CATEGORY 1

RESIDUAL HEAT REMOVAL ALTERNATIVES

REQUIREMENTS:

NONE.

INDEPENDENT TECHNICAL REVIEW

Disciplines	NPPT	RO	RE/QNE	CH	RS	I&C	M&ES
Required:	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[X]

Unit 1 Review Required: [ ] YES [X] NO

Special Reviews: DEOP Coordinator.

PLANT OPERATIONS REVIEW COMMITTEE (PORC):

PORC REQUIRED: [X] YES* [ ] NO

* PORC required for changes to actions impacting jumper/bypass installation or removal

APPROVAL AUTHORITY:

Station Manager (SM), or designee (PORC Required)
Shift Operations Superintendent (SOS), or designee (PORC NOT required)

POST PERFORMANCE REVIEWS:

NONE.

RESIDUAL HEAT REMOVAL ALTERNATIVES

A. SYMPTOMS:

1. Shutdown Cooling (SDC) Heat Exchanger inlet high temperature alarm (350°F) on Panel 902(3)-4.

2. Reactor Water Cleanup (RWCU) System area temperature alarm on the Area Leak Detection System.

3. SDC Pump Trip alarm on Panel 902(3)-4.

4. Undesirable change in reactor water temperature cooldown rate as shown on the recirculation water temperature recorder or process computer.

5. Unexpected rise in reactor pressure.

6. Unexpected rise in reactor vessel metal temperature.

7. Normal reactor cooldown methods are NOT available.

B. AUTOMATIC ACTIONS:

1. SDC Pump(s) will trip under one of the following conditions:

   a. SDC Pump suction temperature $\geq$ 350°F (setpoint 339°F rising).

   b. SDC Pump suction pressure $\leq$ 4 psig for 7.5 seconds $\pm$ 2.5 seconds.

2. IF Reactor Recirculation loop temperature rises above 350°F (Analytical Limit) setpoint 339°F OR IF Reactor Water level drops below zero (0) inches, (setpoint + 6.02 inches), THEN the following SDC System valves will automatically close:

   a. MO 2(3)-1001-1A, INLET ISOL VLV.

   b. MO 2(3)-1001-1B, INLET ISOL VLV.

   c. MO 2(3)-1001-2A, 2(3)A PP SUCT VLV.

   d. MO 2(3)-1001-2B, 2(3)B PP SUCT VLV.

   e. MO 2(3)-1001-2C, 2(3)C PP SUCT VLV.

   f. MO 2(3)-1001-4A, 2(3)A PP DISCH VLV.

   g. MO 2(3)-1001-4B, 2(3)B PP DISCH VLV.

   h. MO 2(3)-1001-4C, 2(3)C PP DISCH VLV.

   i. MO 2(3)-1001-5A, OUTLET ISOL VLV.

   j. MO 2(3)-1001-5B, OUTLET ISOL VLV.

C. IMMEDIATE OPERATOR ACTIONS:

NONE.

D. SUBSEQUENT OPERATOR ACTIONS:

NOTE

1. IF SDC is lost (partially or completely) AND operation is required (Mode 3, 4 or 5), THEN evaluate the appropriate Tech Spec LCO AND perform the REQUIRED ACTIONS:

   - Section 3.4.7 (Mode 3)
   - Section 3.4.8 (Mode 4)
   - Section 3.6.1.1 (if loss of SDC causes the Unit to enter Mode 3)
   - Section 3.9.8 (Mode 5)
   - Section 3.9.9 (Mode 5)

2. The Tech Spec requirements (listed above) are applicable throughout performance of this procedure

3. This procedure can be used to satisfy REQUIRED ACTIONS of LCO for Tech Specs 3.4.7, 3.4.8, 3.9.8 or 3.9.9. WHEN choosing the heat removal alternative, THEN consideration should be given to the alternative's heat removal capability (i.e. one loop of SDC will remove approximately 8 MWth, while RWCU will remove approximately 10 MWth).

