

**PLUTONIUM FINISHING PLANT
PLUTONIUM RECLAMATION FACILITY**

ALARM RESPONSES FOR PRF ALARM PANEL B-2

ZO-180-802
Rev/Mod A-0
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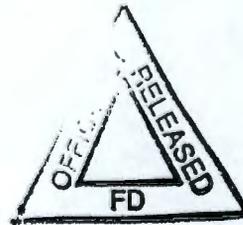


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1. INTRODUCTION

1.1. Purpose

This procedure provides responses to alarms identified on the PRF Control Room alarm panel B-2 located on the north end of the east control panel of Room 44.

1.2. Scope

The alarms associated with these panels are as follows:

1. Tank 120 High and Lo level alarms along with cooling jacket differential pressure alarm.
2. Organic clean up CU Column overflow alarm.
3. 241-Z waste storage area common alarm, D-5 agitator alarm and Caustic storage tank temperature and level alarms.
4. The B-2 panel does contain several inactive alarms.

1.3. Applicability

Alarms on these panels may alarm during any plant or process condition and the specific alarm responses will address these conditions.

2. PRECAUTION AND LIMITATIONS

2.1. Criticality

All posted criticality prevention limits shall be read and followed.

The maximum depth of any solid and solution accumulations in gloveboxes shall not exceed 1 inch.

Liquid spills up to weir height shall be cleaned up to less than 1 inch within 24 hours, or verified to be less than 2500 g/ft² Pu.

3. PREREQUISITE ACTION

An alarm condition exists.

4. TOOLS, EQUIPMENT AND MATERIAL

4.1. References

Radiation Work Permits, Z-007, Z-012
 Hanford Site Radiological Control Manual, HSRM-1
 Criticality Prevention Specification, CPS-Z-165-80010, -80708,
 -80710, -80704, -80706, -80741

4.1.1. Referenced Documents

ZO-101-009, PERFORM BATCHWISE CHEMICAL ADDITIONS AT 241-Z
 ZO-101-800, ALARM RESPONSE FOR ALARM PANEL 241-ZA
 ZO-180-029, DRAIN PRF TANKS
 ZO-180-600, PERFORM 236-Z SURVEILLANCE AND RESPONSES
 ZO-181-004, SHUTDOWN SOLVENT EXTRACTION

OSR/OPERATING MATRIX
OPERATING LIMIT

OSR LIMIT

5. OSR MATRIX

<u>CONDITION/ VARIABLE</u>	<u>OPERATING RANGE</u>	<u>ACTION FOR OPERATING RANGE VIOLATION</u>	<u>LIMITING CONDITION FOR OPERATION (LCO)</u>	<u>ACTION FOR LCO NON- CONFORMANCE*</u>
Glovebox gloves and bags	Failed or leaking glovebox gloves shall be replaced before operation within the glovebox.	Same as OSR LCO violation	Failed or leaking glovebox gloves shall be replaced before operation within the glovebox.	STOP WORK IN GLOVEBOX See RHO-CD-1244 Sect. 11.3.1
	Gloves which fail during operation shall be identified and replaced before operation continues.	Same as OSR LCO violation.	Gloves which fail during operation shall be identified and replaced before operation continues.	STOP WORK IN GLOVEBOX See RHO-CD-1244 Sect. 11.3.1
Glovebox negative pressure	Must be between -0.5 in. WG and -2.0 in. WG.	Stop work, check for hood leaks, and adjust to operating range.	Must be more negative than -0.3 in. WG.	STOP WORK IN GLOVEBOX See RHO-CD-1244 Sect. 11.3.1
Exhaust HEPA Filter DP	Must be less than 3 in. WG.	Schedule filter change.	Must be less than 4 in. WG.	STOP WORK IN GLOVEBOX See SD-HS-SAR-007 Sect. 11.3.2

* Supervision shall initiate recovery steps per Section 11.6.1.2 of RHO-CD-1244 or Section 11.6.6.2 of SD-HS-SAR-007, as applicable, within 24 hr. Supervision shall immediately contact the Duty Manager, Manager of process effected, Plant Manager, PFP Process Engineering, and Facility Safety Engineer. The situation, notifications and start time of the event shall be recorded in operations logbook.

