Operate Personnel Decontamination Unit

Tank Farm Operating Procedure

TANK FARMS

USQ # TF-14-1568-S, Rev. 4

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for the setup, operation, and shut down of the Personnel Decontamination Unit (PDU) POR291-EMER-001 and POR292-EMER-001 Mobile Office numbers MO-2172 and MO-2244 respectively.

This procedure also provides instructions for:

- Performing and monitoring water addition to 241-AY-101 via riser AY101-WST-RISER-066
- Performing and monitoring water addition to 241-SY-102 via riser SY102-WST-RISER-022
- Maintaining inventory of water usage in 241-AY-101 and/or 241-SY-102.

1.2 Scope

1.2.1 This procedure applies to the following equipment and components of the PDU:

- P-101, Water Supply Pump
- P-102, Water Supply Priming Pump
- Water supply tank TK-101 and delivery system
- Pump Control Panel
- Alarm and level control panel
- V-112, Mixing Valve (Top), Supplies Showers 1 & 2/Sink 1 and associated CP-101, Mixing Valve 112 Control Panel, Supplies Showers 1 & 2/Sink 1
- V-113 Mixing Valve (Bottom) Supplies Showers 3 & 4/Sink 2 and associated CP-102, Mixing Valve 113 Control Panel, Supplies Showers 3 & 4/Sink 2 control panels
- EW-101, Eyewash Sink 1 and EW-102, Eyewash Sink 2
- Decontamination Showers
- Sink
- AC-101, Air Conditioning Unit Roof Mounted, AC-102 Air Conditioning Unit Roof, and EF-102, Negative Air Exhaust Fan Roof Mounted With HEPA Filter
- P-103, Grey water pump

(Continued on Next Page)
1.2 Scope (Cont.)

- TK-102, Grey Water Tank 201 GAL and TK-103, Grey Water Tank 201 GAL
- Electrical System
- Access Components
- Leveling Components
- UVS-101, Ultra Violet Sanitizer
- Water Buffalo.

1.2.2 Initial setup of the PDU will require Sections 4.3 through 5.3 to be completed, prior to establishing the unit as operational.

1.2.3 This procedure applies to the use of a 540 gallon capacity portable tanker commonly referred to as the “water buffalo”. Grey water is transferred from the PDU to the water buffalo, then from the water buffalo to Tank Farms Waste Storage Tank 241-AY-101 and/or 241-SY-102.

1.2.4 This procedure also applies to addition of water to the following:

- 241-AY-101 at riser AY101-WST-RISER-066
- 241-SY-102 via riser SY102-WST-RISER-022.
2.0 INFORMATION

2.1 General Information

2.1.1 The PDU must be supplied with a 120/240Volt / 200 amp single-phase power source.

NOTE - The maximum capacity of the water supply tank is 313 gallons. The combined capacity of the hot water heaters is 130 gallons but are downstream of the supply pump so do not add to the supply capacity. The maximum combined capacity of the grey water tanks is 402 gallons which exceeds the supply tanks 313 gallons.

2.1.2 The water supply tank must be a minimum of ¾ full of potable water to provide adequate decontamination capability during all operational status.

2.1.3 Grey water tank has a 402 gallon capacity; water buffalo tank has a 540 gallon capacity.

2.1.4 Only potable water shall be used to fill TK-101, Water Supply Tank.

2.1.5 The PDU must be tested on a weekly basis using instructions in Section 5.3.

2.1.6 Access doors to decontamination portions of the PDU must remain UNLOCKED when the unit is in operational status.

2.1.7 All electrical, plumbing, and system support connections must be in place before operating the PDU.

2.1.8 Equipment EIN references should be preceded by POR291-EMER- or POR292-EMER- as applicable.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

**WARNING** - Failure to don proper PPE before performing circuit breaker, electrical disconnect, or starter operations, may result in personnel injury or death.

**WARNING** - Grey water tank and/or water buffalo may contain potentially radioactively contaminated water. Failure to contact HPT and don proper PPE when pumping water could result in possible radiological contamination to personnel.

**WARNING** - 12.5% Sodium hypochlorite is an oxidizer. Failure to don proper PPE could result in chemical burns to personnel.

**WARNING** - Access under the PDU is considered a confined space and failure to have IH evaluate the confined space per DOE-0360 prior to entry may result in personnel injury or death.

3.1.1 Personnel trained in the operation of breakers and disconnects will wear the following PPE as a minimum:

- Non-melting (untreated natural fiber) long-sleeved shirt
- Safety glasses
- Leather or insulating gloves
- Hearing protection.

3.1.2 For circuits less than or equal to 240 VAC supplied by a single transformer rated at less than 240 KVA, an arc flash hazard analysis is not required.

3.1.3 A qualified person, working in the Restricted Approach Boundary at 50volts to 300volts shall be insulated or guarded from live parts or avoid contact for shock protection.

3.1.4 Ensure safety glasses with side shields and leather gloves are worn when installing/removing platform, steps, and panels.

3.1.5 Obtain and review GHS-SDS and/or MSDS for 12.5% Sodium Hypochlorite (GHS-SDS and/or MSDS #012044) when product is used for chlorination of water. Ensure splash goggles, full face shield, rubber gloves, and protective clothing are worn.
3.2 Equipment Safety

CAUTION - Failure to ensure all water in the PDU supply and Grey water tanks are removed prior to moving to a new work location and/or while the system is being staged at a work location could result in damage to the units frame.

CAUTION - Exceeding maximum tank liquid level of 370” or maximum fill volume specified on Data Sheet 1 may cause structural damage to the 241-AY-101 tank. (OSD-T-151-00007)

CAUTION - Exceeding maximum tank liquid level of 422” or maximum fill volume specified on Data Sheet 1 may cause structural damage the 241-SY-102 tank (OSD-T-151-00007).

3.3 Radiation and Contamination Control

3.3.1 When work is performed in or when work will result in a high contamination, high radiation, or an airborne radioactivity area, an approved work package or technical procedure must be developed which is reviewed by Radiological Control per the ALARA work planning procedure TFC-ESHQ-RP_RWP-C-03.W

NOTE - After the PDU has been used to decontaminate personnel, it must be posted and handled as a radioactive material area per TFC-ESHQ-RP_ADM-C-14.

3.3.2 If Radiological Buffer Area for contamination control, Contamination Area, or High Contamination Area is posted for in process use, then the area must be decontaminated and down posted to Radioactive Material Area status after use.

3.3.3 When disconnecting, breaching or opening systems or system components that are currently or previously connected to waste tanks or waste transfer systems;

- Continuous HPT coverage is required
- Pre-job and post-job surveys are required
- ENSURE waste bags are immediately available to receive radioactive waste generated during the system breech.
- PERFORM in-progress surveys and decontamination following the system breech to maintain contamination levels below RWP action values.
3.4 Environmental Compliance

3.4.1 Emergency use of the PDU requires contacting Environmental On-Call per TFC-ESHQ-ENV_FS-C-01.

3.4.2 All non-emergency use, testing and discharges of the water from PDU system must be done in accordance with TFC-ESHQ-ENV-RM-C-04 Waster Discharge in Tank Farm Facilities.

3.4.3 All water added to the 313 gallon TK-101 Water Supply Tank, two 65 gallon water heaters (HTR-101 and HTR-102), and all water from the aforementioned sources that is allowed to be drained to the ground must be recorded in the Decontamination Trailer Water Usage Log (Site Form #A-6003-914) located inside the PDU. Potable water that is allowed to be drained to the ground must be at least 300 feet from a posted Contamination Area (CA) or a known active or inactive waste disposal pond, ditch, trench, or crib if exceeding 60 gallons.

3.4.4 Any time the TK-102 and/or TK-103 Grey Water Tank is suspected of containing mixed waste (material containing both radioactive and hazardous chemical components), Waste Services must be notified to perform waste designation. If the content of the Grey Water Tank is determined to be mixed waste, the 90 day RCRA requirements may apply.

3.4.5 Report any spills of water to Environmental per the TFC-ESHQ-ENV_FS-C-01.

3.4.6 When PDU is used for decontamination, and the ventilation is used, contact Environmental for log keeping requirements to document air emissions.
3.5 Limits

NOTE - No TSR controls are applicable unless the addition of grey water into a DST >10,000 gallons. The water buffalo tank capacity is much lower than the limit, but changes to this method of disposing of the grey water may trigger flammable gas controls.

OPERATING SPECIFICATION DOCUMENT

OSD-T-151-00007, Operating Specifications for the Double-Shell Storage Tanks
4.0 PREREQUISITES

4.1 Special Tools, Equipment and Supplies

The following special tools, equipment and supplies may be needed to perform this procedure:

- Potable water supply line(s), for filling the tanks with potable water
- Water buffalo Tank with transfer pump
- Grey Tank discharge hose(s)
- Tamper Proof Seals for lockers
- Wheel Chocks
- Decontamination Trailer Water Usage Log (Site Form #A-6003-914)
- Approximately 150 to 200 feet of \( \frac{3}{4} \) inch Water hose with fittings when using hose bib connection
- Communication devices between assigned personnel
- Water meter with flow totalizer compatible with type of hose being used
- Adapter for \( \frac{3}{4} \) inch water hose to 2 inch Camlock connection on riser
- Plastic sleeving
- Tape
- Drape/catch
- Absorbent material
- Flashlight.

4.2 Performance Documents

The following documents may be needed to perform this procedure:

- TO-100-052, Perform Waste Generation, Segregation, Accumulation and Clean-up
- DOE-0360, Hanford Site Confined Space Procedure (HSCSP)
- GHS-SDS and/or MSDS #012044 for 12.5% Sodium Hypochlorite
- GHS-SDS and/or MSDS #012915 for Clorox.
4.3 **Field Preparation**

4.3.1 **PRIOR** to using this procedure, **REVIEW** the PDU system layout as shown on Figure 1.

4.3.2 **IF** draining TK-101, WATER SUPPLY TANK 313 GAL, **OBTAIN** prior approval from Environmental for location to be used to drain TK-101.

4.3.3 **IF** disposing of contents of TK-102, GREY WATER TANK 201 GAL and/or TK-103, GREY WATER TANK 201 GAL, **CONTACT** Waste Management for specific disposal instructions.

4.3.4 **RECORD** all water added and drained on Decontamination Trailer Water Usage Log (Site Form #A-6003-914) located inside the PDU.

4.3.5 **IF** adding water, **CONTACT** potable water truck.

4.3.6 **IF** shocking water in accordance with Section 5.1, **VERIFY** portable eyewash station with drench hose is staged at the worksite.

_________________________ / _________________________ / ____________
Signature                  Print (first & last)          Date

Shift Manager /OE
5.0 PROCEDURES

NOTE - The following Sections may be worked independently or in any logical order at the direction of the Shift Manager.

5.1 Perform Shock Water System/Maintenance

WARNING
12.5% Sodium hypochlorite is an oxidizer. Failure to don proper PPE could result in chemical burns to personnel

NOTE - This section is used following a maintenance evolution where the water supply piping has been disconnected/broken and sterilization is needed prior to filling for Normal Operations.

- All potable water certification is performed by the water purveyor.

5.1.1 ENSURE personnel who could contact shock water wear splash goggles and rubber or nitrile gloves to prevent chemical burns.

5.1.2 CONTACT the water purveyor to fill water supply tank with shocked potable water.

5.1.3 ESTABLISH the electrical lineup per Checklist 2.

WARNING
Access under the PDU is considered a confined space and failure to have IH evaluate the confined space per DOE-0360 prior to entry may result in personnel injury or death.

5.1.4 PRIOR to performing Checklist 1 which contains valves located under the PDU, CONFIRM Industrial Hygiene has evaluated the confined space and it is safe for entry.

5.1.5 ESTABLISH valve line-up per Checklist 1.
5.1 Perform Shock Water System/Maintenance (Cont.)

5.1.6 **CONNECT** water supply hose to 1-1/2” POTABLE WATER INPUT located by V-101, INLET ISOLATION VALVE SUPPLY TANK on west side of PDU.

5.1.7 **CONNECT** ¾” water hoses to the following valves located in the equipment room:

- **•** V-114, DRAIN VALVE HOT WATER INLET TO MIXING VALVE and
- **•** V-115, DRAIN VALVE COLD WATER INLET TO MIXING VALVE.

5.1.8 **OPEN** valve V-101, INLET ISOLATION VALVE SUPPLY TANK.