1. Verify Pressure/Temperature monitoring requirements per Tech Spec 3.4.9 have been initiated.

2. IF Mode 4 can NOT be established/maintained, OR an uncontrolled RCS temperature increase approaching 212°F occurs, THEN review EP-AA-111, Emergency Classification and Protective Action Recommendations.

   - IF conditions of an Emergency Action Level are met, THEN declare Emergency Classification Level AND implement required notifications per EP-AA-114, Notifications.

3. Initiate actions to secure any temporary openings in secondary containment per DAP 07-44. (W-12)

D. 4. IF in Mode 5 with the Reactor Cavity flooded, THEN go to Step D.7, OTHERWISE continue with Step D.5.

5. Use one or more of the following Decay Heat Removal alternatives as directed by the Unit Supervisor to control reactor water temperature/pressure:

a. SDC System if available. (Each SDC loop will remove 8 MWth.)

(1) Place an additional SDC loop in service.

(2) Raise RBCCW flow rate by throttling open MO 2(3)-3704, RBCCW OUTLET VLV.

(3) Raise SDC flow rate by throttling open MO 2(3)-1001-4A(B), 2(3)A(B) PP DISCH VLV.

(4) Start additional SDC Pump to raise circulation in the vessel.

NOTE

1. IF Recirc loop temperature is above the isolation setpoint, THEN the red "TRIP" light will be on.

2. IF Recirc loop temperature is below the isolation reset (≤ 333°F), THEN the red "trip" light on signifies that the temperature element has failed.

(5) IF SDC isolated due to two OR more failed Reactor Recirculation loop temperature element as indicated on any of the following, THEN perform Attachment A, Install/Remove 350°F Recirc Temperature Isolation Bypass.

- 2(3)-260-13A in back of Panel 902(3)-18.
- 2(3)-260-13B in back of Panel 902(3)-18.
- 2(3)-260-8E at Panel 902(3)-21.
- 2(3)-260-8F at Panel 902(3)-21.

NOTE

1. The Turbine Bypass valves will automatically close when the Main Condenser vacuum drops below seven (7) inHg.

2. IF Steam Jet Air Ejector System is in service, THEN Turbine Bypass valves should be closed WHEN reactor water temperature is at approximately 350°F.

3. IF Mechanical Vacuum Pump is in service, THEN Turbine Bypass valves should be closed WHEN reactor water temperature is approximately 300°F.

4. At 300°F, reactor pressure will NOT be adequate to maintain Turbine Seal Steam System operation.

D. 5. b. Main Steam Turbine Bypass Valves. (Each Main Steam Turbine Bypass Valve will remove up to 112 MWth.)

(1) Maintain a maximum cooldown rate of 100°F in any one hour period using the Bypass Valve opening Jack per DGP 02-01 (Tech Spec Section 3.4.9).

(2) Maintain reactor water level using Feedwater and Condensate Systems (DGP 02-01).

(3) IF Steam Jet Air Ejector System is in service, THEN close the turbine bypass valve(s) WHEN reactor water temperature is approximately 350°F (approximately 125 psig).

(4) IF Steam Jet Air Ejector System is NOT in service, THEN close the turbine bypass valve(s) when reactor water temperature is approximately 300°F.

(5) WHEN reactor water temperature drops to 300°F, THEN open the condenser vacuum breaker using MO 2(3)-4901, TURB VACUUM BKR.

D. 5. c. RWCU System (approximately 10 MWth):

(1) Verify RWCU System is in service, OR place RWCU System in service per DOP 1200-01 OR DOP 1200-03, as applicable.

(2) Raise RWCU System flow rate to maximize the heat removal rate.

(3) IF additional heat removal from the vessel is necessary, THEN use RWCU System in blowdown mode per DOP 1200-02, while maintaining reactor water level with Feedwater, Condensate, OR CRD System.

d. Control Rod Drive System.