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6. PERFORMANCE

6.1. Respond to PRF Control Room Panel B-2 Alarms

- A. Respond to PRF Control Room Panel B-2 Alarms
 1. Silence alarm by pressing ACKNOWLEDGE button.
 2. Respond to alarms per section of Attachment 3 as indicated by Attachment 1.
 3. Record alarms and actions taken in PRF Control Room Logbook.
 4. Notify supervision of alarms, actions taken, and current conditions.

Attachment 1 - ROOM 44 ALARM PANEL B-2
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1 OVERFLOW CU COLUMN TK-123 PAGE 7	2 LOW WEIGHT FACTOR CPF PUMP TANK TK-121 INACTIVE	3 LOW WEIGHT FACTOR CAP PUMP TANK TK-120 PAGE 8
4 OVERFLOW CP COLUMN TK-122 INACTIVE	5 HIGH WEIGHT FACTOR CPF PUMP TANK TK-121 INACTIVE	6 HIGH WEIGHT FACTOR CAP PUMP TANK TK-120 PAGE 9
7 LOW pH TK-70 INACTIVE	8 CAUSTIC STORAGE D-9 LEVEL AND TEMP * PAGE 10	9 TK-120 D P * PAGE 11
10 HIGH CAW INACTIVE	11 D-5 AGITATOR DE-ENERGIZER * PAGE 12	12 ALARM BUILDING 241-Z * PAGE 13

⊙
ACKNOWLEDGE

⊙
TEST

* Indicates cover is RED, and IMMEDIATE RESPONSE ACTION IS REQUIRED.

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Attachment 2 - WEIGHT FACTOR LEVEL INDICATION SYSTEM DESCRIPTION
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- WF - Weight Factor: Unit of level indication equivalent to liquid height in inches of water. Actual height of solution in tank may be lower than indication for solution densities greater than water (1.00). Measured by differential pressure between top and bottom dip tubes due to weight of liquid.
- Dip Tube - Air sensing tubing running from the WF Transmitter to the tank. Low leg indicates low pressure and is attached to the tank vent. High leg indicates high pressure and terminates at the bottom of the tank. Air rotameters on 3rd floor provide control and indication of air flow through the dip tubes to ensure proper operation.
- WFT - Weight Factor Transmitter: Converts the differential pressure from the dip tubes to electric signal (10-50 mA) that provides level signal for control room indication and alarms.
- WFAS - Weight Factor Alarm Switch: Monitors electric signal (10-50 mA) from WFT for either Low and/or High current flow and trips alarm relay at values below and/or above set points.
- WFR - Weight Factor Recorder: Converts electric signal (10-50 mA) to a strip chart recorder and indication on a 0-100% scale. PRF tank calibration manual (located in the Control Room) may be used to convert chart readings to actual tank volumes.

Attachment 3 - RESPONSES TO PANEL B-2 ALARMS
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ALARM	POSSIBLE CAUSES	RESPONSE
<p><u>OVERFLOW CU COLUMN TK-123</u></p> <p>Alarm is actuated when conductive solution contacts both metal probes of the conductivity element located at the top of the CU Column in the PRF canyon. As electrical flow occurs between the probes the resulting voltage difference trips the alarm switch generating the alarm. The CU column aqueous solution typically flows to Tank 39, or Tank 41. In an overflow condition, solution also is routed to Tanks 52.3 and 52.4. Alarm should acknowledge but not clear until solution no longer contacts both probes. Due to pulsing in the CU column, this alarm will tend to chatter on and off when alarming. The top of the CU Column contains waste water so overflow is not a major concern but could be avoided.</p>	<ul style="list-style-type: none"> - Inadvertent solution flow to CU Column - CUU valves not OPEN - Plug in CUU piping - "Airlock" in CUU piping - Instrument failure <p><u>REFERENCES:</u></p> <p>Drawings: EFD; H-2-28020 H-2-28014 GPL; H-2-28373 H-2-28379</p> <p>CBRS: Loop #; A0406 Sequence #; 1 & 2 Frequency; 12 mo</p>	<p><u>AUTOMATIC ACTION:</u> NONE</p> <p><u>OPERATOR ACTIONS:</u></p> <ol style="list-style-type: none"> 1. Check the level indicator for tank 52.4 (B-9) and compare tank level to previous PRF "Standby Surveillance - Process Vessel" surveillance checks per ZO-180-600 and report all changes. 2. <u>IF</u> Organic clean up is not running: <ol style="list-style-type: none"> a. In Chem Prep, verify water valves C-288 and C-289 (West of TK-A104) are CLOSED. c. On second floor, verify valves 458 (WF-3) and 470 (WG-3) are CLOSED. c. On fourth floor, verify valves 901 and 903 (column glovebox, Rm 42) and 4337 and 4338 (Rm 43 south wall) are CLOSED. e. Continue to periodically monitor tank 52.4 level as long as alarm remains locked in. 3. <u>IF</u> Organic cleanup is operating: <ol style="list-style-type: none"> a. Verify CU Column Interface Controller is in the "AUTO" mode and CU interface reading is at setpoint (Chart #49, panel B-2) and P-123 red ON light is ON (switch 123-SS-D to START, B-6). <u>IF</u> action performed and alarm clears, no additional actions are required. b. Verify valve 493 (WL-3) or 496 (WL-3) is OPEN and 258 (WF-1), 463 (WJ-3) and 470 (WG-3) are OPEN. c. <u>IF</u> the alarm still does not clear and tanks 52.3 and 52.4 are receiving solution, the organic clean up system may be shut down for trouble shooting and/or repairs. 4. Addition responses may include flushing or venting of CUU line or partial draining of the CU Column.