5.1.9 **SETUP** the mixing valves as follows:

5.1.9.1 **ENSURE** the mixing valve LOCAL/REMOTE selector switch on both mixing valve units (located on the right side of the silver knob box) is positioned to LOCAL.

5.1.9.2 **CLOSE** V-112, MIXING VALVE (TOP) SUPPLIES SHOWERS 1 & 2 / SINK 1 by rotating both silver knobs on top clockwise.

5.1.9.3 **CLOSE** V-113, MIXING VALVE (TOP) SUPPLIES SHOWERS 3 & 4 / SINK 2 by rotating both silver knobs on top clockwise.

5.1.9.4 **OPEN** V-112, MIXING VALVE (TOP) SUPPLIES SHOWERS 1 & 2 / SINK 1 by rotating both silver knobs on top counter clockwise approximately 1/16 to 1/8 of a turn.

5.1.9.5 **OPEN** V-113, MIXING VALVE (TOP) SUPPLIES SHOWERS 3 & 4 / SINK 2 by rotating both silver knobs on top counter clockwise approximately 1/16 to 1/8 of a turn.
5.1 Perform Shock Water System/Maintenance (Cont.)

NOTE - The EMO-101, SYSTEM START AND EMERGENCY STOP is located on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS.

5.1.10 **PULL OUT** EMO-101, SYSTEM START AND EMERGENCY STOP button (See Attachment 1).

5.1.11 **INSTRUCT** water purveyor to start truck pump.

5.1.12 **SLOWLY OPEN** water truck discharge valve.

NOTE - Water Supply Priming Pump will automatically stop once it reaches system pressure (approximately 40 psi).
- Observing the flow meter or totalizer from the water purveyor truck or the water gauge on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS inside the PDU indicating approximately ½ full can be used to determine the 150 gallons in Step 5.1.13.

5.1.13 **AFTER** more than approximately 150 gallons of water is in the supply tank, **POSITION** MS-103, PRIMING PUMP (P-2) START/STOP switch located on West wall of equipment room to ON to start P-102, WATER SUPPLY PRIMING PUMP.

5.1.14 **AFTER** P-102, WATER SUPPLY PRIMING PUMP shuts off, **START** P-101, WATER SUPPLY PUMP by placing ST-SP-101, WATER SUPPLY PUMP (P-1) START/STOP button to ON.

**Special Instruction**

As the tank fills, the discharge valve from the truck or V-101 should be throttled down to lower flow to help prevent overflowing the TK-101, WATER SUPPLY TANK.

5.1.15 **OBSERVE** flow in FG-101, ROTARY FLOW GLASS WATER SUPPLY located in Equipment Room.

NOTE - Once the priming pump has been set to ON, the priming pump will re-start automatically and run until pressure is ≥ 40 psi.

5.1.16 **IF** prime is lost on P-101, WATER SUPPLY PUMP any time during filling, **CHECK** P-102, WATER SUPPLY PRIMING PUMP automatically re-starts to pressurize system to ≥ 40 psi **AND**

**REPEAT** Step 5.1.14.
5.1 Perform Shock Water System/Maintenance (Cont.)

5.1.17 PERFORM walk down of exterior of PDU AND LOOK for leaks or abnormalities.

5.1.17.1 IF leaks or abnormalities are observed, NOTIFY FWS.

**Special Instruction**

As the tank fills, the discharge valve from the truck or V-101 should be throttled down to lower flow to help prevent overflowing the TK-101, WATER SUPPLY TANK.

5.1.18 MONITOR the TK-101, WATER SUPPLY TANK water level via the water level gauge inside the PDU located on the PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS (See Figure 1).

NOTE - The following buttons and controls for Steps 5.1.19 and 5.1.20 are located on CP-101, MIXING VALVE 112 CONTROL PANEL SUPPLIES SHOWERS 1 & 2 / SINK 1 and CP-102, MIXING VALVE 113 CONTROL PANEL SUPPLIES SHOWERS 3 & 4 / SINK 2 inside the PDU respectively (See Attachment 1).

5.1.19 PRESS the STOP button on CP-102, MIXING VALVE 113 CONTROL PANEL SUPPLIES SHOWERS 3 & 4 / SINK 2.

5.1.20 PRESS the START button on the CP-102.

5.1.21 SET the water temperature coming out of the mixing valve on CP-101, MIXING VALVE 112 CONTROL PANEL SUPPLIES SHOWERS 1 & 2 / SINK 1 to 90 °F as follows (See Attachment 1):

5.1.21.1 PUSH “Show Temp Setpoint” button.

5.1.21.2 PUSH TEMP ↑ or TEMP ↓ buttons to adjust setpoint to 90 °F.

5.1.22 PRESS the STOP button on CP-101, MIXING VALVE 112 CONTROL PANEL SUPPLIES SHOWERS 1 & 2 / SINK 1.

5.1.23 PRESS the START button on CP-101.
5.1 Perform Shock Water System/Maintenance (Cont.)

5.1.24 SET the water temperature coming out of the mixing valve on CP-102, MIXING VALVE 113 CONTROL PANEL SUPPLIES SHOWERS 3 & 4 / SINK 2, to 90 °F as follows (See Attachment 1):

5.1.24.1 PUSH “Show Temp Setpoint” button.

5.1.24.2 PUSH TEMP ↑ or TEMP ↓ buttons to adjust setpoint to 90 °F.

5.1.25 PERFORM walk down of exterior of PDU AND LOOK for leaks or abnormalities.

5.1.25.1 IF leaks or abnormalities are observed, NOTIFY FWS.

NOTE - Step 5.1.26 and associated sub-steps generate water as the lines are purged. This water may be captured in a bucket or similar container for later disposal after obtaining Environmental approval.

5.1.26 WHEN the TK-101, WATER SUPPLY TANK water level reaches approximately half way, as observed on the water level gauge inside the PDU at the PNL-101 LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS (See Figure 1), PURGE the system of trapped air as follows:

5.1.26.1 OPEN V-114, DRAIN VALVE HOT WATER INLET TO MIXING VALVE AND

OBSERVE water flow from attached hose.

a. WHEN the flow stops sputtering as trapped air is released, CLOSE V-114.

5.1.26.2 OPEN V-115, DRAIN VALVE COLD WATER INLET TO MIXING VALVE AND

OBSERVE water flow from attached hose.

a. WHEN the flow stops sputtering as trapped air is released, CLOSE V-115.
5.1 Perform Shock Water System/Maintenance (Cont.)

5.1.26.3 OPEN V-130, OUTLET ISOLATION VALVE SHOWER 4 AND

OBSERVE water flow from shower head.

a. WHEN the flow stops sputtering, as trapped air is released, CLOSE V-130.

5.1.26.4 OPEN V-126, OUTLET ISOLATION VALVE SHOWER 3 AND

OBSERVE water flow from shower head.

a. WHEN the flow stops sputtering, as trapped air is released, CLOSE V-126.

5.1.26.5 OPEN V-129, OUTLET ISOLATION VALVE SHOWER 2 AND

OBSERVE water flow from shower head.

a. WHEN the flow stops sputtering, as trapped air is released, CLOSE V-129.

5.1.26.6 OPEN V-125, OUTLET ISOLATION VALVE SHOWER 1 AND

OBSERVE water flow from shower head.

a. WHEN the flow stops sputtering, as trapped air is released, CLOSE V-125.

5.1.26.7 OPEN V-123, INLET ISOLATION VALVE SINK 1.

5.1.26.8 OPEN faucet AND

OBSERVE water flow from faucet head.

a. WHEN the flow stops sputtering, as trapped air is released, CLOSE faucet.

5.1.26.9 REMOVE the caps from EW-101, EYEWASH SINK 1.
5.1 Perform Shock Water System/Maintenance (Cont.)

NOTE - Eyewash unit should be rotated very slowly to open position to control water from being splashed all over as trapped air is released.

5.1.26.10 OPEN the eyewash valve by slowly rotating EW-101 EYEWASH SINK 1 eyewash unit to its deployed position AND OBSERVE water flow from the eyewash unit.

a. WHEN the flow stops sputtering as trapped air is released, ROTATE EW-101, EYEWASH SINK 1 eyewash unit back to its stowed position.

5.1.26.11 OPEN V-124, INLET ISOLATION VALVE SINK 2.

5.1.26.12 OPEN faucet AND

OBSERVE water flow from faucet head.

a. WHEN the flow stops sputtering, as trapped air is released, CLOSE faucet.

5.1.26.13 REMOVE the caps from EW-102, EYEWASH SINK 2.

NOTE - Eyewash unit should be rotated very slowly to open position to control water from being splashed all over as trapped air is released.

5.1.26.14 OPEN the eyewash valve by slowly rotating EW-102, EYEWASH SINK 2 eyewash unit to its deployed position AND OBSERVE water flow from the eyewash unit.

a. WHEN the flow stops sputtering, as trapped air is released, ROTATE EW-102, EYEWASH SINK 2 eyewash unit back to its stowed position.

5.1.27 PRESS the STOP button on CP-101, MIXING VALVE 112 CONTROL PANEL SUPPLIES SHOWERS 1 & 2 / SINK 1 (See Attachment 1).

5.1.28 PRESS the STOP button on CP-102, MIXING VALVE 113 CONTROL PANEL SUPPLIES SHOWERS 3 & 4 / SINK 2 (See Attachment 1).
5.1 Perform Shock Water System/Maintenance (Cont.)

NOTE - Excess water will flow to the ground when filling the TK-101, WATER SUPPLY TANK, if filling continues after the Potable Water Fill Indication light (red) next to V-101 stops flashing and remains solidly illuminated.

5.1.29 CONTINUE to fill TK-101, WATER SUPPLY TANK until the Potable Water Fill Indication light (red) next to V-101 stops flashing and remains illuminated.

5.1.30 CLOSE V-101, INLET ISOLATION VALVE SUPPLY TANK AND INSTRUCT water purveyor to stop the truck pump.

5.1.31 CLOSE water truck discharge valve.

5.1.32 DISCONNECT supply hose from inlet water valve.

5.1.33 RECORD water added entry on Decontamination Trailer Water Usage Log (Site Form #A-6003-914).

5.1.34 IF draining shocked water to the ground and it is expected to exceed 60 gallons, OBTAIN Environmental approval.

5.1.35 AFTER 24-hour shock period, DRAIN system per Section 5.6.
5.2 Fill Water Supply System and/or Flush

5.2.1 ESTABLISH electrical lineup per Checklist 3.

**WARNING**
Access under the PDU is considered a confined space and failure to have IH evaluate the confined space per DOE-0360 prior to entry may result in personnel injury or death.

5.2.2 PRIOR to performing Checklist 1 which contains valves located under the PDU, CONFIRM Industrial Hygiene has evaluated the confined space and it is safe for entry.

5.2.3 ESTABLISH valve line-up per Checklist 1.

**NOTE -** The EMO-101, SYSTEM START AND EMERGENCY STOP is located on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS. When the EMO-101 button is pushed in to place in standby/stop mode, an audible chirp will be heard every 120 seconds as long as the system remains in standby/stop.

5.2.4 PUSH IN EMO-101, SYSTEM START AND EMERGENCY STOP button (See Attachment 1).

5.2.5 IF not already available, CONTACT the water purveyor to fill TK-101, WATER SUPPLY TANK with potable water.

5.2.6 CONNECT water supply hose to 1-1/2” POTABLE WATER INPUT located by V-101, INLET ISOLATION VALVE SUPPLY TANK on west side of PDU.
5.2 Fill Water Supply System (Cont.)

5.2.7 CONNECT ¾” water hoses to the following valves located in the equipment room:

Check
Done ✓

- V-114, DRAIN VALVE HOT WATER INLET TO MIXING VALVE
- V-115, DRAIN VALVE COLD WATER INLET TO MIXING VALVE.

5.2.8 OPEN V-101, INLET ISOLATION VALVE SUPPLY TANK.

5.2.9 SETUP the mixing valves as follows:

5.2.9.1 ENSURE the mixing valve LOCAL/REMOTE selector switch on both mixing valve units (located on the right side of the silver knob box) is positioned to LOCAL.