(1) Raise CRD cooling water flow rate to reduce reactor water temperature.

e. Main Steam Line Drain Valves.

(1) Open the following MSL Drain valves as necessary to reduce reactor pressure and temperature:

- MO 2(3)-220-1, U2(3) MN STM LINES INBD DRN VLV.
- MO 2(3)-220-2, U2(3) MN STM LINES OTBD DRN VLV.
- MO 2(3)-220-4, U2(3) MN STM LINES DRN TO CDSR SV.

f. Unit House Loads. (Unit house loads will remove approximately 126 MWth.)

(1) Maximize operation of the following systems as applicable:

- Steam Jet Air Ejector System.
- Gland Seal Steam System.
- Max Recycle Concentrator Reboiler.

D. 6. IF the above alternatives are NOT sufficient/available to control reactor water temperature/pressure, THEN use one or more of the following ECCS alternatives as directed by the Unit Supervisor to control reactor water temperature/pressure:

a. Isolation Condenser System. (Isolation Condenser System will remove up to 74 MWth.)

(1) Place Isolation Condenser System in service (DOP 1300-03).

b. High Pressure Coolant Injection (HPCI) System. (HPCI will remove up to 37 MWth.)

(1) IF reactor pressure is above 90 psig, THEN initiate HPCI System in pressure control mode (DOP 2300-03).

NOTE

The Suppression Pool water level should be above six (6) feet to ensure exhausted steam from the Electromatic Relief Valves is condensed in the Suppression Pool water.

c. Electromatic Relief Valves. (Each Electromatic Relief Valve will remove approximately 140 MWth.)

(1) Verify Suppression Pool water level is > 6 feet.

(2) Place LPCI in Suppression Pool cooling (DOP 1500-02).

(3) Open one or more Electromatic Relief Valve(s) as necessary to reduce reactor pressure/temperature, while maintaining the cooldown rate below 100°F/hr.

(4) Alternate opening of Electromatic Relief Valve(s) at five (5) minute intervals, in the following sequence to minimize local torus water heating when possible: A, C, E, D, B.

D. 6. c. (5) Monitor Suppression Pool water temperature using one or more of the following:

- Recorders TIRS 2(3)-1640-200A, SUPPRESSION POOL TEMP MONITOR, AND TIRS 2(3)-1640-200B, SUPPRESSION POOL TEMP MONITOR, on back Panel 902(3)-36 (will indicate the torus local and bulk water temperature).

- recorder TR 2(3)-1641-9, TORUS BULK TEMP, on PANEL 902(3)-3.

- Computer points T257/T258 (T357/T358) Suppression Pool water temperature.

(6) IF Suppression Pool water temperature exceeds 95°F, THEN enter the following procedures:

- DEOP 0200-01, Primary Containment Control.

- DOS 1600-20, Suppression Pool Temperature Monitoring.

d. IF all other attempts to maintain coolant temperature < 212°F have failed, THEN as directed by Unit Supervisor, perform DOP 1000-07, Alternate Shutdown Cooling.

D. 7. IF in Mode 5 with the Reactor Cavity flooded, THEN use one or more of the following Decay Heat removal alternatives as directed by the Unit Supervisor to control reactor water temperature:

a. IF required, THEN enter DOA 1900-01, Loss Of Fuel Pool Cooling, concurrently.

b. SDC System, if available.

(1) Place an additional SDC loop in service.

(2) Raise RBCCW flow rate by throttling open MO 2(3)-3704, RBCCW OUTLET VLV.

(3) Raise SDC flow rate by throttling open MO 2(3)-1001-4A(B)(C), 2(3)A(B)(C) PP DISCH VLV.

NOTE

1. IF Recirc loop temperature is above the isolation setpoint, THEN the red "TRIP" light will be on.

2. IF Recirc loop temperature is below the isolation reset (≤ 333°F), THEN the red "trip" light on signifies that the temperature element has failed.

