration valve T65-HV-116 and 01-14 transfer line valve T65-HV-127 are closed.

6.1.8 Obtain and connect a 2-inch KAMLOK fitted chemical transfer line from the 6K drain valve to the CTS west wall penetration inlet valve T65-HV-116.

6.1.9 Connect the 01-14 building chemical transfer line which runs along the SVS west wall to pump T65-G-01 suction side at valve T65-HV-101.

6.1.10 Check that the following valves are closed. See Figure 1.

T65-HV-100	T65-GL-001	T65-HV-102
T65-HV-002	T65-HV-101	T65-HV-104
T65-HV-103	T65-HV-105	T65-HV-106
T65-GT-002	T65-GT-001	T65-HV-117
TG-HV-003	65-GT-007	65DW-H-001

6.1.11 Check that the 6K bottom flush and drain valves are closed.

6.1.12 Walk the transfer line and verify all connections are secure and all KAMLOK fittings are tie wrapped.

6.1.13 Check the 11K pump station air oiler level and add Killfrost oil if necessary. Oil should feed at approximately 1 drop per minute.

6.1.14 Open utility air supply valve 6UA-GT-014.

6.1.15 Open the water trap petcock.

6.1.16 Open utility air supply valves 6UA-GT-038, and T65-GT-002.

6.1.17 Drain any condensate from the water trap.

6.1.18 Close the water trap petcock.

6.1.19 Open suction valves T65-HV-101 and T65-HV-101 for pump T65-G-01.

6.1.20 Open discharge valves T65-HV-102 and 65-HV-104.

6.1.21 Open 6K tank drain valve and CTS west wall penetration valve T65-HV-116

6.1.22 Open utility air supply valve T65-GT-001 and regulate the pump with valve T65-GT-002 until the pump is running smoothly.

6.1.23 Walk the transfer line and check for leaks. If there are any leaks, stop the pump and notify the shift supervisor.

6.1.24 Check the 11,000-gallon tank is receiving the solution from the 6K tank, by visual check through top port or at Micon 1 Loop 4 or Input 1. (Agitator may have to be turned off).

6.1.25 Periodically, monitor the level in the 11K tank and walk the transfer line to check for leaks, check that the air oiler is working properly.

6.1.26 When the 6K or 11K tank reaches the level designated by the WO, test plan or WOS, close the 6K bottom drain valve if the 6K still contains solution and open the flush valve at the bottom of the 6K to help clear transfer line. After approximately one minute shut the flush valve. If the 6K is empty at the end of the transfer, leave the bottom drain valve open and let the pump run for approximately one minute before shutting the pump off.

6.1.27 Close the 6,000-gallon tank drain valve, if open.

6.1.28 Close pump discharge valves T65-HV-102 and T65-HV-104.

6.1.29 Close CTS west wall penetration valve T65-HV-116.

6.1.30 Close pump suction valve T65-HV-101, and T65-HV-117.

6.1.31 Obtain the 11,000-gallon tank (11K) level by:

a. Turn off the 11K agitator and tag per Standing Instruction 005, at the MCC and open the safety disconnect on top of the 11K.

b. Open the port cover.

c. Insert the wooden stick marked in inches into the 11K tank.

d. Remove the stick and replace the cover. Note the inches on the stick.

e. Close the safety disconnect, untag per Standing Instruction 005 and turn on the 11K agitator at the MCC, if it contains sufficient solution/slurry.

f. Using the 11K calibration chart, convert the inches to gallons.

6.1.32 Obtain the level of the 6,000-gallon tank by inserting the wooden stick marked in inches into one of the ports on the 6,000-gallon tank and noting the inches on the stick.

6.1.33 Check that the 11,000-gallon tank agitator is on, if it contains sufficient solution/slurry.

[+] 6.1.34 Record the 6K tank and 11K tank levels in the Vitrification Tank Level Log Book, and in the CTS Operations Log Book.

6.1.35 Disconnect the transfer line from the 6K bottom drain valve and CTS west wall penetration and properly store.

[+] 6.1.36 Notify the shift supervisor that the transfer is complete.