5.2.9.2 CLOSE V-112, MIXING VALVE (TOP) SUPPLIES SHOWERS 1 & 2 / SINK 1 by rotating both silver knobs on top clockwise.

5.2.9.3 CLOSE V-113, MIXING VALVE (TOP) SUPPLIES SHOWERS 3 & 4 / SINK 2 by rotating both silver knobs on top clockwise.

5.2.9.4 OPEN V-112, MIXING VALVE (TOP) SUPPLIES SHOWERS 1 & 2 / SINK 1 by rotating both silver knobs on top counter clockwise approximately 1/16 to 1/8 of a turn.

5.2.9.5 OPEN V-113, MIXING VALVE (TOP) SUPPLIES SHOWERS 3 & 4 / SINK 2 by rotating both silver knobs on top counter clockwise approximately 1/16 to 1/8 of a turn.

5.2.10 INSTRUCT water purveyor to start water truck pump.

5.2.11 SLOWLY OPEN water truck discharge valve.

5.2.12 PERFORM walk down of exterior of PDU AND LOOK for leaks and/or abnormalities.

5.2.12.1 IF leaks or abnormalities are observed, NOTIFY FWS.
5.2 Fill Water Supply System (Cont.)

NOTE - Observing the flow meter or totalizer from the water purveyor truck or the water gauge on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS inside the PDU indicating approximately ½ full can be used to determine the 150 gallons in Step 5.2.13.

5.2.13 AFTER more than approximately 150 gallons of water is in TK-101, WATER SUPPLY TANK 313 GAL,

OR

IF refilling, after TK-101, WATER SUPPLY TANK 313 GAL level gauge reads greater than ½ full, POSITION MS-103, PRIMING PUMP (P-2) START/STOP switch located on West wall of equipment room to ON to start P-102, WATER SUPPLY PRIMING PUMP.

5.2.14 AFTER P-102, WATER SUPPLY PRIMING PUMP shuts off, START P-101, WATER SUPPLY PUMP by placing ST-SP-101, WATER SUPPLY PUMP (P-1) START/STOP button to ON.

5.2.15 OPEN the following valves in the order given:

Check
Done ✓

- V-106, COLD WATER INLET WEST WATER HEATER
- V-109, COLD WATER INLET EAST WATER HEATER.

NOTE - Water can be observed to flow in FG-101, FLOW SIGHT GLASS WATER SUPPLY. Initial flow rate will be turbulent and will gradually smooth out once air has been removed from part of the initial part of the system.

5.2.16 OBSERVE flow in FG-101, ROTARY FLOW GLASS WATER SUPPLY located in Equipment Room.

NOTE - Once the priming pump has been set to ON, the priming pump will re-start automatically and run until pressure is ≥ 40 psi.

5.2.17 IF prime is lost on P-101, WATER SUPPLY PUMP at any time during filling, CHECK P-102, WATER SUPPLY PRIMING PUMP automatically re-starts to pressurize system to ≥ 40 psi.

5.2.17.1 AFTER P-102, WATER SUPPLY PRIMING PUMP shuts off, START P-101, WATER SUPPLY PUMP by placing ST-SP-101, WATER SUPPLY PUMP (P-1) START/STOP button to ON.
5.2 Fill Water Supply System (Cont.)

NOTE - To fill the water heaters, P-101, WATER SUPPLY PUMP must be used.

- During the initial filling, the Potable Water Fill Indication light (red) may alternate between a flashing light to solid light and back to flashing as the supply tank is being filled.

Special Instruction

As the tank fills, the discharge valve from the water purveyor truck or V-101 should be throttled down to lower flow to help prevent overflowing the TK-101, WATER SUPPLY TANK.

5.2.18 WHILE performing Steps 5.2.20 through 5.2.29, CONTINUE to fill TK-101, WATER SUPPLY TANK as follows:

5.2.18.1 OBSERVE the potable water fill indication light (red) on the West side of the PDU next to the fill connection.

NOTE - Excess water will flow to the ground when filling the TK-101, WATER SUPPLY TANK, if filling continues after the Potable Water Fill Indication light (red) next to V-101 stops flashing and remains solidly illuminated.

Special Instruction

As the supply tank nears being full, the discharge valve from the water purveyor truck or V-101 should be throttled down to lower flow to help prevent overflowing the TK-101, WATER SUPPLY TANK.

5.2.18.2 WHEN the Potable Water Fill Indication light (red) turns a solid red, CLOSE the water truck isolation valve.

5.2.18.3 IF the Potable Water Fill Indication light (red) starts to flash, SLOWLY OPEN the water truck isolation valve AND CONTINUE to fill the supply tank.

5.2.18.4 REPEAT Steps 5.2.18.1 through 5.2.18.3 as necessary until the Potable Water Fill Indication light (red) remains a solid red AND CONTINUE with procedure.
5.2 **Fill Water Supply System (Cont.)**

**NOTE** - Once the light remains solid, the supply water level gauge on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS inside the PDU should indicate a full condition.

5.2.18.5 **CHECK** the supply tank water level gauge on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS inside the PDU reads full.

5.2.18.6 **IF** the Potable Water Fill Indication light (red) is solid red, but the alarm and control panel level gauge for the supply tank does not register full, **NOTIFY** the Shift Manager.

5.2.19 **OPEN** the following valves in the order provided:

- V-107, HOT WATER OUTLET WEST WATER HEATER
- V-110, HOT WATER OUTLET EAST WATER HEATER

**Reset the Temperature**

**NOTE** - The following buttons and controls for Steps 5.2.20 and 5.2.21 are located on CP-101, MIXING VALVE 112 CONTROL PANEL SUPPLIES SHOWERS 1 & 2 / SINK 1 and CP-102, MIXING VALVE 113 CONTROL PANEL SUPPLIES SHOWERS 3 & 4 / SINK 2 inside the PDU respectively.

5.2.20 **SET** the water temperature coming out of the mixing valve on CP-101, MIXING VALVE 112 CONTROL PANEL SUPPLIES SHOWERS 1 & 2 / SINK 1 to 90 °F as follows (See Attachment 1):

5.2.20.1 **PUSH** “Show Temp Setpoint” button:

5.2.20.2 **PUSH** TEMP ↑ or TEMP ↓ buttons to adjust setpoint to 90 °F.

5.2.21 **SET** the water temperature coming out of the mixing valve on CP-102, MIXING VALVE 113 CONTROL PANEL SUPPLIES SHOWERS 3 & 4 / SINK 2, to 90 °F as follows (See Attachment 1):

5.2.21.1 **PUSH** “Show Temp Setpoint” button.

5.2.21.2 **PUSH** TEMP ↑ or TEMP ↓ buttons to adjust setpoint to 90 °F.
5.2 Fill Water Supply System (Cont.)

NOTE - The EMO-101 push button is located on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS

5.2.22 PULL OUT EMO-101, SYSTEM START AND EMERGENCY STOP button (See Attachment 1).

5.2.23 START the mixing valves as follows (See Attachment 1):

5.2.23.1 PRESS the STOP button on CP-101, MIXING VALVE 112 CONTROL PANEL SUPPLIES SHOWERS 1 & 2 / SINK 1.

5.2.23.2 PRESS the START button on CP-101.

5.2.23.3 PRESS the STOP button on CP-102, MIXING VALVE 113 CONTROL PANEL SUPPLIES SHOWERS 3 & 4 / SINK 2.

5.2.23.4 PRESS the START button on the CP-102.

5.2.24 PERFORM walk down of exterior of PDU AND LOOK for leaks and/or abnormalities.

5.2.24.1 IF leaks or abnormalities are observed, NOTIFY FWS.

Purge the System

5.2.25 PURGE the system of trapped air as follows:

5.2.25.1 OPEN V-114, DRAIN VALVE HOT WATER INLET TO MIXING VALVE AND

OBSERVE water flow from attached hose.

a. WHEN the flow stops sputtering as trapped air is released, CLOSE V-114.

5.2.25.2 OPEN V-115, DRAIN VALVE COLD WATER INLET TO MIXING VALVE AND

OBSERVE water flow from attached hose.

a. WHEN the flow stops sputtering as trapped air is released, CLOSE V-115.

5.2.25.3 IF filling the system to perform a flush, GOTO Step 5.2.25.6.
5.2 Fill Water Supply System (Cont.)

**WARNING**

Failure to don proper PPE before performing circuit breaker, electrical disconnect, or starter operations, may result in personnel injury or death.

NOTE - As the water heaters warm up and if the sinks and shower valves or mixing valves are closed, the water will expand in the water heaters until the water heater relief valves start to open to relieve the excess pressure. When this happens, potable water will start to weep out of two fittings that are under the PDU on the east side near the supply pump/valve piping. This flow can be as little as drops to a small stream of water.

5.2.25.4 **ENSURE** personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.2.25.5 **CLOSE** both sets of water heater breakers (7B/9A and 8B/10A) located in DP-101, DISTRIBUTION PANEL 200A/240V/1 PHASE.

5.2.25.6 **OPEN** V-130, OUTLET ISOLATION VALVE SHOWER 4 AND

**OBSERVE** water flow from shower head.

a. **WHEN** the flow stops sputtering, as trapped air is released, **CLOSE** V-130.

5.2.25.7 **OPEN** V-126, OUTLET ISOLATION VALVE SHOWER 3 AND

**OBSERVE** water flow from shower head.

a. **WHEN** the flow stops sputtering, as trapped air is released, **CLOSE** V-126.
5.2 Fill Water Supply System (Cont.)

5.2.25.8 OPEN V-129, OUTLET ISOLATION VALVE SHOWER 2 AND

OBSERVE water flow from shower head.

a. WHEN the flow stops sputtering, as trapped air is released, CLOSE V-129.

5.2.25.9 OPEN V-125, OUTLET ISOLATION VALVE SHOWER 1 AND

OBSERVE water flow from shower head.

a. WHEN the flow stops sputtering, as trapped air is released, CLOSE V-125.

5.2.25.10 OPEN V-123, INLET ISOLATION VALVE SINK 1.

5.2.25.11 OPEN faucet AND

OBSERVE water flow from faucet head.

a. WHEN the flow stops sputtering, as trapped air is released, CLOSE faucet.

5.2.25.12 REMOVE the caps from EW-101 EYEWASH SINK 1.

NOTE - Eyewash unit should be rotated very slowly to open position to control water from being splashed all over as trapped air is released.

5.2.25.13 OPEN the eyewash valve by slowly rotating EW-101 EYEWASH SINK 1 eyewash unit to its deployed position AND

OBSERVE water flow from the eyewash unit.

a. WHEN the flow stops sputtering, as trapped air is released, ROTATE EW-101, EYEWASH SINK 1 eyewash unit back to its stowed position.

5.2.25.14 OPEN V-124, INLET ISOLATION VALVE SINK 2.
5.2 Fill Water Supply System (Cont.)

5.2.25.15 OPEN faucet AND

OBSERVE water flow from faucet head.

a. WHEN the flow stops sputtering, as trapped air is released, CLOSE faucet.

5.2.25.16 REMOVE the caps from EW-102, EYEWASH SINK 2.

NOTE - Eyewash unit should be rotated very slowly to open position to control water from being splashed all over as trapped air is released.

5.2.25.17 OPEN the eyewash valve by slowly rotating EW-102, EYEWASH SINK 2 eyewash unit to its deployed position AND

OBSERVE water flow from the eyewash unit.

5.2.25.18 WHEN the flow stops sputtering, as trapped air is released, ROTATE EW-102, EYEWASH SINK 2 eyewash unit back to its stowed position.

5.2.26 SET the water temperature coming out of the mixing valve on CP-101, MIXING VALVE 112 CONTROL PANEL SUPPLIES SHOWERS 1 & 2 / SINK 1 to 90 °F as follows (See Attachment 1):

5.2.26.1 PUSH “Show Temp Setpoint” button.

5.2.26.2 PUSH TEMP ↑ or TEMP ↓ buttons to adjust setpoint to 90 °F.

5.2.27 SET the water temperature coming out of the mixing valve on CP-102, MIXING VALVE 113 CONTROL PANEL SUPPLIES SHOWERS 3 & 4 / SINK 2, to 90 °F as follows (See Attachment 1):

5.2.27.1 PUSH “Show Temp Setpoint” button.

5.2.27.2 PUSH TEMP ↑ or TEMP ↓ buttons to adjust setpoint to 90 °F.
5.2 Fill Water Supply System (Cont.)

NOTE - Pressing the stop button only stops the mixing valves from functioning and stops all flow thru the valves to the sinks and showers. To start the system, from this standby mode the START button may be pressed to energize the mixing valves.