(4) IF SDC isolated due to two OR more failed Reactor Recirculation loop temperature element as indicated on any of the following, THEN perform Attachment A, Install/Remove 350°F Recirc Temperature Isolation Bypass.

- 2(3)-260-13A in back of Panel 902(3)-18.
- 2(3)-260-13B in back of Panel 902(3)-18.
- 2(3)-260-8E at Panel 902(3)-21.
- 2(3)-260-8F at Panel 902(3)-21.

D. 7. c. Reactor Water Cleanup (RWCU) System.

(1) Verify RWCU System is in service, OR place RWCU System in service (DOP 1200-01).

(a) Raise RWCU System flow rate to maximize the heat removal rate.

(2) Initiate an Action Request to bypass the Regenerative Heat Exchangers.

(3) Provide additional mixing from the Reactor Recirc system if available.

(4) IF additional heat removal from the vessel is necessary, THEN use RWCU System in blowdown mode per DOP 1200-02, while maintaining reactor water level with Condensate, CRD System, Condensate Transfer and Clean Demin water via hoses OR Control Cavity, Dryer/Separator Storage Pit and Fuel Pool Level per DOP 1900-03.

d. Cross Cooling from Fuel Pool Cooling or SDC in the Fuel Pool Cooling Mode.

(1) Using natural circulation with the Fuel Pool Gates removed.

(2) IF necessary, THEN remove Fuel Pool Gates (DFP 0800-06).

(3) To aid the natural circulation, forced flow between the Fuel Pool and Reactor Cavity can be added (DFP 0800-48).

CAUTION

Before realigning the following systems to the Reactor, consideration must be given to the Fuel Pool Decay heat Load and Temperature.

e. Realign SDC in Fuel Pool Cooling Mode back to the Reactor Cavity:

(1) Secure SDC to Fuel Pool Cooling.

(2) Close valves:

(a) 2(3)-1901-20, U2 FUEL POOL SKIMMER SURGE TK TO S/D CLG OUTLET VLV (U3 FUEL POOL SKIMMER SURGE TK TO SHUTDN CLG OUTLET SV).

(b) 2(3)-1901-64, U2(3) SHUTDN CLG SYS RETURN TO FUEL POOL SYS ISOL VLV.

D. 7. e. (3) Rack-in the breaker on the loop to be started:

(a) Loop 2A:

- 250 VDC MCC #2A, Cubicle E2,
  MO 2-1001-2A, U2 SDC PUMP 2A SUCTION MOV.

AND

- 250 VDC MCC #2A, Cubicle I1,
  MO 2-1001-4A, U2 SDC HX 2A OUTLET MOV.

(b) Loop 2B:

- 250 VDC MCC #2A, Cubicle F1,
  MO 2-1001-2B, U2 SDC PUMP 2B SUCTION MOV.

AND

- 250 VDC MCC #2A, Cubicle I2,
  MO 2-1001-4B, U2 SDC HX 2B OUTLET MOV.

(c) Loop 2C:

- 250 VDC MCC #2A, Cubicle F2,
  MO 2-1001-2C, U2 SDC PUMP 2C SUCTION MOV.

AND

- 250 VDC MCC #2A, Cubicle J2,
  MO 2-1001-4C, U2 SDC HX 2C OUTLET MOV.

(d) Loop 3A:

- 250 VDC MCC #3A, Cubicle E2,
  MO 3-1001-2A, U3 SDC PUMP 3A SUCTION MOV.

AND

- 250 VDC MCC #3A, Cubicle I1,
  MO 3-1001-4A, U3 SDC HX 3A OUTLET MOV.

(e) Loop 3B:

- 250 VDC MCC #3A, Cubicle F1,
  MO 3-1001-2B, U3 SDC PUMP 3B SUCTION MOV.

AND

- 250 VDC MCC #3A, Cubicle I2,
  MO 3-1001-4B, U3 SDC HX 3B OUTLET MOV.