Attachment 3 - RESPONSES TO PANEL B-2 ALARMS (Cont.)
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ALARM	POSSIBLE CAUSES	RESPONSE
<p>LOW WEIGHT FACTOR CAP PUMP TANK TK-120</p> <p>Volume: 59 liters WFT Range: 0-90" H₂O Set Point: 18" H₂O²</p> <p>Actuated when TK-120 WFAS senses less than 18 mA (20% of chart or a minimum of 8 liters). TK-120 drains to tanks 52.3 and 52.4 (level indication on panel B-9) or glovebox floor. Alarm should acknowledge but not clear until level is above set point. TK-120 contains solvent extraction high Pu organic solution from the CA column which is pumped to the CC column. Solution drained from TK-120 should be minimized.</p> <p>Equipment Locations: Tk-120 - 1st & 2nd WF WFT - 3rd West. WFAS - behind panel B IFR - Chart 50 panel B-2 TK-52.3 and TK-52.4 - 1st WW (In glovebox)</p>	<ul style="list-style-type: none"> - Decrease in tank level - Plugged low dip tube - Leak on High dip tube - Instrument air upset - Power interruption - Instrument failure <p><u>REFERENCES:</u></p> <p>Drawings: EFD; H-2-28019 GPL; H-2-28373</p> <p>CBRS: Loop #: A0067 Sequence #: 1, 2, 4 & 5 Frequency: 12 mo</p>	<p><u>AUTOMATIC ACTION:</u> None</p> <p><u>OPERATOR ACTIONS:</u></p> <ol style="list-style-type: none"> 1. Check present readings for TK-120 WF recorder (B-2) and TK-52.4 indicator (B-9) along with recent WF recorder (chart 50) trend for TK-120. <ol style="list-style-type: none"> a. IF TK-120 WF has not dropped below 20 % of chart, notify supervision of equipment failure. No further actions required. b. IF sudden TK-120 WF changes correspond to outages in electrical power or instrument air and reading returned to previous value, no actions required. c. IF WF decreased suddenly to 0%, this indicates possible instrument problem. Continue to verify. 2. IF solvent extraction is operating: <ol style="list-style-type: none"> a. On first floor, verify that valves 254 (WF-1) 256 (WF-1), 426 (NC-3), and 430 (NC-3) are CLOSED. b. IF level does NOT rise from closing valves 254 and/or 256, CONTINUE. c. Reduce CCF flow rate (120-FC-A per rate sheet, Chart 54, B-2) until TK-120 level rises to acceptable operating range. d. IF level does NOT rise from process evolutions, verify valves 428 (WC-3) and 437 (WD-3) are OPEN, interface control valve 32-DOV-A (WC-3) is opening (controller chart 68, B-3) and look for leaks on 2nd West. e. IF alarm does NOT clear and destination of CAP stream can NOT be determined, perform Short Term Shutdown per ZO-181-004. 3. IF solvent extraction is NOT operating: <ol style="list-style-type: none"> a. Verify that pump 120-MOP-8 green READY light is ON (selector switch 120-SS-B to STOP, B-2). b. On first floor, verify that valves 254 (WF-1), 255 (WF-1) and 256 (WF-1) are CLOSED. c. IF drain valve 254 was open, check solution level in tanks 52.3 or 52.4 (WW) and Gloveboxes WW and WW. d. IF sample valve 256 was open, check solution level in Glovebox WF. e. IF block valve 255 was open and pump 120 was ON, determine solution destination by performing step 4. f. IF all valves are closed, perform visual check of canyon and access gloveboxes for leaks. 4. Compare changes in tank levels and gloveboxes to previous PRF "Standby Surveillance - Process Vessel" surveillance checks per ZO-180-600 to determine possible causes of alarm and/or loss of solution from TK-120.