5.2.28 PLACE system in “Standby Mode” as follows:

5.2.28.1 PRESS the STOP button on CP-101, MIXING VALVE 112 CONTROL PANEL SUPPLIES SHOWERS 1 & 2 / SINK 1 (See Attachment 1).

5.2.28.2 PRESS the STOP button on CP-102, MIXING VALVE 113 CONTROL PANEL SUPPLIES SHOWERS 3 & 4 / SINK 2 (See Attachment 1).

5.2.29 FILL TK-101, WATER SUPPLY TANK per Step 5.2.18 until Potable Water Fill Indication light (red) is solid red, and/or supply tank water level gauge on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS indicates full.

5.2.30 IF a system flush is required, REPEAT Steps 5.2.22 to 5.2.29 as needed, allowing water to flow out each valve, shower and eye wash station to adequately flush the system.

5.2.31 CLOSE the water truck isolation valve.

5.2.32 CLOSE V-101, INLET ISOLATION VALVE SUPPLY TANK AND INSTRUCT water purveyor to stop the truck pump.

5.2.33 DISCONNECT supply hose from “POTABLE WATER INPUT” connection next to V-101.
5.2 Fill Water Supply System (Cont.)

5.2.34 DISCONNECT ¾” water hoses from the following valves located in the equipment room:

- V-114, DRAIN VALVE HOT WATER INLET TO MIXING VALVE
- V-115, DRAIN VALVE COLD WATER INLET TO MIXING VALVE.

5.2.35 PERFORM walk down of exterior of PDU AND LOOK for leaks and/or abnormalities.

5.2.36 RECORD water added entry on Decontamination Trailer Water Usage Log (Site Form #A-6003-914).
5.3 Perform Weekly Operability Tests

NOTE Testing of the decontamination system for operability in this Section is used to ensure the decontamination system remains in operational status after staging and setup or after moving the PDU. This Section (or individual steps) will be performed on a weekly basis when the PDU is in operational status or if directed by the shift manager.

- Steps in Section 5.3 may be performed in any logical order.

5.3.1 CHECK power is provided to P-101, WATER SUPPLY PUMP as follows:

5.3.1.1 CHECK breaker 6B is in ON position.

5.3.1.2 CHECK green light above ST-SP-101, WATER SUPPLY PUMP (P-1) START/STOP on P-101 control panel ON/OFF button is lit.

5.3.2 PLACE PDU into Operational Mode as follows:

NOTE - The EMO-101, SYSTEM START AND EMERGENCY STOP is located on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS.

5.3.2.1 PULL OUT EMO-101, SYSTEM START AND EMERGENCY STOP button (See Attachment 1).

5.3.2.2 PRESS the START button on CP-101, MIXING VALVE 112 CONTROL PANEL SUPPLIES SHOWERS 1 & 2 / SINK 1 (See Attachment 1).

5.3.2.3 PRESS the START button on CP-102, MIXING VALVE 113 CONTROL PANEL SUPPLIES SHOWERS 3 & 4 / SINK 2 (See Attachment 1).

NOTE - The test water may be diverted or captured prior to entering drain system for the following testing, and disposed of to the ground in the pre-approved discharge area.

5.3.3 IF possible, STAGE a bucket/capture container under each sink nozzle, eye wash station, and shower head as it is tested, to capture as much water as possible during testing, reducing/eliminating water flow to the grey water tanks.
5.3 Perform Weekly Operability Tests (Cont.)

5.3.4 **ROTATE** the following eyewash units into operating position to ensure water is available to eyewash station.
- EW-101, EYEWASH SINK 1 eyewash unit
- EW-102, EYEWASH SINK 2 eyewash unit

5.3.4.1 **RUN** water until the following criteria are met:
- minimum of 20 seconds has elapsed
- water runs clear.

5.3.5 **IF** any of the following observation are not as indicated, **NOTIFY** FWS and/or Shift Manager.

5.3.5.1 **OBSERVE** the following:
- Plastic caps blow off eyewash nozzles with water pressure
- Full stream of water immediately flows from both eyewash outlets.

5.3.5.2 **ROTATE** eyewash unit back to its stowed/off position to shut off water flow.

5.3.5.3 **OBSERVE** that water stops flowing.

5.3.5.4 **PLACE** plastic caps back on eyewash nozzles.

5.3.6 **PERFORM** the following at SINK 1 and SINK 2:

5.3.6.1 **TURN ON** faucet.

5.3.6.2 **RUN** water until the following criteria are met:
- minimum of 20 seconds has elapsed
- water runs clear.

5.3.6.3 **OBSERVE** a full stream is flowing from faucet.

5.3.6.4 **WHEN** test is complete, **TURN OFF** faucet.

5.3.6.5 **REPEAT** Step 5.3.6 and substeps until SINK 1 and SINK 2 have been tested.
5.3 Perform Weekly Operability Tests (Cont.)

5.3.7 PERFORM the following at each shower:

5.3.7.1 OPEN shower isolation valve.

5.3.7.2 RUN water until the following criteria are met:
- minimum of 20 seconds has elapsed
- water runs clear.

5.3.7.3 OBSERVE a full stream is flowing from shower head.

5.3.7.4 WHEN test is complete, CLOSE isolation valve.

5.3.8 IF any of the test conditions are not observed as instructed or equipment does not operate properly, NOTIFY the Shift Manager.

NOTE Testing may have to be performed again as necessary.

5.3.8.1 IF directed by the Shift Manager, REPEAT Steps 5.3.1 through 5.3.8 as craft personnel deem necessary.

5.3.9 CHECK the supply and grey water tank level gauges as follows:

NOTE - Pressing the test button will automatically close the mixing valves V-112 and V-113.

5.3.9.1 PRESS the test button on the supply water tank level gauge display panel AND

OBSERVE the needle swing left for the supply water tank level gauge and right for the grey water tank level gauge.

5.3.9.2 PRESS the START button on the V-112 mixing valve control panel (upper).

5.3.9.3 PRESS the START button on the V-113 mixing valve control panel (lower).

5.3.9.4 IF potable water tank level is not full based on visual verification of tank level on the PNL-101, Level Indication and Alarm Panel Supply and Grey Water Tanks, NOTIFY Shift Manager to immediately contact the water purveyor to refill the water tank per Section 5.2.
5.3 Perform Weekly Operability Tests (Cont.)

5.3.10 IF placing system in Standby Mode, GO TO Section 5.5.

5.3.11 IF leaving system in Operational Mode, GO TO Section 5.4.
OPERATE PERSONNEL DECONTAMINATION UNIT

5.4 PLACE PDU IN OPERATIONAL MODE

NOTE - The EMO-101, SYSTEM START AND EMERGENCY STOP is located on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS.

5.4.1 PULL OUT EMO-101, SYSTEM START AND EMERGENCY STOP button (See Attachment 1).

5.4.2 PRESS the START button on CP-101, MIXING VALVE 112 CONTROL PANEL SUPPLIES SHOWERS 1 & 2 / SINK 1 (See Attachment 1).

5.4.3 PRESS the START button on CP-102, MIXING VALVE 113 CONTROL PANEL SUPPLIES SHOWERS 3 & 4 / SINK 2 (See Attachment 1).

5.4.4 OPEN roof ventilation port located at front ceiling of the PDU as follows:

5.4.4.1 UNLOCK vent by turning locking mechanism to unlock position.

NOTE - How far to open the vent in Step 5.4.4.2 should be established based upon how difficult it is to open the PDU doors once the Negative Air Fan is running.

5.4.4.2 TURN the open knob clockwise until vent is partially open.

5.4.5 IF NEGATIVE AIR EXHAUST FAN is not running, TURN ON the Negair system using either one of the following 3-way switches:

- MS-110, NEGATIVE AIR EXHAUST FAN SWITCH located in the CLEAN ROOM
- MS-111, NEGATIVE AIR EXHAUST FAN SWITCH located in the DIRTY ROOM.
5.5 Place PDU In Standby Mode

5.5.1 PRESS the STOP button on CP-101, MIXING VALVE 112 CONTROL PANEL SUPPLIES SHOWERS 1 & 2 / SINK 1 (See Attachment 1).

5.5.2 PRESS the STOP button on CP-102, MIXING VALVE 113 CONTROL PANEL SUPPLIES SHOWERS 3 & 4 / SINK 2 (See Attachment 1).

NOTE - The EMO-101, SYSTEM START AND EMERGENCY STOP is located on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS. When the EMO-101 button is pushed in to place in standby/stop mode, an audible chirp will be heard every 120 seconds as long as the system remains in standby/stop.

5.5.3 PUSH IN EMO-101, SYSTEM START AND EMERGENCY STOP button (See Attachment 1).

5.5.4 IF NEGATIVE AIR EXHAUST FAN is running, SECURE fan as follows:

5.5.4.1 TURN OFF Negair from MS-110, NEGATIVE AIR EXHAUST FAN CLEAN ROOM or MS-111, NEGATIVE AIR EXHAUST FAN DIRTY ROOM:

5.5.4.2 CLOSE roof ventilation port located in the Clean Room at front (north) ceiling of the PDU by performing the following in the order given:

a. TURN the open knob counter clockwise until vent is fully closed.

b. LOCK vent by turning locking mechanism to the lock position.
5.6 Drain Water Supply System/Tank

CAUTION

Failure to ensure all water in the PDU supply and Grey water tanks are removed prior to moving to a new work location and/or while the system is being staged at a work location could result in damage to the units frame.

5.6.1 **OBTAIN** direction from Environmental on where to dump water from TK-101, WATER SUPPLY TANK 313 GAL potable water to the ground.

<table>
<thead>
<tr>
<th>Signature</th>
<th>Print (first &amp; last)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental</td>
<td></td>
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</tbody>
</table>

NOTE - The EMO-101, SYSTEM START AND EMERGENCY STOP is located on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS. When the EMO-101 button is pushed in to place in standby/stop mode, an audible chirp will be heard every 120 seconds as long as the system remains in standby/stop.

5.6.2 **IF** system is not in standby mode, **PUSH IN** EMO-101, SYSTEM START AND EMERGENCY STOP button (See Attachment 1)

5.6.3 **PUSH** ST-SP-101, WATER SUPPLY PUMP (P-1) START/STOP button to OFF.

5.6.3.1 **CHECK** red indicator light below ON/OFF button is lit.
5.6 Drain Water Supply System/Tank (Cont.)

**WARNING**
Failure to don proper PPE before performing circuit breaker, electrical disconnect, or starter operations, may result in personnel injury or death.

5.6.4 **ENSURE** personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.6.5 **POSITION** the following breakers in DP-101, Distribution Panel to OPEN/OFF:

Check
Done ✓

- Breaker 6A (12V Converters)
- Breaker 6B (Water Supply Pump)
- Breaker 7B/9A (West Water Heater HTR-101)
- Breaker 8B/10A (East Water Heater HTR-102).

**WARNING**
Access under the PDU is considered a confined space and failure to have IH evaluate the confined space per DOE-0360 prior to entry may result in personnel injury or death.

5.6.6 **BEFORE** connecting hose to drain valves, **WAIT** a minimum of 24 hrs to allow water heaters to cool.

5.6.7 **PRIOR** to performing Step 5.6.8 which contains valves located under the PDU, **CONFIRM** Industrial Hygiene has evaluated the confined space and it is safe for entry.
5.6 Drain Water Supply System/Tank (Cont.)

5.6.8 IF attachment of a hose is required to reach drainage area, CONNECT hose to the applicable following valves AND ROUTE hose to drainage area.

Check
Done ✓ or N/A

- V-108, DRAIN VALVE WEST WATER HEATER
- V-111, DRAIN VALVE EAST WATER HEATER
- V-104, MANUAL DRAIN SUPPLY TANK
- V-104A, MANUAL DRAIN SUPPLY PUMP
- V-117, DRAIN VALVE UVS CANISTER
- V-118, DRAIN VALVE FILTER HOUSING
- V-114, DRAIN VALVE HOT WATER INLET TO MIXING VALVE
- V-115, DRAIN VALVE COLD WATER INLET TO MIXING VALVE.

5.6.9 POSITION the following valves to OPEN to commence draining Water Supply Tank:

Check
Done ✓

- V-103, OUTLET ISOLATION VALVE SUPPLY TANK
- V-104, MANUAL DRAIN SUPPLY TANK.