6.2 Solution Transfers From The 6,000-Gallon Tank (6K) To The Melter Feed Hold Tank 63-V-11.

[+] 6.2.1 Verify the transfer with the shift supervisor.

6.2.2 Obtain the Melter Feed Hold Tank (MFHT) 63-V-11 level.

a. If the MFHT agitator is on, turn it off and tag per Standing Instruction 005.

b. Remove MFHT port "C" cover.

c. Insert the wooden stick marked in inches into the MFHT.

d. Remove the stick and replace the MFHT port "C" cover. Note the inches on the stick.

e. Untag per Standing Instruction 005 and turn on the MFHT agitator, if there is sufficient solution/slurry. If ok'd by the VOS, leave the agitator off for transfer.

f. Using the MFHT calibration chart, convert inches to gallons.

6.2.3 Obtain the 6,000-gallon tank (6K) level by inserting the wooden stick marked in inches into one of the top ports of the 6K. Note the inches on the stick when removing.

[+] 6.2.4 Verify the MFHT has the void capacity to hold the amount of solution/slurry to be transferred. Compare the levels obtained in steps 6.2.2 and 6.2.3 with the levels last recorded in the Vitrification Tank Level Log Book. If there is a large discrepancy between the levels, contact the shift supervisor.

Void Capacity= .90 (Total Capacity) - Present Volume

6.2.5 Turn off the MFHT agitator fan and tag per Standing Instruction 005, and remove one of the HANFORD connectors or port C cover from the MFHT.

6.2.6 Check with the shift supervisor or cognizant engineer to see if samples of either tank contents is required before the transfer. If required, take the sample, label, and log in Sample Log.

6.2.7 Check that the 6K drain valve is closed.

6.2.8 Check that the CTS west wall penetration valve T65-HV-116 and 01-14 transfer line valve T65-HV-127 are closed.

6.2.9 Obtain and connect a 2-inch KAMLOK fitted chemical transfer hose from the bottom of the 6K tank drain valve to the CTS west wall penetration inlet valve T65-HV-116.

6.2.10 Connect the 01-14 2-inch chemical transfer hose which runs along the SVS west wall to pump T65-G-01 suction side at valve T65-HV-101.

6.2.11 Obtain a 2-inch chemical transfer hose sufficient in length to reach from the discharge side of pump T65-G-01 to the MFHT and connect to pump discharge valve T-65-HV-103.

6.2.12 Run the line on the ground and insert it the other end to the transfer line into the MFHT nozzle "C", or connect the line to a HANFORD connector with an attached KAMLOK fitting made for MFHT transfers.

6.2.13 Walk the transfer line and verify all the connections are secure and all the KAMLOK fittings are tie wrapped.

6.2.14 Check that the following valves are closed. See Figure 2.

T65-HV-101	T65-HV-100	T65-HV-002
T65-HV-103	T65-HV-104	T65-HV-105
T65-HV-106	T65-GL-001	T65-GT-001
T65-GT-002	T65-HV-117	65DW-H-001
T65-HV-003	T65-HV-102	

6.2.15 Check that the 6K bottom bleed valve is closed

6.2.16 Open pump inlet valve T65-HV-101, and T65-HV-117, 6K tank drain valve and CTS west wall penetration valve T65-HV-116.

6.2.17 Open utility air supply valves 6UA-GT-038, T65-GT-002, and 6UA-GT-014.

6.2.18 Open the petcock on the water trap and drain any condensate.

6.2.19 Close the petcock on the water trap.

6.2.20 Check the 11K pump station air oiler level and add Killfrost oil if necessary. Oil should feed at approximately 1 drop per minute.

6.2.21 Open pump outlet valves T65-HV-102 and T65-HV-103.

6.2.22 Open utility air supply valve T65-GT-001 fully.

6.2.23 Throttle the utility air valve T65-GT-002 to achieve a smooth pumping action.

6.2.24 Check that the MFHT 63-V-11 is receiving the solution transfer either by looking in Port "C" or at local level instrumentation on LI-1101.

6.2.25 Walk the transfer line periodically and check for leaks. If any leaks are detected, shut down the pump and notify the shift supervisor.