(f) Loop 3C:

- 250 VDC MCC #3A, Cubicle F2,
  MO 3-1001-2C, U3 SDC PUMP 3C SUCTION
  HEADER MOV.

AND

- 250 VDC MCC #3A, Cubicle J2,
  MO 3-1001-4C, U3 SDC HX 3C OUTLET MOV.

D. 7. e. (4) Open MO 2(3)-1001-2A(B)(C), 2(3)A(B)(C) PP SUCT VLV.

(5) Start 2(3)A(B)(C) SDC Pump.

(6) Throttle open valve MO 2(3)-1001-4A(B)(C), 2A(B)(C) PP DISCH VLV, to the desired flow.

(7) Adjust RBCCW flow to the SDC Heat Exchanger as necessary by throttling MO 2(3)-3704, RBCCW OUTLET VLV.

(8) Place an Out-of-Service on valves 2(3)-1901-20, U2 FUEL POOL SKIMMER SURGE TK TO S/D CLG OUTLET VLV (U3 FUEL POOL SKIMMER SURGE TK TO SHUTDN CLG OUTLET SV), AND 2(3)-1901-64, U2(3) SHUTDN CLG SYS RETURN TO FUEL POOL SYS ISOL VLV, AND hang an Information Card on the Reactor Mode Switch to correct the valve alignment PRIOR to RPV Hydro, Mode 2, or Mode 3 operation.

f. Align Fuel Pool Cooling system to the Reactor Cavity using DOP 1900-01 Step G.8.

E. USER REFERENCES:

1. Technical Specifications:

a. Section 3.4.9, RCS Pressure and Temperature (P/T) Limits.

b. Section 3.4.7, Shutdown Cooling (SDC) System – Hot Shutdown.

c. Section 3.4.8, Shutdown Cooling (SDC) System – Cold Shutdown.

d. Section 3.6.1.1, Primary Containment.

e. Section 3.6.1.3, Primary Containment Isolation Valves (PCIVs).

f. Section 3.9.8, Shutdown Cooling (SDC) – High Water Level.

g. Section 3.9.9, Shutdown Cooling (SDC) – Low Water Level.

h. Section 3.3.6.1, Primary Containment Isolation Instrumentation.

2. Revised Updated Final Safety Analysis Report (RUFSAR):

a. RUFSAR Section 5.4.7, Reactor Shutdown Cooling System.

E. 3. Procedures:

a. CC-AA-112, Temporary Configuration Changes.

b. DAP 07-44, Control Of Temporary Openings In Secondary Containment During Performance Of Work Packages, Surveillances, Or Other Procedures.

c. DEOP 0200-01, Primary Containment Control.

d. DFP 0800-06, Spent Fuel Pool To Reactor Gate Removal And Installation.

e. DFP 0800-48, Spent Fuel Pool Cooling/Reactor Cavity Mixing To Support Decay Heat Removal.

f. DGP 02-01, Unit Shutdown.

g. DOA 1900-01, Loss Of Fuel Pool Cooling.

h. DOP 1000-03, Shutdown Cooling Mode of Operation.

i. DOP 1000-07, Alternate Shutdown Cooling.

j. DOP 1200-01, RWCU Operation During Startup and Shutdown.

k. DOP 1200-02, RWCU System Blowdown.

l. DOP 1200-03, RWCU System Operation with Reactor Plant at Pressure.

m. DOP 1300-03, Manual Operation of the Isolation Condenser.

n. DOP 1500-02, Torus Water Cooling Mode of Low Pressure Coolant Injection System.

o. DOP 1900-03, Reactor Cavity, Dryer Separator Storage Pit And Fuel Pool Level Control.

p. DOP 2300-03, High Pressure Coolant Injection System Manual Startup and Operation.

q. DOS 1600-20, Suppression Pool Temperature Monitoring.

r. EP-AA-111, Emergency Classification and Protective Action Recommendations.

s. EP-AA-114, Notifications.

t. HU-AA-101, Human Performance Tools and Verification Practices.