5.6.10 POSITION the following valves to OPEN to commence draining UVS-101, FLT-101, HTR-101, and HTR-102

Check
Done ✓

- V-104A, MANUAL DRAIN SUPPLY PUMP
- V-117, DRAIN VALVE UVS CANISTER
- V-118, DRAIN VALVE FILTER HOUSING
- V-108, DRAIN VALVE WEST WATER HEATER
- V-111, DRAIN VALVE EAST WATER HEATER.
5.6 Drain Water Supply System/Tank (Cont.)

5.6.11 LIFT the lever on the following water heater pressure relief valves

Check Done ✓

- PSV-101, SAFETY RELIEF VALVE WEST WATER HEATER
- PSV-102, SAFETY RELIEF VALVE EAST WATER HEATER.

5.6.12 AFTER HTR-101 and HTR-102 have drained, OPEN the following valves to begin draining the cold and hot supply side of mixing valve manifolds:

Check Done ✓

- V-114, DRAIN VALVE HOT WATER INLET TO MIXING VALVE
- V-115, DRAIN VALVE COLD WATER INLET TO MIXING VALVE.

5.6.13 CLOSE the following valves to isolate heaters from rest of system:

Check Done ✓

- V-108, DRAIN VALVE WEST WATER HEATER
- V-111, DRAIN VALVE EAST WATER HEATER
- V-106, COLD WATER INLET WEST WATER HEATER
- V-109, COLD WATER INLET EAST WATER HEATER
- V-107, HOT WATER OUTLET WEST WATER HEATER
- V-110, HOT WATER OUTLET EAST WATER HEATER.

5.6.14 MANUALLY OPEN the two silver knobs on top of the following mixing valve manifolds by rotating both counter clockwise two full turns.

Check Done ✓

- V-112, MIXING VALVE (TOP) SUPPLIES SHOWERS 1 & 2 / SINK 1
- V-113, MIXING VALVE (BOTTOM) SUPPLIES SHOWERS 3 & 4 / SINK 2.
5.6  Drain Water Supply System/Tank (Cont.)

5.6.15  **POSITION** the following valves to OPEN to commence draining main supply lines:

*Check Done ✓*

- V-119, SHOWER AND SINK DRAIN VALVE SHWR 3&4 / SINK 2 (EAST OUTSIDE)
- V-120, SHOWER AND SINK DRAIN VALVE SHWR 1&2 / SINK 1 (WEST OUTSIDE).

5.6.16  **ROTATE** both eyewash stations to the OPEN position.

5.6.17  **OPEN** both sink faucets to full open.

5.6.18  **POSITION** the following shower valves to OPEN:

*Check Done ✓*

- V-125, OUTLET ISOLATION VALVE SHOWER 1
- V-129, OUTLET ISOLATION VALVE SHOWER 2
- V-126, OUTLET ISOLATION VALVE SHOWER 3
- V-130, OUTLET ISOLATION VALVE SHOWER 4.
5.6 Drain Water Supply System/Tank (Cont.)

5.6.19 WHEN water ceases to flow out, CLOSE the following valves:

Check Done ✓

- V-125, OUTLET ISOLATION VALVE SHOWER 1
- V-129, OUTLET ISOLATION VALVE SHOWER 2
- V-126, OUTLET ISOLATION VALVE SHOWER 3
- V-130, OUTLET ISOLATION VALVE SHOWER 4
- V-119, SHOWER AND SINK DRAIN VALVE SHWR 3&4 / SINK 2 (EAST OUTSIDE)
- V-120, SHOWER AND SINK DRAIN VALVE SHWR 1&2 / SINK 1 (WEST OUTSIDE)
- V-114, DRAIN VALVE HOT WATER INLET TO MIXING VALVE
- V-115, DRAIN VALVE COLD WATER INLET TO MIXING VALVE
- V-117, DRAIN VALVE UVS CANISTER
- V-118, DRAIN VALVE FILTER HOUSING
- V-103, OUTLET ISOLATION VALVE SUPPLY TANK
- V-104A, MANUAL DRAIN SUPPLY PUMP
- V-104, MANUAL DRAIN SUPPLY TANK.

5.6.20 ROTATE both eyewash stations to the CLOSED position.

5.6.21 CLOSE both sink faucets.

NOTE - A full water supply tank holds 313 gallons and each water heater holds 65 gallons of water.

5.6.22 RECORD water drained entry on Decontamination Trailer Water Usage Log (Site Form #A-6003-914).
5.7 Connect Water Buffalo to Decontamination Unit

**WARNING**
Grey water tank and/or water buffalo may contain potentially radioactively contaminated water. Failure to contact HPT and don proper PPE when pumping water could result in possible radiological contamination to personnel.

5.7.1 PRIOR to connecting hoses, REQUEST radiological/contamination survey of TK-102 GREY WATER TANK 201 GAL and TK-103, GREY WATER TANK 201 GAL, associated piping, and hoses.

5.7.2 DON proper PPE.

NOTE - See Figure 1 for location of Grey Water Pump Switches and valves in Storage Area between the two showers.

5.7.3 CHECK ST-SP-103, GREY WATER PUMP (P-3) START/STOP switch is in the OFF position.

5.7.4 CHECK Water Buffalo is less than ½ full.

5.7.5 INSTALL plastic sleeving on flexible hose that will go from V-122, DRAIN VALVE GREY WATER TANK PUMP OUTLET to Water Buffalo.

5.7.6 PLACE ground cover and catch container (minimum capacity of 5 gallons) under flexible hose connections.

**WARNING**
Access under the PDU is considered a confined space and failure to have IH evaluate the confined space per DOE-0360 prior to entry may result in personnel injury or death.

5.7.7 PRIOR to performing Step 5.7.8 which operates a valve located under the PDU, CONFIRM Industrial Hygiene has evaluated the confined space and it is safe for entry.
5.7 Connect Water Buffalo to Decontamination Unit (Cont.)

5.7.8 CONNECT flexible hose between “WASTE WATER DISCHARGE” connection at V-122, DRAIN VALVE GREY WATER TANK PUMP OUTLET and Water Buffalo fill connection.

5.7.9 DRAW plastic sleeving over Camlock connections at both ends of flexible hose AND

SEAL plastic sleeving ends using tape.

5.7.10 ESTABLISH Contamination Area (CA) around hose connection.
5.8 Pump Grey Water Tank to Water Buffalo

5.8.1 CONFIRM Water Buffalo has been connected per Section 5.7.

5.8.2 OBTAIN permission from Shift Manager to pump Grey Water Tank.

**WARNING**

Grey water tank and/or water buffalo may contain potentially radioactively contaminated water. Failure to contact HPT and don proper PPE when pumping water could result in possible radiological contamination to personnel.

5.8.3 REQUEST radiological/contamination survey of TK-102, GREY WATER TANK 201 GAL, TK-103 GREY WATER TANK 201 GAL, associated piping, and hoses prior to pumping.

5.8.4 DON proper PPE.

**WARNING**

Access under the PDU is considered a confined space and failure to have IH evaluate the confined space per DOE-0360 prior to entry may result in personnel injury or death.

5.8.5 PRIOR to performing Step 5.8.6 which operates a valve located under the PDU, CONFIRM Industrial Hygiene has evaluated the confined space and it is safe for entry.

5.8.6 OPEN V-122, DRAIN VALVE GREY WATER TANK PUMP OUTLET (See Figure 3).
5.8 Pump Grey Water Tank to Water Buffalo (Cont.)

5.8.7 PRIME P-103, GREY WATER PUMP as follows:

5.8.7.1 POSITION V-127, PRIMING FUNNEL ISOLATION VALVE P-3 to the OPEN/ON position.

5.8.7.2 POUR approximately two quarts of water down the Grey Water Pump priming port until a water level is visible in FG-102, ROTARY FLOW GLASS GREY WATER PUMP DISCHARGE.

5.8.7.3 POSITION V-127 to the CLOSED/OFF position.

5.8.8 CHECK Water Buffalo is vented.

5.8.9 CHECK V-122, DRAIN VALVE GREY WATER TANK PUMP OUTLET is positioned to OPEN/ON. (See Figure 3)

**WARNING**

Failure to don proper PPE before performing circuit breaker, electrical disconnect, or starter operations, may result in personnel injury or death.

5.8.10 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.8.11 CLOSE circuit breaker 4, Grey Water Pump.

5.8.12 POSITION ST-SP-103, GREY WATER PUMP (P-3) START/STOP switch to ON.
5.8 Pump Grey Water Tank to Water Buffalo (Cont.)

5.8.13 **MONITOR** FG-102, ROTARY FLOW GLASS GREY WATER PUMP DISCHARGE for water flow.

5.8.13.1 **IF** flow does not start, **POSITION** ST-SP-103, GREY WATER PUMP (P-3) START/STOP switch to OFF.

5.8.13.2 **POSITION** V-127, PRIMING FUNNEL ISOLATION VALVE P-3 to the OPEN/ON position.

5.8.13.3 **POUR** approximately two quarts of water down the Grey Water Pump priming port until a water level is visible in FG-102, ROTARY FLOW GLASS GREY WATER PUMP DISCHARGE.

5.8.13.4 **POSITION** V-127 to the CLOSED/OFF position.

5.8.13.5 **GOTO** Step 5.8.12.

5.8.13.6 **IF** after three attempts the flow does not start, **CONTACT** FWS for further instructions.

5.8.14 **IF** any of the following conditions occur, **STOP** pumping operation per Steps 5.8.16 through 5.8.16.5:

- Grey Water tanks become empty
- Water Buffalo becomes full
- Directed by Shift Manager/OE/FWS.

**NOTE** - When pumping the Waste Water Drain Indication Light (red LED) located next to ST-SP-103 will begin to flash. Slow flash (every 2 seconds) indicates less than 89 gallons remaining, rapid flash (every half second) indicates less than 57 gallons remaining, and solid (ON) indicates less than 37 gallons remaining.

5.8.15 **MONITOR** Waste Water Drain Indication Light (red LED) located next to ST-SP-103,

**OR**

**MONITOR** Grey Water Tank level gauge located on PNL-101 LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS inside the PDU.
Operate Personnel Decontamination Unit

5.8 Pump Grey Water Tank to Water Buffalo (Cont.)

5.8.16 WHEN the Waste Water Drain Indication Light (red LED) comes on solid, OR

WHEN Grey Water Tank level gauge located on PNL-101 LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS indicates empty, PERFORM the following:

5.8.16.1 MONITOR FG-102, ROTARY FLOW GLASS GREY WATER PUMP DISCHARGE AND

WHEN flow ceases, STOP pumping per Steps 5.8.16 through 5.8.16.5.

5.8.16.2 POSITION ST-SP-103, GREY WATER PUMP (P-3)
START/STOP switch to OFF.

5.8.16.3 CLOSE V-122, DRAIN VALVE GREY WATER TANK PUMP OUTLET.

WARNING

Failure to don proper PPE before performing circuit breaker, electrical disconnect, or starter operations, may result in personnel injury or death.

5.8.16.4 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.8.16.5 OPEN circuit breaker 4, Grey Water Pump.

5.8.17 OBSERVE the Grey Water Tank level gauge located on PNL-101, LEVEL INDICATION AND ALARM PANEL SUPPLY AND GREY WATER TANKS inside the PDU.

5.8.17.1 IF the Waste Water Drain Indication Light (red LED) comes on solid red but the Grey Water Tank level gauge located on the alarm and control panel does not indicate empty, NOTIFY Shift Manager.
5.8 Pump Grey Water Tank to Water Buffalo (Cont.)

5.8.18 IF Water Buffalo meets any one or more of the following criteria

- Greater than \( \frac{1}{2} \) full,
- Contains mixed waste and is within 10 days of its RCRA 90 day mandatory emptying limit,
- Shift Manager/OE/FWS directs the Water Buffalo be prepared for emptying.

PERFORM the following:

5.8.18.1 CONTROL disconnect as a Contamination Area (CA).

5.8.18.2 UNSEAL plastic sleeving AND

PERFORM contamination survey of disconnection location.

5.8.18.3 NOTIFY Shift Manager/OE/FWS AND

WHEN directed, DISCONNECT at the Water Buffalo the hose going from “WASTE WATER DISCHARGE” connection at V-122, DRAIN VALVE GREY WATER TANK PUMP OUTLET to Water Buffalo.

5.8.18.4 SEAL end of drain hose in plastic sleeving with absorbent.

5.8.18.5 SURVEY disconnect and down post Contamination Area (CA) as radiological conditions permit.

5.8.18.6 COIL AND STORE hose in dog house AND

CONTROL as radioactive material.