Attachment 3 - RESPONSES TO PANEL B-2 ALARMS (Cont.)
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ALARM	POSSIBLE CAUSES	RESPONSE
<p><u>HIGH WEIGHT FACTOR CAP PUMP TANK TK-120</u></p> <p>THIS ALARM WILL NOT ACKNOWLEDGE UNTIL CLEARED</p> <p>Volume: 59 liters WFT Range: 0-90" H₂O Set Point: 75" H₂O²</p> <p>Actuated when TK-120 WFAS senses greater than 43 mA (83% of chart or a maximum of 49 liters). TK-120 overflows to tanks 52.3 and 52.4 (level indication on panel B-9). Alarm will NOT acknowledge or clear until after level is below set point. TK-120 contains solvent extraction high Pu organic solution from the CA column which is pumped to the CC column. TK-120 should NOT be allowed to overflow.</p> <p>Equipment Locations: Tk-120 - 1st & 2nd WF IFT - 3rd West. WFAS - behind panel B WFR - Chart 50 panel B-2 TK-52.3 and TK-52.4 - 1st WW (In glovebox)</p>	<ul style="list-style-type: none"> - Increase in tank level - Plugged high dip tube - Instrument air upset - Power interruption - Instrument failure <p><u>REFERENCES:</u></p> <p>Drawings: EFD; H-2-28019 GPL; H-2-28373</p> <p>CBRS: Loop #: A0067 Sequence #: 1, 2, 3 & 5 Frequency; 12 mo</p>	<p><u>AUTOMATIC ACTION:</u> None</p> <p><u>OPERATOR ACTIONS:</u></p> <ol style="list-style-type: none"> 1. Check present readings for TK-120 WF recorder and TK-52.4 indicator (B-9) along with recent WF recorder (chart 50, B-2) trend for TK-120. <ol style="list-style-type: none"> a. <u>IF</u> TK-120 WF has not exceeded 83 % of chart, notify supervision of equipment failure. No further actions required. b. <u>IF</u> sudden TK-120 WF changes correspond to outages in electrical power or instrument air and reading returned to previous value, no actions required. c. <u>IF</u> WF increased suddenly to 100%, this indicates possible high leg dip tube plugging. Continue to verify. 2. <u>IF</u> solvent extraction is operating: <ol style="list-style-type: none"> a. Verify CA Column is NOT draining by visual check for solution in 6th floor glass section, CA Interface recorder (chart 68, B-3) is NOT 100% or increasing, and CA interface controller output is NOT 100%. b. Verify valve 430 (WC-3) is CLOSED. c. Increase CCF flow to CC Column (controller 120-FC-A chart 54, B-2) by 10% and temporarily (less than 5 min.) decrease CAX flow to CA Column by 5% (32-FC-F chart 69, B-3). d. <u>IF</u> alarm does NOT clear, push CRUD from CA Column by setting CA Interface Controller to manual and output to 0 (32-IFRC-A, chart 68, B-3) to close 32-DOV-A. e. <u>IF</u> alarm still has not cleared by the time interface is at top of CA Column, perform Solvent extraction Short Term Shutdown per ZO-181-004 and attempt to determine cause of CCF flow loss. TK-120 may be partially drained per ZO-180-029 to silence alarm. f. <u>IF</u> alarm has cleared, return all flow rates to normal flow sheet values, no additional actions required. 3. <u>IF</u> solvent extraction is NOT operating: <ol style="list-style-type: none"> a. On first and second floors, verify that valves 262 (WG-1), 428 (WC-3), 429 (WC-3), 430 (WC-3), 437 (WD-3) and 485 (WG-3) are CLOSED and no solution is entering tanks 52.3 or 52.4 (WW). b. On third floor west, verify valves 120-B1 and 120-B2 are CLOSED. c. <u>IF</u> increase and/or overflow have stopped, solution may be drained per ZO-180-029 via valves 254 (WF-1) and 255 (WF-1) to silence alarm. 4. <u>IF</u> no transfers were in progress in PRF, perform PRF "Standby Surveillance - Process Vessel" surveillance checks per ZO-180-600 and identify any changes in tank levels. 5. Evaluate all transfers and changes in tank levels to determine possible causes of alarm and/or source of solution entering TK-120.