6.2.26 When the 6K or MFHT tank reaches the level designated by the WO, test plan or VOS. Close the 6K bottom drain valve if the 6K still contains solution and open the flush valve at the bottom of the 6K to help clear transfer line. After approximately one minute shut the flush valve.

NOTE: If the 6K is empty at the end of the transfer, leave the bottom drain valve open and let the pump run for approximately one minute then close the 6K drain valve and shut off the pump.

6.2.27 Close pump discharge valves T65-HV-102 and T65-HV-103.

6.2.28 Close CTS west wall penetration valve T65-HV-116.

6.2.29 Close pump suction valve T65-HV-101, and T65-HV-117.

6.2.30 Disconnect the two-inch chemical transfer hose from T65-HV-103 and let the hose contents drain into the MFHT, then remove the hose from the MFHT and store properly.

6.2.31 Obtain the Melter Feed Hold Tank (MFHT) 63-V-11 level.

a. If the MFHT agitator is on, turn it off and tag per Standing Instruction 005.

b. Remove MFHT port "C" cover.

c. Insert the wooden stick marked in inches into the MFHT.

d. Remove the stick and replace the MFHT port "C" cover. Note the inches on the stick.

e. Untag per Standing Instruction 005 and turn on the MFHT agitator, if there is sufficient solution/slurry.

f. Using the MFHT calibration chart convert inches to gallons.

6.2.32 Obtain the 6,000-gallon tank (6K) level by inserting the wooden stick marked in inches into one or the ports on the top of the 6K. Note the inches on the stick when removing.

[+] 6.2.33 Record the level of the MFHT and 6,000- gallon tank in the Vitrification Tank Level Log Book, and in the CTS Operations Log Book.

6.2.34 If the the MFHT contains sufficient slurry, turn on the MFHT agitator.

[+] 6.2.35 Notify the shift supervisor that the transfer is complete.

6.3 Solution Transfers From The 6,000-Gallon Tank (6K) To The East or West Temporary Cold Chemical Feed Make Up Tanks, 65-D-01 or 65-D-02.

[•] 6.3.1 Verify the transfer with the shift supervisor.

6.3.2 Obtain the 6K tank level by inserting a wooden stick marked in inches into one of the top ports of the 6K. Note the inches when removing the stick.

6.3.3 Obtain the east or west tank level by shining a light inside the tank. You will be able to see the level of the slurry or solution. Note the gallon marker on the outside of the tank that corresponds to that level.

[•] 6.3.4 Verify the receiving tank has the void capacity to hold the amount of solution/slurry to be transferred. Compare the levels obtained in steps 6.3.2 and 6.3.3 with the levels last recorded in the Vitrification Tank Level Log Book. If there is a large discrepancy between the levels, contact the shift supervisor.

Void Capacity= .90 (Total Capacity) - Present Volume

6.3.5 Check with the shift supervisor or cognizant engineer to see if samples of either tank contents are required before the transfer. If required, take the sample, label, and log in Sample Log.

6.3.6 Check that the 6,000-gallon tank drain valve and the bottom flush valve are closed and the CTS west wall penetration valve T65-HV-116 and 01-14 transfer line valve T65-HV-127 are closed.

6.3.7 Connect the garage 2-inch chemical transfer line at the 11K pump station to pump discharge valve T65-HV-105.

6.3.8 Connect the other end of the 2-inch chemical transfer hose that was connected in step 6.3.7 to the recycle line located the TCCFMUB to the top of the east and west tanks (sandpiper recycle line in the garage will have to be disconnected from that pump).

6.3.9 Obtain and connect a 2-inch chemical transfer hose from the 6K tank drain valve to the CTS west wall penetration valve T65-HV-116.

6.3.10 Connect the 01-14 building 2-inch chemical transfer line which runs along the SVS area west wall to the 11k pump station to the suction side of the pump at valve T65-HV-101.

6.3.11 Check that the following valves are closed in the Temporary Cold Chemical Feed Make Up Building. See Figure 3 or 4.