5.8.18.7 CONTROL Water Buffalo as radioactive material.

5.8.18.8 NOTIFY Waste Services water buffalo is to be moved to a double shell tank for offloading AND

DETERMINE transportation labeling requirements.

5.8.18.9 CONFIRM all necessary hazardous waste labels have been installed.

5.8.19 RECORD water pumped entry on Decontamination Trailer Water Usage Log (Site Form #A-6003-914).
5.9 Stage and Set-Up Water Buffalo at 241-AY Farm Location

NOTE - This section may be copied and re-performed as necessary for additional water additions.

- Water buffalo will be located outside the 20’ exclusion zone, therefore no dome loading controls are needed.

5.9.1 REQUEST a sample for the pH of the liquid in the water buffalo.

5.9.1.1 IF the pH is between 7.0 and 12.5, PROCEED to Step 5.9.2.

5.9.1.2 IF the pH is not between 7.0 and 12.5, NOTIFY the Shift Manager/OE for resolution.

5.9.2 CONDUCT contamination and dose-rate survey of Water Buffalo.

5.9.2.1 NOTIFY Shift manager/OE/FWS of results.

NOTE - Step 5.9.3 is normally performed by Shift Manager/OE/FWS.

5.9.3 CONTACT Tank Farms Shipping and Packaging organization with results of Step 5.9.2 survey.

5.9.3.1 PROVIDE/OBTAIN appropriate paperwork (based upon survey results) required to transport Water Buffalo to vicinity of 241-AY Farm.

5.9.4 IF documentation indicates DOT placards are required, CHECK Water Buffalo has appropriate Department of Transportation placards affixed.

5.9.5 INSPECT drain hose to check that it is in good condition with no leaks or cracks.

5.9.6 CONFIRM AZ-702 primary exhauster system is operating prior to draining Water Buffalo.

5.9.7 RECORD amount of water to be added on Data Sheet 1.

5.9.8 PLACE ground cover on ground in area where Water Buffalo is to be located.
5.9 Stage and Set-Up Water Buffalo at 241-AY Farm Location (Cont.)

5.9.9 CONTACT Shift Manager/OE/FWS for direction on where to locate Water Buffalo (either inside or outside of 241-AY Tank Farm).

5.9.9.1 IF locating Water Buffalo inside the tank farm CONFIRM Shift Manager/OE/FWS has reviewed all applicable dome loading requirements per TFC-OPS-OPER-C-10.

5.9.10 CHOCK Water Buffalo to prevent inadvertent movement during water addition.

5.9.11 MONITOR connections and hoses throughout hookup, transfer and disconnect evolutions.

5.9.12 IF leakage is observed, SECURE transfer AND PERFORM the following.

5.9.12.1 NOTIFY Shift Manager.

5.9.12.2 RECORD water drained entry on Decontamination Trailer Water Usage Log (Site Form #A-6003-914).

5.9.13 PLACE ground cover and catch container (minimum capacity of 5 gallons) under Camlock connection at Water Buffalo Drain Valve.

5.9.14 CHECK Water Buffalo pump engine for the following:

- Gas tank is full
- Oil level is full.

5.9.15 CONFIRM the following hose fittings are compatible:

- Fittings on hose
- Hose fittings on Water Buffalo
- 2” CamLock fitting on riser AY101-WST-RISER-066.

NOTE - It is not necessary to sleeve the entire hose but each connection point does need to be sleeved and the entire hose may be sleeved if desired.

5.9.16 IF directed by Shift Manager/OE/FWS INSTALL plastic sleeving on all Water Buffalo drain hose connection points or entire hose.

5.9.17 ESTABLISH Contamination Area (CA) around Water Buffalo Camlock connection.
5.9 Stage and Set-Up Water Buffalo at 241-AY Farm Location (Cont.)

5.9.18 POSITION Water Buffalo Tank Isolation Valve (See Figure 5) to the CLOSED position.

5.9.19 REQUEST HPT perform radiological/contamination survey.

5.9.20 ESTABLISH Contamination Area (CA) around Water Buffalo Camlock connection.

5.9.21 ENSURE hose is connected to Water Buffalo Camlock connection.

5.9.22 DRAW plastic sleeving over Camlock connection of flexible hose.

5.9.23 SEAL plastic sleeving using tape or any other method identified by FWS.

5.9.24 ENSURE ground cover and catch container (minimum capacity of 5 gallons) are placed under Camlock cap from riser AY101-WST-RISER-066.

5.9.25 IF directed by Shift Manager/OE/FWS, INSTALL a portable water meter with totalizer.

NOTE - Valve AY101-WST-V-114 is located on riser AY101-WST-RISER-066.

5.9.26 CHECK valve AY101-WST-V-114 is closed.

5.9.27 REQUEST HPT perform contamination survey of Camlock cap AND REMOVE Camlock cap from riser AY101-WST-RISER-066.

5.9.28 CONNECT hose to Camlock connector on riser AY101-WST-RISER-066.

5.9.29 DRAW plastic sleeving over Camlock connection of flexible hose.

5.9.30 SEAL plastic sleeving using tape or any other method identified by FWS.

5.9.31 PERFORM contamination surveys of work area to verify radiological controls.

5.9.32 IF 702-AZ primary exhaust system shuts down, PERFORM the following.

5.9.32.1 STOP pumping.

5.9.32.2 ENSURE Water Buffalo Tank Isolation Valve is CLOSED.

5.9.32.3 NOTIFY Shift Manager of ventilation shutdown.
5.10 Pump Water Buffalo to 241-AY-101

5.10.1 RECORD starting data on Data Sheet 1.

5.10.2 IF loose or leaking, TIGHTEN hose and fittings.

5.10.3 MONITOR connections and hoses throughout hookup, transfer and disconnect evolutions.

5.10.3.1 IF leakage is observed, SECURE transfer AND NOTIFY Shift Manager.

5.10.4 OPEN Water Buffalo Tank Isolation Valve.

5.10.5 OPEN valve AY101-WST-V-114.

**CAUTION**

Exceeding maximum tank liquid level of 370" or maximum fill volume specified on Data Sheet 1 may cause structural damage to the 241-AY-101 tank (OSD-T-151-00007)

5.10.6 CONFIRM the finishing level of Tank 241-AY-101 will not exceed the maximum fill volume specified in Data Sheet 1.

5.10.7 START Water Buffalo pump engine.

5.10.8 IF installed, PERFORM functional test of water meter per Data Sheet 1.

5.10.9 PERFORM periodic contamination and dose-rate survey of hose route and connections for leaks.

5.10.9.1 IF leaks are indicated TAKE appropriate actions per TF-AOP-011.

5.10.10 SURVEY drain system AND DOCUMENT results.

5.10.11 WHEN Water Buffalo is empty PERFORM the following:

5.10.11.1 STOP pump engine.

5.10.11.2 CLOSE Water Buffalo Tank Isolation Valve.
5.10  Pump Water Buffalo to 241-AY-101 (Cont.)

5.10.12  IF directed by Shift Manager/OE/FWS, FLUSH Water Buffalo from water truck per Steps 5.10.12.1 to 5.10.12.5.

5.10.12.1  IF performing flush of Water Buffalo, ADD water to the Water Buffalo through tank vent AND RECORD amount of flush water added on Data Sheet 1.

5.10.12.2  OPEN Water Buffalo Tank Isolation Valve AND RESTART pump engine.

5.10.12.3  WHEN Water Buffalo is empty of flushing water and flushing is complete, STOP pump engine.

5.10.12.4  CLOSE Water Buffalo Tank Isolation Valve.

5.10.12.5  IF directed by Shift Manager/OE/FWS REPEAT Steps 5.10.12.1 through 5.10.12.4 as often as desired to accomplish sufficient flush.

5.10.13  OPEN Water Buffalo Tank Isolation Valve to vent hose.

5.10.14  DRAIN hoses.

5.10.15  CLOSE valve AY101-WST-V-114.

5.10.16  CLOSE Water Buffalo Tank Isolation Valve to vent hose.

5.10.17  COMPLETE Data Sheet 1.

5.10.18  NOTIFY Health Physics organization of completion of transfer AND CONFIRM a final survey of transfer system is performed.
5.11 Restore Water Buffalo and 241-AY-101

5.11.1 POST disconnect location as a Contamination Area (CA).

5.11.2 INSTALL ground cover and catch container (minimum capacity of 5 gallons) under Camlock connector.

5.11.3 POSITION AY101-WST-V-114 to CLOSED.

5.11.4 UNSEAL plastic sleeving at AY101-WST-RISER-066 AND PERFORM contamination survey of disconnect location.

5.11.5 DISCONNECT hose from Camlock connector on valve AY101-WST-V-114.

5.11.6 PLACE end cap on riser AY101-WST-RISER-066 Camlock connector.

5.11.7 PERFORM contamination survey of work area and down post as conditions permit.

5.11.8 POST disconnect location for flex hose Camlock at drain valve on Water Buffalo as a Contamination Area (CA).

5.11.9 IF Water Buffalo Tank Isolation Valve is open, POSITION Water Buffalo Tank Isolation Valve to CLOSED.

5.11.10 INSTALL ground cover and catch container (minimum capacity of 5 gallons) under Camlock connector for flex hose at drain valve on Water Buffalo.

5.11.11 UNSEAL plastic sleeving at Camlock connector for flex hose at drain valve on Water Buffalo AND PERFORM contamination survey of disconnect location.

5.11.12 DISCONNECT flex hose from Camlock connector on drain valve on Water Buffalo.

5.11.13 PLACE end cap on drain valve Camlock connector.

5.11.14 PERFORM contamination survey of work area AND DOWN POST as conditions permit.
5.11 Restore Water Buffalo and 241-AY-101 (Cont.)

5.11.15 COIL AND RETURN hose to storage.

5.11.15.1 CONTROL as radioactive material,

OR

DISPOSE of as solid waste per TO-100-052.
5.12 Stage and Set-Up Water Buffalo at 241-SY Farm Location

NOTE - This section may be copied and re-performed as needed for additional water additions.
- Water buffalo will be located outside the 20’ exclusion zone; therefore no dome loading controls are needed.

5.12.1 REQUEST a sample for the pH of the liquid in the water buffalo.

5.12.1.1 IF the pH is between 7.0 and 12.5, PROCEED to Step 5.12.2.

5.12.1.2 IF the pH is not between 7.0 and 12.5, NOTIFY the Shift Manager/OE for resolution.

5.12.2 CONDUCT contamination and dose-rate survey of Water Buffalo AND NOTIFY Shift manager/OE/FWS of results.

NOTE - Step 5.12.3 is normally performed by Shift Manager/OE/FWS.

5.12.3 CONTACT Tank Farms Shipping and Packaging organization with results of Step 5.12.2 survey AND PROVIDE/OBTAIN appropriate paperwork (based upon survey results) required to transport Water Buffalo to vicinity of 241-SY Farm.

5.12.4 IF documentation indicates DOT placards are required, CHECK Water Buffalo has appropriate Department of Transportation placards affixed.

5.12.5 CHECK drain hose are in good condition with no leaks or cracks.

5.12.6 CHECK SY Farm exhauster system is operating prior to draining Water Buffalo.

5.12.7 ENTER amount of water to be added on Data Sheet 1.
5.12 Stage and Set-Up Water Buffalo at 241-SY Farm Location (Cont.)

5.12.8 **PLACE** ground cover on ground in area where Water Buffalo is to be located.

5.12.9 **CONTACT** Shift Manager/OE/FWS for direction on where to locate Water Buffalo (either inside or outside of 241-SY Tank Farm).

5.12.9.1 **IF** locating Water Buffalo inside the tank farm **CONFIRM** Shift Manager/OE/FWS has reviewed all applicable dome loading requirements per TFC-OPS-OPER-C-10.

5.12.10 **CHOCK** Water Buffalo to prevent inadvertent movement during water addition.

5.12.11 **PLACE** ground cover and catch container (minimum capacity of 5 gallons) under Camlock connection at Water Buffalo Drain Valve.

5.12.12 **MONITOR** connections and hoses throughout hookup, transfer and disconnect evolutions.

5.12.12.1 **IF** leakage is observed, **SECURE** transfer **AND** **NOTIFY** Shift Manager.

5.12.13 **CHECK** Water Buffalo pump engine for the following:
- Gas tank is full
- Oil level is full.