ALARM	POSSIBLE CAUSES	RESPONSE
<p>CAUSTIC STORAGE D-9 LEVEL AND TEMP</p> <p>Volume: 15,000 liters LT Range: 0-102" H₂O Set Point: 18" LO & 90" HI TT Range: 0-100°C Set Point: 40°C LO & 49°C HI</p> <p>LE - Level Element for Tank D-9 is an ultrasonic or sonar type probe. TE - Temperature Element located inside of Tank D-9. LI - Level Indicator provides digital readout of level (0-100%) or pointer readout for temperature (0-100°C). LT/TT - Level Transmitter, provides power for LE/TE and signal (4-20mA) to 241-ZA LI/TI and LR in PRF control room. LR - Level Recorder generates strip chart record (0-100%) of level and temperature. This unit also generates alarms on high and low set points for both.</p> <p>Actuated when Tank D-9 LT signal is greater than 18.4 mA or less than 6.8 mA (88% HI / 18% LO of chart or 13,200 HI / 2,760 LO liters). Tank D-9 transfers only to Tank D-5. Leaks could either go to the basin or into the steam jacket which discharges to the condensate drain. Solution sources: supply trucks, pump flush water and steam condensate. Alarm should acknowledge but not clear until level is within operating range.</p> <p>Actuated when Tank D-9 TT signal is greater than 12 mA or less than 10.4 mA (49°C HI or 40°C LO). Temperature of Tank D-9 is kept within range to prevent freezing and/or boiling of caustic solution. Transfer of Caustic with temperature below 40°C is an OSD violation.</p> <p>Equipment Locations: Tk D-9 - East of 241-Z LE/TE - top center of D-9 LI/TI - 241-ZA instrument panel LR - Chart 55 panel B-2, PRF</p>	<ul style="list-style-type: none"> - Decrease in tank level - Increase in tank level - Extreme high tank temp. - Change in tank temp. - Power interruption - Instrument failure <p><u>REFERENCES:</u></p> <p>Drawings: EFD; H-2-76789 instr.H-2-91796 H-2-91797</p> <p>OSD-Z-184-00010</p> <p>CBRS: Loop #; A0706 Sequence #; 1, 2 & 3 Frequency; 12 mo</p>	<p><u>AUTOMATIC ACTION:</u> None</p> <p><u>OPERATOR ACTIONS:</u></p> <ol style="list-style-type: none"> 1. Check present reading and trends for Tank D-9 Level and Temperature Recorder (LR-D91 and TR-D91, B-2). <ol style="list-style-type: none"> a. <u>IF</u> Tank D-9 level is between 18 % and 88 %, temperature is between 40 % and 49 % and alarm clears, no further actions required. b. <u>IF</u> either level or temperature is out of range, verify/compare readings at the 241-Z instrument panel and continue. 2. <u>IF</u> level is below 18 % (low level alarm): <ol style="list-style-type: none"> a. <u>IF</u> transferring solution to Tank D-9, complete transfer. No further actions required. b. Verify chemical addition pump P-D9-4 (East end of D-9) is NOT running. Pump switch P-D9-4 on 241-ZA instrument panel to STOP. c. Verify valves V8 in 241-Z and V50 near the caustic pump are CLOSED. d. Test all sump solutions to determine pH for presence of caustic (ie. litmus paper). e. With V27 OPEN, take small sample (30ml) of steam condensate from V34 and test for pH. f. <u>IF</u> condensate sample has pH greater than 9, CLOSE valve V27, V16 and V17. 3. <u>IF</u> level is above 88 % (high level alarm): <ol style="list-style-type: none"> a. <u>IF</u> transferring solution to Tank D-9, complete transfer. No further actions required. b. At D-9, verify valves V-45, V-51, V-52, V-53 V-54 and V-57 are CLOSED. c. <u>IF</u> level continues to rise, verify steam valves V16, V17 and V27 are CLOSED. 4. <u>IF</u> D-9 level is not between 18% and 88%, compare Tank D-9 and D-5 levels to previous PRF "Standby Surveillance - Process Vessel" surveillance checks per ZO-180-600. 5. <u>IF</u> temperature is above 49°C: <ol style="list-style-type: none"> a. Verify valves V16 and V17 (at D-9) are CLOSED. b. Initiate surveillance of D-9 temperature and request repair of temperature controller. 6. <u>IF</u> temperature is below 40°C: <ol style="list-style-type: none"> a. Verify steam station is valved in per ZO-101-009. b. <u>IF</u> steam station valving is correct, request repair of temperature controller. c. <u>IF</u> temperature remains below 40°C and transfer of caustic is required. Tank may be heated temporarily by opening bypass valve V-17.