T65-HV-107	T65-HV-108	T65-HV-111
T65-HV-114	T65-HV-112	T65-HV-113
6DW-H-014	65DW-HV-015	65DW-HV-018
6DW-HV-016	65DW-HV-017	65DW-GT-022
65DW-HV-023	65DW-HV-024	65DW-GT-021
65UA-HV-002	T65-HV-110	65DW-HV-025
T65-HV-109	65DW-GT-020	T65-BV-125
		T65-BV-124

6.3.12 Check that the following valves are closed. See Figure 3 or 4.

T65-HV-100	T65-GL-001	T65-HV-102
T65-HV-002	T65-HV-101	T65-HV-104
T65-HV-103	T65-HV-105	T65-HV-106
T65-GT-002	T65-GT-001	T65-HV-117
		65DW-H-001

6.3.13 Walk the transfer line and check that all connections are secure and all KAMLOK fittings are tie wrapped.

6.3.14 Check the 11K pump station air oiler level and add Killfrost oil if necessary. Oil should feed at approximately 1 drop per minute.

6.3.15 Open utility air supply valve 6UA-GT-014.

6.3.16 Open the water trap petcock.

6.3.17 Open utility air supply valves 6UA-GT-038, and T65-GT-002.

6.3.18 Drain any condensate from the water trap.

6.3.19 Close the water trap petcock.

6.3.20 Open the east tank top inlet valve T65-HV-107 if transferring to the east tank. Or open the west tank top inlet valve T65-HV-108 if transferring to the west tank.

6.3.21 Open valve T65-HV-115 located between instrument racks 1C and 5 on the 100-foot level north aisle.

6.3.22 Open pump discharge valves T65-HV-102 and T65-HV-105.

6.3.23 Open the 6K tank drain valve and CTS west wall penetration valve T65-HV-116.

6.3.24 Open pump T65-G-01 inlet valve T65-HV-101 and T65-HV-117.

6.3.25 Open utility air supply valve T65-GT-001 fully and throttle valve T65-GT-102 to achieve a smooth pumping action.

6.3.26 Walk the transfer line and check for leaks. If there are any leaks, stop the pump and notify the shift supervisor.

6.3.27 Check that the receiving tank is receiving the solution, by visually checking through the top of the tank that is receiving the solution.

6.3.28 Periodically, monitor the level in the east or west tank and walk the transfer line to check for leaks. Check to see the air oiler is working properly.

6.3.29 When the 6K or east or west tank reaches the level designated by the WO, test plan or VOS. Close the 6K bottom drain valve if the 6K still contains solution and open the flush valve at the bottom of the 6K to help clear transfer line. After approximately one minute shut the flush valve. If the 6K is empty at the end of the transfer, leave the bottom drain valve open and let the pump run for approximately one minute then close the 6K drain valve and shut off the pump.

6.3.30 Close utility air supply valve T65-GT-002. This shuts the pump off, then close T65-GT-001.

6.3.31 Close the 6,000-gallon tank drain valve, if open.

6.3.32 Close the CTS west wall penetration valve 65-HV-116.

6.3.33 Close pump discharge valves T65-HV-102 and T65-HV-105.

6.3.34 Close pump suction valve T65-HV-101, and T65-HV-117.

6.3.35 Close transfer valve T65-HV-115 located between instrument racks 1C and 5 on the 100-foot level north aisle.

6.3.36 Close the east or west tank top valve T65-HV-107 or T65-HV-108. Which ever tank the solution is being transferred to.

6.3.37 Disconnect and remove and store the 2-inch chemical transfer line between the 6K tank drain valve and T65-HV-116.

6.3.38 Disconnect the 01-14 2-inch chemical transfer hose from the pump suction valve T65-HV-101.

6.3.39 Obtain the 6K tank level by inserting a wooden stick marked in inches into one of the ports in the 6K. Note the inches when removing the stick.

6.3.40 Obtain the east or west tank level by shining a light inside the tank. You will be able to see the level of the slurry or solution. Note the gallon marker on the outside of the tank that corresponds to that level.

6.3.41 If required by work order or the shift supervisor, check that the east tank agitator is on.

[+] 6.3.42 Record the receiving tank and 6K tank levels in the Vitrification Tank Level Log Book, and in the CTS Operations Log Book.

[+] 6.3.43 Notify the VOS that the transfer is complete.