5.12.14 **CONFIRM** the following hose fittings are compatible:
- Fittings on hose
- Hose fittings on Water Buffalo
- 2” CamLock fitting on riser SY102-WST-RISER-022.

**NOTE** - It is not necessary to sleeve the entire hose but each connection point does need to be sleeved and the entire hose may be sleeved if desired.

5.12.15 **IF** directed by Shift Manager/OE/FWS **INSTALL** plastic sleeving on all Water Buffalo drain hose connection points or entire hose.

5.12.16 **IF** directed by Shift Manager/OE/FWS **INSTALL** a portable water meter with totalizer.

5.12.17 **IF** Water Buffalo Tank Isolation Valve is open, **POSITION** Water Buffalo Tank Isolation Valve to CLOSED (See Figure 6).
5.12 Stage and Set-Up Water Buffalo at 241-SY Farm Location (Cont.)

5.12.18 REQUEST HPT perform contamination survey.

5.12.19 ESTABLISH Contamination Area (CA) around Water Buffalo Camlock connection.

5.12.20 ENSURE hose is connected to Water Buffalo Camlock connection.

5.12.21 DRAW plastic sleeving over Camlock connection of flexible hose AND SEAL plastic sleeving using tape.

5.12.22 ENSURE ground cover and catch container (minimum capacity of 5 gallons) are placed under Camlock cap from riser SY102-WST-RISER-022.

NOTE - Valve SY102-WST-V-145 is located on riser SY102-WST-RISER-022.

5.12.23 IF valve SY102-WST-V-145 is open, CLOSE valve SY102-WST-V-145.

5.12.24 REQUEST HPT perform survey of Camlock cap AND REMOVE Camlock cap from riser SY102-WST-RISER-022.

5.12.25 CONNECT hose to Camlock connector on riser SY102-WST-RISER-022.

5.12.26 DRAW plastic sleeving over Camlock connection of flexible hose AND SEAL plastic sleeving using tape.

5.12.27 PERFORM contamination surveys of work area to verify radiological controls.

5.12.28 IF SY Farm exhaust system shuts down, PERFORM the following.

5.12.28.1 STOP pumping.

5.12.28.2 ENSURE Water Buffalo Tank Isolation Valve is CLOSED.

5.12.28.3 NOTIFY Shift Manager of ventilation shutdown.
5.13 Pump Water Buffalo to 241-SY-102

5.13.1 RECORD starting data on Data Sheet 1.

5.13.2 CONFIRM hose and fitting are tight.

5.13.3 MONITOR connections and hoses throughout hookup, transfer and disconnect evolutions.

5.13.3.1 IF leakage is observed SECURE transfer AND NOTIFY Shift Manager.

5.13.4 OPEN Water Buffalo Tank Isolation Valve.

5.13.5 OPEN valve SY102-WST-V-145.

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**CAUTION**

Exceeding maximum tank liquid level of 422" or maximum fill volume specified on Data Sheet 1 may cause structural damage the 241-SY-102 tank (OSD-T-151-00007)

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5.13.6 CONFIRM the finishing level of Tank 241-SY-102 will not exceed the maximum fill volume specified in Data Sheet 1.

5.13.7 START Water Buffalo pump engine.

5.13.8 IF installed, PERFORM functional test of water meter per Data Sheet 1.

5.13.9 PERFORM periodic contamination and dose-rate survey of hose route and connections for leaks AND DOCUMENT survey results.

5.13.9.1 IF leaks are indicated TAKE appropriate actions per TF-AOP-011.

5.13.10 WHEN Water Buffalo is empty STOP pump engine AND CLOSE Water Buffalo Tank Isolation Valve.
5.13  Pump Water Buffalo to 241-SY-102 (Cont.)

5.13.11  IF directed by Shift Manager/OE/FWS, **FLUSH** Water Buffalo with water truck per Steps 5.13.11.1 to 5.13.11.4.

5.13.11.1  **IF** performing flush of Water Buffalo, **ADD** water to the Water Buffalo through tank vent **AND**

**RECORD** amount of flush water added on Data Sheet 1.

5.13.11.2  **OPEN** Water Buffalo Tank Isolation Valve **AND**

**RESTART** pump engine.

5.13.11.3  **WHEN** Water Buffalo is empty of flushing water **AND** flushing is complete, **STOP** pump engine **AND**

**CLOSE** Water Buffalo Tank Isolation Valve.

5.13.11.4  **IF** directed by Shift Manager/OE/FWS, **REPEAT** Steps 5.13.11.1 through 5.13.11.3 as often as desired to accomplish sufficient flush.

5.13.12  **OPEN** Water Buffalo Tank Isolation Valve to vent hose.

5.13.13  **DRAIN** hoses.

5.13.14  **CLOSE** valve SY102-WST-V-145.

5.13.15  **CLOSE** Water Buffalo Tank Isolation Valve to vent hose.

5.13.16  **COMPLETE** Data Sheet 1.

5.13.17  **NOTIFY** Health Physics organization of completion of transfer **AND**

**REQUEST** a final survey of transfer system be performed.
5.14 Water Buffalo and 241-SY-102 Restoration

5.14.1 POST disconnect location as a Contamination Area (CA).

5.14.2 INSTALL ground cover and catch container (minimum capacity of 5 gallons) under Camlock connector.

5.14.3 IF valve SY102-WST-V-145 is open, CLOSE valve SY102-WST-V-145.

5.14.4 UNSEAL plastic sleeving at SY102-WST-RISER-022 AND PERFORM contamination survey of disconnect location.

5.14.5 DISCONNECT hose from Camlock connector on valve SY102-WST-V-145.

5.14.6 PLACE end cap on riser SY102-WST-RISER-022 Camlock connector.

5.14.7 PERFORM contamination survey of work area and down post as conditions permit.

5.14.8 POST disconnect location for flex hose Camlock at drain valve on Water Buffalo as a Contamination Area (CA).

5.14.9 INSTALL ground cover and catch container (minimum capacity of 5 gallons) under Camlock connector for flex hose at drain valve on Water Buffalo.

5.14.10 IF Water Buffalo Tank Isolation Valve is open, CLOSE Water Buffalo Tank Isolation Valve.

5.14.11 UNSEAL plastic sleeving at Camlock connector for flex hose at drain valve on Water Buffalo AND PERFORM contamination survey of disconnect location.

5.14.12 DISCONNECT flex hose from Camlock connector on drain valve on Water Buffalo.

5.14.13 PLACE end cap on drain valve Camlock connector.

5.14.14 PERFORM contamination survey of work area and down post as conditions permit.
5.14 Water Buffalo and 241-SY-102 Restoration (Cont.)

5.14.15 COIL AND RETURN hose to storage.

5.14.15.1 CONTROL as radioactive material,

OR

DISPOSE of as solid waste per TO-100-052.
5.15 Shutdown System

5.15.1 ATTACH hoses to the connections at the following valves:

- Valve V-104, MANUAL DRAIN SUPPLY TANK
- V-119, SHOWER AND SINK DRAIN VALVE SHWR 3&4 / SINK 2 (EAST OUTSIDE)
- V-120. SHOWER AND SINK DRAIN VALVE SHWR 1&2 / SINK 1 (WEST OUTSIDE)

5.15.2 OPEN the following valves and manually DRAIN the water supply tank and sink and shower lines.

- Valve V-104, MANUAL DRAIN SUPPLY TANK
- V-119, SHOWER AND SINK DRAIN VALVE SHWR 3&4 / SINK 2 (EAST OUTSIDE)
- V-120. SHOWER AND SINK DRAIN VALVE SHWR 1&2 / SINK 1 (WEST OUTSIDE)

5.15.3 DISCONNECT the line between V-105, OUTLET CHECK VALVE SUPPLY TANK and P-101, WATER SUPPLY PUMP to drain this portion of the line.

5.15.4 COMPLETE Sections 5.7 and 5.8 to empty the grey water tanks.

**WARNING**

Failure to don proper PPE before performing circuit breaker, electrical disconnect, or starter operations, may result in personnel injury or death.

5.15.5 IF the system will be moved to another location (e.g. tank farm) or work is completed and system will not be needed, PERFORM the following:

5.15.5.1 ENSURE personnel trained in the operation of breakers and disconnects dons PPE (See Section 3.1).

5.15.5.2 OPEN all breakers in DP-101, DISTRIBUTION PANEL.
5.15 Shutdown System (Cont.)

5.15.6 **IF** PDU has been used for emergency response, **PERFORM** the following:

5.15.6.1 **PERFORM** appropriate surveys.

5.15.6.2 **DECONTAMINATE** areas as required by Health Physics.

5.15.6.3 **POST** signage/barriers as required by Health Physics.

5.15.7 **IF** PDU has not been used for emergency response, **OBTAIN** Environmental approval to drain contents of Grey Water tank.

5.15.8 **ATTACH** flexible drain hose between RW-V-121, MANUAL DRAIN VALVE GREY WATER TANK and the Waste Bladder/Waste Trailer Tank.

5.15.9 **OPEN** RW-V-121, MANUAL DRAIN VALVE GREY WATER TANK.

5.15.10 **RECORD** water drained entry on Decontamination Trailer Water Usage Log (Site Form #A-6003-914).

5.15.11 **DISCONNECT** water buffalo from PDU and dispose of contents per applicable procedure.

5.15.12 **RETURN** access steps and handrails to stowed position.

5.15.13 **RETRACT** stabilizer jacks.

5.15.14 **PERFORM** 360-degree walk-around of entire PDU.
5.16 Records

5.16.1 PERFORM the following for records identified within this procedure.

5.16.2 RECORD the number of times the record was generated in applicable column,

OR

PLACE a check mark (✓) in the N/A column.

5.16.3 SUBMIT the package to FWS/OE/Shift Manager.

<table>
<thead>
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<td>A-6003-914, Decontamination Trailer Water Usage Log (when filled in per this procedure)</td>
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FWS/OE/Shift Manager SEND the completed records to the Central Shift Office for records retention.

_________________________ / _______________ / ___________
Signature                Print (First & Last)    Date

FWS/OE/Shift Manager

The record custodian identified in the company level Record Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.
## Checklist 1 - Initial Valve Line-up

<table>
<thead>
<tr>
<th>VALVE</th>
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</tr>
<tr>
<td>V-104A</td>
<td>Manual Drain Supply Pump</td>
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<td>V-106</td>
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<td>V-107</td>
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<td>V-109</td>
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<td>V-110</td>
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<td>V-111</td>
<td>Drain Valve East Water Heater</td>
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<td>V-112</td>
<td>Mixing Valve (Top) Supplies Showers 1 &amp; 2 / Sink 1</td>
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<tr>
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<td>Mixing Valve (Bottom) Supplies Showers 3 &amp; 4 / Sink 2</td>
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<td>V-115</td>
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<td>V-116</td>
<td>Isolation Valve Supply Tank Chemical Treatment</td>
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<td>Drain Valve Filter Housing</td>
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## Checklist 2 - Electrical Lineup for Shock Water System/Maintenance

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<th>USE</th>
<th>POSITION</th>
<th>*Check</th>
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<td>Interior Receptacles</td>
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<td>✔️</td>
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<tr>
<td>7A</td>
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<td>East Water Heater (Htr-102)</td>
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* - Based on weather conditions, CSM may direct SOE to change breaker positions.
# Operate Personnel Decontamination Unit

**Checklist 3 - Electrical Lineup for Fill Water Supply System**

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* - Based on weather conditions, CSM may direct SOE to change breaker positions.
### Checklist 4 - Operating Valve Line-up

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<td>Showers 1 &amp; 2 / Sink 1</td>
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## Checklist 5 - Operating Electrical Line-up