Attachment 3 - RESPONSES TO PANEL B-2 ALARMS (Cont.)
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ALARM	POSSIBLE CAUSES	RESPONSE
<p>TK-120 DP</p> <p>DP Cell Range: 0-50 psi Alarm Point: 10 psi (LO)</p> <p>Actuated when TK-120 DPAS senses less than 7.2 mA (10 psi difference). Two sealed Differential Pressure Cells (strain gauge type) are used to sense line pressures for the process stream and cooling water on the TK-120 cooling jacket. Each has a Pressure Transmitter which sends an electric signal (4-20 mA) to a subtractor module. This compares the two signals and sends a signal (4-20 mA equaling 0-50 psi) to the Differential Pressure Alarm Switch (DPAS) representing the differential pressure between the TK-120 cooling jacket water and the TK-120 recirculation pressure. This ensures that water pressure is greater than the pump pressure and alarm interlock prevents routing TK-120 solution to the Z-20 crib. Alarm should acknowledge but not clear until water pressure is 10 psi greater than process stream pressure.</p> <p>Equipment Locations: TK-120 - 1st and 2nd WF. TK-120 cooling jacket - 1st and 2nd WF PE/PT-1 - 3rd West PE/PT-2 - 1st West (WF) Subtractor Module - Behind B-8 Panel DPAS - Behind B-8 Panel</p>	<ul style="list-style-type: none"> - Leak in TK-120 cooling jacket - Failed orifice in water discharge line - Loss of cooling water - Plug in TK-120 recirculation line - Power interruption - Instrument failure <p><u>REFERENCES:</u></p> <p>Drawings: EFD; H-2-28019 GPL; H-2-28373</p> <p>CBRS: Loop #; A0262 Sequence #; 1,2,3,4,5,6&7 Frequency; 6 mo</p>	<p><u>AUTOMATIC ACTION:</u> Interlock Turns Off TK-120 Pump 120-MOP-B</p> <p><u>OPERATOR ACTIONS:</u></p> <ol style="list-style-type: none"> 1. Verify that pump 120-MOP-B green READY light is ON (switch 120-SS-B to STOP, B-3). <u>IF</u> pump was running, notify supervision of interlock failure. 2. <u>IF</u> pump 120-MOP-B was NOT in operation and water was NOT valved into cooling jacket: <ol style="list-style-type: none"> a. On second floor, verify valve 455 (WF-3) is CLOSED. b. On third floor west, verify valves 120-B1 and 120-B2 are CLOSED. c. Determine TK-120 Surge Tank pressure (3rd west) from indicator on tank and record value in Control Room Logbook. d. <u>IF</u> Surge Tank pressure is above 10 psi and alarm does not clear, notify supervision of possible instrument failure. 3. <u>IF</u> pump 120-MOP-B was in operation: <ol style="list-style-type: none"> a. On third floor west, verify valves 120-B1, 120-B2, 120-B3 and 120-ST are OPEN and determine TK-120 Surge Tank pressure from indicator on tank. b. Close valve 455 (WF-3) and restart pump 120-MOP-B (120-SS-B to "START") and monitor Surge Tank Reading. c. <u>IF</u> Surge Tank pressure is above 10 psi and alarm does not clear, notify supervision of possible instrument failure and end all operations involving TK-120. d. <u>IF</u> Surge Tank pressure remains below 10 psi, correct cause of water pressure loss and continue operations. 4. <u>IF</u> pump 120 runs and alarm clears: <ol style="list-style-type: none"> a. Verify valves 262 (WG-1), 428 (WC-3), 429 (WC-3) and 485 (WG-3) are CLOSED. b. Monitor TK-120 WF (Chart 50, B-2) for 15 minutes. c. <u>IF</u> TK-120 level rises go to step 5. d. <u>IF</u> TK-120 level remains constant, open valve 455 (WF-3). e. <u>IF</u> low DP alarm activates, throttle valve 455 (WF-3) and restart operations. Notify supervision of possible orifice failure. 5. Test for Cooling Jacket leak: <ol style="list-style-type: none"> a. Record Surge Tank pressure. b. Close valves 120-B1 and 120-B2. c. Monitor pressure, pressure decrease indicates either valve 455 is leaking or cooling jacket leak. Step 4 may be repeated for longer than 15 minutes to make this determination.