7.0 FIGURES

7.1 Transfer from 6K to 11K Tank 63D-18 Flow Diagram

7.2 Transfer from 6K to MFHT 63V-011 Flow Diagram

7.3 Transfer from 6K to East Tank 65-D-01 Flow Diagram

7.4 Transfer from 6K to West Tank 65-D-02 Flow Diagram

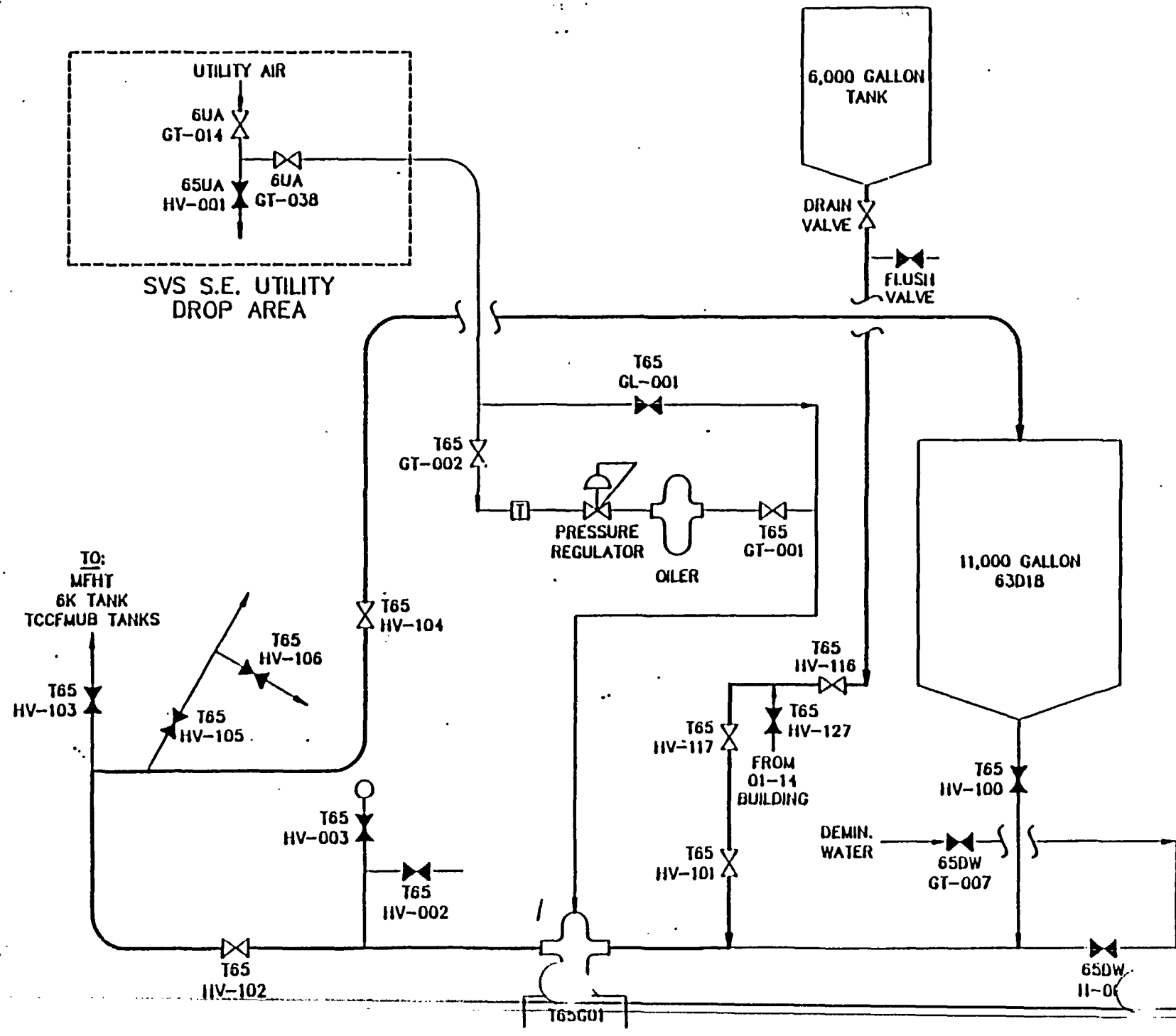

FIGURE 1 TRANSFER FROM 6K TANK TO 11K TANK 63-D18 FLOW DIAGRAM

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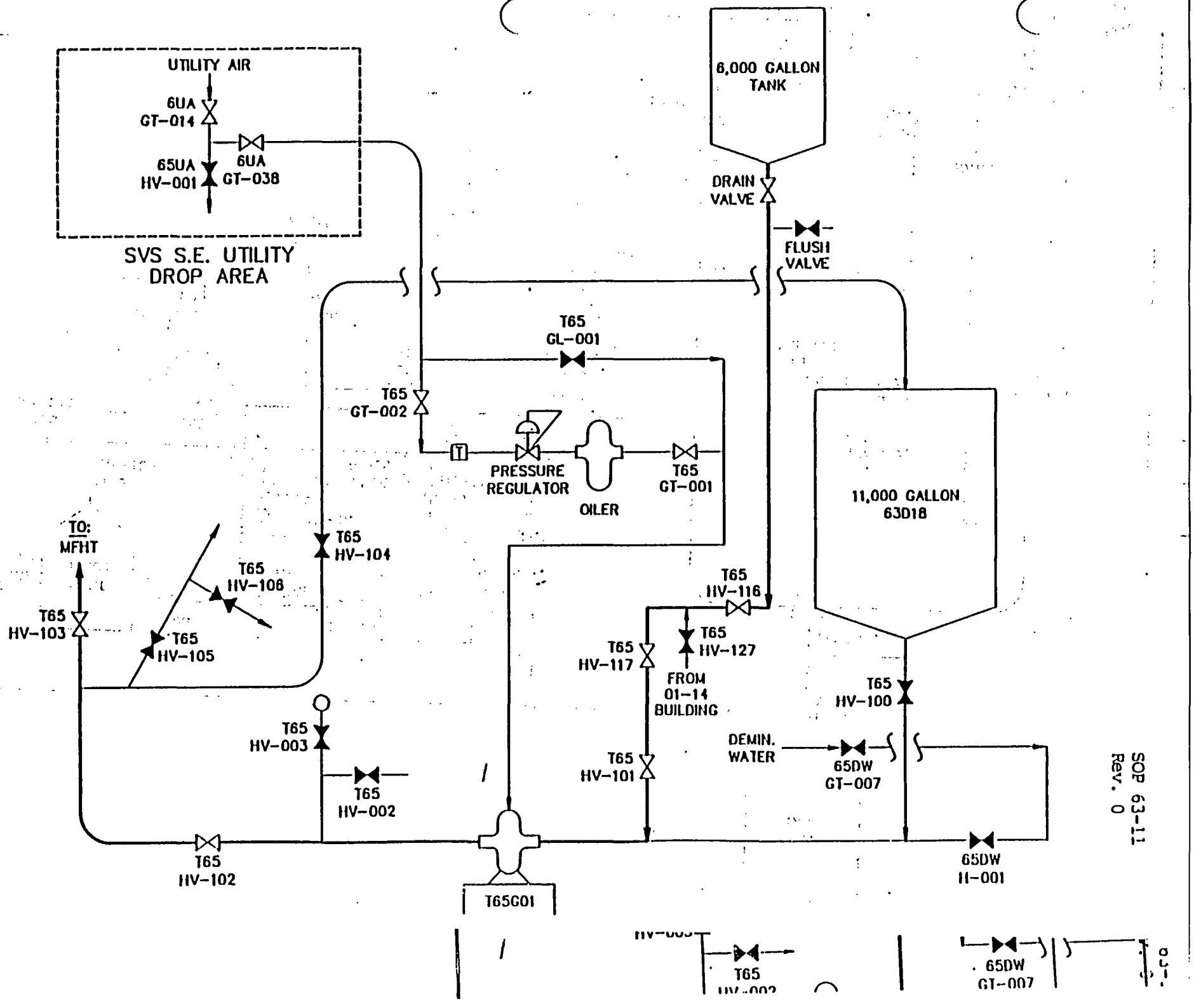