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<td>CLOSED</td>
<td></td>
</tr>
<tr>
<td>9A</td>
<td>Space Heater (Equipment Room) (Htr-103)</td>
<td>CLOSED</td>
<td></td>
<td>10A</td>
<td>Heat Trace - Grey Water</td>
<td>CLOSED</td>
<td></td>
</tr>
<tr>
<td>11A</td>
<td>Space Heater (Dirty Room) (Htr-104)</td>
<td>CLOSED</td>
<td></td>
<td>10B</td>
<td>Heat Trace - Supply Water</td>
<td>CLOSED</td>
<td></td>
</tr>
<tr>
<td>11B</td>
<td>Space Heater (Clean Room) (Htr-105)</td>
<td></td>
<td></td>
<td>12A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13A</td>
<td>Air Conditioning Unit (AC-101)</td>
<td>CLOSED</td>
<td></td>
<td>12B</td>
<td>Space Heater (Clean Room) (Htr-105)</td>
<td>CLOSED</td>
<td></td>
</tr>
<tr>
<td>15A</td>
<td>Air Conditioning Unit (AC-102)</td>
<td>CLOSED</td>
<td></td>
<td>14A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15B</td>
<td>Primary Room Heater (Roof Mounted) (Htr-106)</td>
<td>CLOSED</td>
<td></td>
<td>14B</td>
<td>Neg. Air Fan (F-1)</td>
<td>CLOSED</td>
<td></td>
</tr>
<tr>
<td>17A</td>
<td>Spare</td>
<td>N/A</td>
<td></td>
<td>16A</td>
<td>North Pole Lights</td>
<td>CLOSED</td>
<td></td>
</tr>
<tr>
<td>17B</td>
<td>Spare</td>
<td>N/A</td>
<td></td>
<td>16B</td>
<td>South Pole Lights</td>
<td>CLOSED</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Spare</td>
<td>N/A</td>
<td></td>
<td></td>
<td>Spare</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

* - Based on weather conditions, CSM may direct SOE to change breaker positions.
## Operate Personnel Decontamination Unit

### Data Sheet 1 - AY 101/SY102 Raw Water Usage

One data sheet is required for EACH water usage activity

<table>
<thead>
<tr>
<th>Date:</th>
<th>Time:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Tank Level (Max Level 364” AY-101, 422” SY-102 per OSD-007)</th>
<th>Start:</th>
<th>Finish:</th>
<th>Receiver Tank:</th>
</tr>
</thead>
</table>

- SY-102: ☐
- AY-101: ☐

**Water Source:**

- Approximate amount of water required (gallons): [ ]

**Water meter functioning properly?**

- YES ☐
- NO ☐

**Water meter functional verification method:**

**WATER METER READINGS**

<table>
<thead>
<tr>
<th>Meter Identification</th>
<th>Final Reading:</th>
<th>Beginning Reading:</th>
<th>Actual Volume Used:</th>
</tr>
</thead>
</table>

**Operator Name**

(Print first & last):

**Operator Signature**

(Date: )

**Shift Manager Review**

(Print first & last):

(Date: )

**Special Instructions**

SCAN AND EMAIL completed Data Sheet to mailbox “^Process Engineering & Environmental”.

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**Type** CONTINUOUS  **Document No.** TO-020-029  **Rev/Mod** C-2  **Release Date** 12/21/2017  **Page** 73 of 83
Figure 1 - PDU System Layout

Operating Notes:
1. Design Spec - WRPS-10000208
2. CVI VI-50593
3. Contract # - 41448
4. One water supply tank and two grey water tanks are mounted below the floor
5. Precede all equipment designations with the following unless otherwise noted:
   West PDU: POR291-EMER- or
   East PDU: POR292-EMER

- Potable Water Fill Indicator (Red LED)
- Water Supply Inlet Connection
- Inlet Isolation Valve (under trailer)
- Mixed Panel DP-101
- Space Heater HTR-101
- Space Heater HTR-102
- Flood Lights (4 corners)
- Water Supply Pump P-101
- Water Supply Filter FLT-101
- Water Supply Priming Pump P-102
- Ultra Violet Sanitizer UVS-101
- Negair Switch
- Interior Light Switch
- General Notes:
  1. Design Spec - WRPS-10000208
  2. CVI VI-50593
  3. Contract # - 41448
  4. One water supply tank and two grey water tanks are mounted below the floor
  5. Precede all equipment designations with the following unless otherwise noted:
     West PDU: POR291-EMER- or
     East PDU: POR292-EMER
Operate Personnel Decontamination Unit

Figure 2 - PDU Supply Water Flow Diagram

General Notes:
1. Precede all equipment designations with the following unless otherwise noted:
   West PDU: POR291-EMER-
   East PDU: POR292-EMER-
Figure 3 - PDU Grey Water Flow Diagram

General Notes:
1. Precede all equipment designations with the following unless otherwise noted:
   - West PDU: POR291-EMER-
   - East PDU: POR292-EMER-
## Figure 4 - Panel Board Schedule

<table>
<thead>
<tr>
<th>CKT</th>
<th>Panel Board Schedule</th>
<th>CKT</th>
<th>Panel Board Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Exterior Receptacles</td>
<td>2</td>
<td>Ultra Violet Sanitizer (UVS-101)</td>
</tr>
<tr>
<td>3</td>
<td>Interior Receptacles</td>
<td>4</td>
<td>Grey Water Pump (P-103)</td>
</tr>
<tr>
<td>5</td>
<td>Interior Lighting</td>
<td>6A</td>
<td>12V Converters RCPT-9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6B</td>
<td>Water Supply Pump (P-101)</td>
</tr>
<tr>
<td>7A</td>
<td>Spare</td>
<td>8A</td>
<td>Spare</td>
</tr>
<tr>
<td>7B</td>
<td>West Water Heater (Htr-101)</td>
<td>8B</td>
<td>East Water Heater (Htr-102)</td>
</tr>
<tr>
<td>9A</td>
<td></td>
<td>10A</td>
<td></td>
</tr>
<tr>
<td>9B</td>
<td>Space Heater (Equipment Room) (Htr-103)</td>
<td>10B</td>
<td>Heat Trace - Grey Water</td>
</tr>
<tr>
<td>11A</td>
<td></td>
<td>12B</td>
<td>Heat Trace - Supply Water</td>
</tr>
<tr>
<td>11B</td>
<td>Space Heater (Dirty Room) (Htr-104)</td>
<td>12B</td>
<td></td>
</tr>
<tr>
<td>13A</td>
<td></td>
<td>14A</td>
<td></td>
</tr>
<tr>
<td>13B</td>
<td>Air Conditioning Unit (AC-101)</td>
<td>14B</td>
<td>Neg. Air Fan (F-1)</td>
</tr>
<tr>
<td>15A</td>
<td>Air Conditioning Unit (AC-102)</td>
<td>16A</td>
<td>North Pole Lights</td>
</tr>
<tr>
<td>15B</td>
<td>Primary Room Heater (Roof Mounted) (Htr-106)</td>
<td>16B</td>
<td>South Pole Lights</td>
</tr>
<tr>
<td>17A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17B</td>
<td>Spare</td>
<td>18</td>
<td>Spare</td>
</tr>
</tbody>
</table>
Operate Personnel Decontamination Unit

Figure 5 - AY Water Buffalo Addition - Hose Bib Connection

Water Buffalo

Drain and Sample Valve

Tank Isolation Valve

2 Inch Camlock fitting

AY101-WST-V-114

AY101-WST-RISER-066

Tank 241-AY-101
Operate Personnel Decontamination Unit

Figure 6 - SY Water Buffalo Addition - Hose Bib Connection

- Water Buffalo
- Water Buffalo
- Drain and Sample Valve
- Tank Isolation Valve
- 3/4 inch hose
- 2 inch Camlock fitting
- SY102-WST-V-145
- SY102-WST-RISER-022
- Tank 241-SY-102
Figure 7 - UV Power Supply Indicating Lights (Model E4)

<table>
<thead>
<tr>
<th>Indicator Light</th>
<th>Light Color</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Green: N/A</td>
<td>Lamp operating normally</td>
</tr>
<tr>
<td></td>
<td>Yellow: N/A</td>
<td>Warning: Lamp will require replacement soon</td>
</tr>
<tr>
<td></td>
<td>Flashing Red: N/A</td>
<td>Lamp disconnected; unplug system, reconnect lamp and plug in system again.</td>
</tr>
<tr>
<td></td>
<td>Solid Red: N/A</td>
<td>Lamp inactive due to power supply failure.</td>
</tr>
<tr>
<td>2</td>
<td>Green: Lamp operating normally</td>
<td>Warning: Lamp will require replacement soon</td>
</tr>
<tr>
<td></td>
<td>Yellow: Air temperature around system is too warm</td>
<td>Power supply failure; replace power supply</td>
</tr>
<tr>
<td></td>
<td>Flashing Red: Lamp failure: Replace lamp</td>
<td>Power supply inactive due to lamp or power supply failure</td>
</tr>
<tr>
<td></td>
<td>Solid Red: Power supply inactive due to lamp or power supply failure</td>
<td></td>
</tr>
</tbody>
</table>

From Figure Above | Corresponding Equipment | Function |
--- | --- | --- |
A | Lamp timer display | Counts down from 365 days to show remaining time until annual lamp replacement |
B | Lamp timer reset | After installing a new lamp, press and hold this button until you hear a beep (about 5 seconds). This will reset the lamp timer to 365. |
C | Alarm Mute Button | Press this button to silence alarm. When the alarm is due to the lamp’s age, the mute button will deactivate the audible alarm for 7 days; this may be repeated up to a maximum of 4 times. After that the silence button will only silence for 24 hours. When the alarm is due to any other issue, the mute button will only silence the audible alarm for 24 hours. |
Operate Personnel Decontamination Unit

Attachment 1 - PNL-101, CP-101 and CP-102

**POR29X-EMER-CP-101**
MIXING VALVE 112 CONTROL PANEL
SUPPLIES SHOWERS 1 & 2 / SINK 1

**POR29X-EMER-PNL-101**
LEVEL INDICATION AND ALARM PANEL
SUPPLY AND GREY WATER TANKS

**POR29X-EMER-EMO-101**
SYSTEM START AND
EMERGENCY STOP
(Pulled Out - System Running
Pushed In - System Standby)

Note - POR29X = POR291 or POR292 or POR293 as applicable

**POR29X-EMER-CP-102**
MIXING VALVE 113 CONTROL PANEL
SUPPLIES SHOWERS 3 & 4 / SINK 2
The PNL-101, Level Indication and Alarm Panel Supply and Grey Water Tanks provides the following information and controls:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Display Format</th>
<th>Range of Conditions</th>
<th>Purpose</th>
<th>Level of Control or Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>System</td>
<td>Red Light</td>
<td>Flashing to solid</td>
<td>Indicates if the system is running or not.</td>
<td>Flashing light (with red button pushed in) - system is stopped. No light (with red button pulled out) indicates system can be run. Solid light (any button position) - waste tank is full and system can’t start.</td>
</tr>
<tr>
<td>&gt;7/8 Full</td>
<td>Yellow Light</td>
<td>Flashing to solid</td>
<td>Warning indicating waste is approaching full condition.</td>
<td>Flashing light - Limit is reached but system will continue to run. Solid light - tank is full, the supply system will not operate. Request from Shift Manager to pump.</td>
</tr>
<tr>
<td>Silence Alarm</td>
<td>White Button</td>
<td>---</td>
<td>Acknowledges alarm condition by temporarily silencing the horn.</td>
<td>The audible alarm will repeat every 10 minutes while the alarm condition is in affect.</td>
</tr>
<tr>
<td>&gt;1/4 Full</td>
<td>Blue Light</td>
<td>Flashing</td>
<td>Warning indicating the supply tank is close to empty.</td>
<td>Flashing light - limit has been reached. Solid light - tank is empty. Request from Shift Manager to fill</td>
</tr>
<tr>
<td>Stop/Push Button</td>
<td>Red Button</td>
<td>In or Out</td>
<td>Push in to stop system Pull out to start system (controls operation of mixing valves)</td>
<td>Pushed in: Shuts down the mixing valves. Generates audible “chirp” every 2 minutes. Pulled out: System can be started.</td>
</tr>
<tr>
<td>Waste Tank</td>
<td>Gauge</td>
<td>Gauge</td>
<td>Provides visual indication of the waste tank level.</td>
<td>The level instrument that sends a signal to the gauge is the controlling element.</td>
</tr>
<tr>
<td>TEST</td>
<td>White Button</td>
<td>---</td>
<td>Tests the displays</td>
<td>Lights will energize, needles on gauges will deflect, horn will sound. *</td>
</tr>
<tr>
<td>Fresh Tank</td>
<td>Gauge</td>
<td>Gauge</td>
<td>Provides visual indication of the supply tank level</td>
<td>The level instrument that sends a signal to the gauge is the controlling element.</td>
</tr>
</tbody>
</table>

* - If the system is running and the test button is depressed, it will shut the system down at the mixing valves. To restart the system, the mixing valve start buttons must be pressed.