Attachment 3 - RESPONSES TO PANEL B-2 ALARMS (Cont.)
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ALARM	POSSIBLE CAUSES	RESPONSE
<p><u>D-5 AGITATOR DE-ENERGIZED</u></p> <p>Alarm is activated whenever the agitator for Tank D-5 is not energized. Monitoring circuit for this alarm passes through the control contact for the agitator. The Agitator is needed to maintain both Pu and non-Pu solids suspended in solution to prevent a solid heel from forming in the tank. Agitator is interlocked to the LO LEVEL D-5 alarm to prevent operation when the blades are not in contact with solution.</p>	<ul style="list-style-type: none"> - Agitator OFF - Tank D-5 level below 10% - Power interruption - Instrument Air Upset - Instrument Failure <p><u>REFERENCES:</u></p> <p>Drawings: EFD; H-2-80102</p> <p>CBRS: Loop #; A0076 Sequence #; 7 & 8 Frequency; 6 mo</p>	<p><u>AUTOMATIC ACTION:</u> None</p> <p><u>OPERATOR ACTIONS:</u></p> <ol style="list-style-type: none"> 1. Determine present Tank D-5 level from control room indicator (WFI-D5, B-4). 2. <u>IF</u> level is near or below 10 %, additional actions will be adequately covered during normal plant surveillance activities. 3. <u>IF</u> level is greater than 12 %, review Tank D-5 recorder for trends (241-ZA instrument panel): <ol style="list-style-type: none"> a. <u>IF</u> level since last surveillance are near or below 10%, no additional actions required. b. In 241-Z, above Tank D-5, press START button for the D-5 agitator. c. <u>IF</u> agitator red START button remains lit, no additional actions required. d. <u>IF</u> agitator green STOP button remains lit or no lights are lit, check the D-5 agitator breaker in the 291-Z switch gear room. e. Notify supervision and request maintenance support to correct equipment deficiencies.

Attachment 3 - RESPONSES TO PANEL B-2 ALARMS (Cont.)
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ALARM	POSSIBLE CAUSES	RESPONSE
<p><u>ALARM BUILDING 241-Z</u></p> <p>COMMON ALARM for the annunciator panel above the 241-ZA instrument panel. These alarms deal with 241-Z area and 2904-ZA building. Due to their nature, a timely response is needed to determine alarming condition and initiate response.</p>	<p>- See Responses</p> <p><u>REFERENCES:</u> NA</p>	<p><u>AUTOMATIC ACTION:</u> None</p> <p><u>OPERATOR ACTIONS:</u></p> <ol style="list-style-type: none"> 1. Report to 241-ZA alarm panel and respond to flashing alarm per ZO-101-800. 2. The following is a summary of possible alarms on the 241-ZA alarm panel: <ul style="list-style-type: none"> - High Weight Factor (tank level) alarms for 241-Z waste sump and chemical storage tanks. - Low Weight Factor (tank level) alarms for 241-Z waste sump and chemical storage tanks. - TK-7 overflow tank and 241-Z pit sump moisture detection. - 2904-ZA OLAM monitoring for power failure, equipment malfunction and High alpha contamination count in the Z-20 crib effluent stream.

Date Received: 10-4-93 CW INFORMATION RELEASE REQUEST Reference: WHC-CM-3-4

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