FIGURE 2 TRANSFER FROM 6K TANK TO MFHT 63-V011 FLOW DIAGRAM

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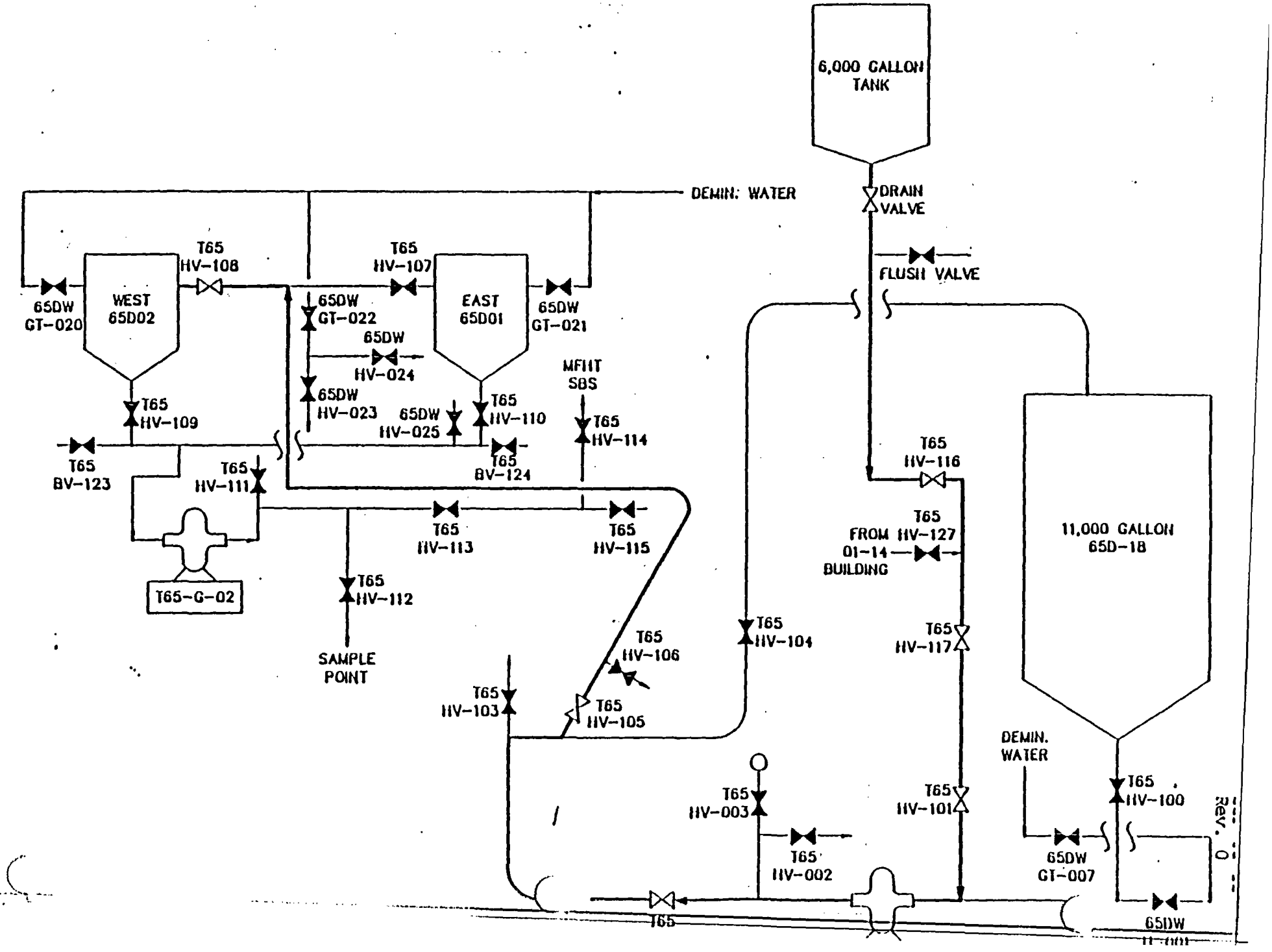

FIGURE 4 TRANSFER FROM 6K TANK TO WEST TANK 65-D02 FLOW DIAGRAM