E. 4. Prints:

a. M-12 (M-345), Main Steam Piping.

b. M-20 (M-353), Reactor Building Cooling Water Piping.

c. M-26 (M-357), Nuclear Boiler & Reactor Recirculation Piping.

d. M-30 (M-361), Reactor Water Cleanup Piping, Sheet 1.

e. M-32 (M-363), Shutdown Reactor Cooling Piping.

f. M-39 (M-369), Reactor Building Equipment Drains.

g. M-48 (M-371), Reactor Water Cleanup Piping, Sheet 2.

h. 12E-2516 (12E-3516), Relaying & Metering & Schematic Diagram, Reactor Shutdown Cooling System, 4160 V Pumps 1002A, 1002B & 1002C.

i. 12E-2517 (12E-3517), Schematic Control Diagram, Reactor Shutdown Cooling System Pumps Control Circuits.

j. 12E-2508 (12E-3508), Schematic Diagram, Primary Containment Isolation System, Shutdown Cooling Isolation Logic, Sheet 8.

k. 12E-2491 (12E-3491), Schematic Diagram, Recirculation System Process Instrumentation Pt.2.

l. 12E-2502A (12E-3502A), Schematic Diagram, Primary Containment Isolation System, Reset Circuit.

F. DISCUSSION:

1. The heat generated in the reactor following reactor scram or reactor shutdown is composed of sensible heat and decay heat. The sensible heat is the energy associated with the elevated temperature of the reactor vessel and the internal components. The decay heat is released as the fission products decay.

During normal operating conditions, heat is lost from the reactor vessel through ambient heat losses, unit house loads and via the RWCU System Non-Regenerative Heat Exchangers.

F. 2. This procedure provides the alternatives available to shutdown the unit and maintain the reactor in cold or hot shutdown condition. Based on the availability of the following systems and reactor pressure/temperature, one or more of these alternatives may be utilized at the discretion of the Unit Supervisor.

a. Main Turbine Bypass Valves to release the steam from the reactor to the condenser and therefore direct the waste heat to the river via the Circulating Water System.

b. SDC System to provide heat removal mechanisms to bring the reactor to a cold (or Hot) shutdown condition. SDC system efficiently directs this waste heat to the river via RBCCW and Service Water Systems.

c. In the event that additional residual heat removal mechanisms are required, the Unit Supervisor should prioritize the methods to be used based on their impact on the environment.

d. The use of the Emergency Core Cooling Systems (ECCS) should always be a last resort. Therefore, priority should be given to raising the heat removal rate of the processes that are already in service. This would include:

(1) Raising the unit house load demands.

(2) Raising the SDC System flow rate.

(3) Raising Reactor Building Closed Cooling Water flow rate to the SDC System Heat Exchanger(s).

(4) Using RWCU System for a feed and bleed process.

(5) Raising CRD System cooling water flow rate.

(6) Placing Isolation Condenser System in service.

(7) Placing HPCI System in the pressure control mode operation.

(8) Opening the Electromatic Relief Valve(s).

F. 3. When the reactor cavity is flooded and the Fuel Pool Gates removed there the other systems become available for dealing with a loss of Decay Heat removal systems. Fuel Pool Cooling can be aligned to the Reactor Cavity as addressed in the UFSAR. Forced circulation can be used to help in using Fuel Pool Cooling or SDC in the Fuel Pool Cooling mode. Cross Cooling has been utilized to cool the Fuel Pool under SP 95-07-84 during D2R14 using forced circulation. Use of an Alternate Decay Heat Removal system per corporate engineering calculation and Calculation DRE 98-016, were we can cool the Reactor Cavity via natural circulation utilizing one Fuel Pool Cooling train and one SDC Train in the Fuel Pool Cooling mode.

W. WRITER'S REFERENCES:

1. INPO SOER 85-4, Loss or Degradation of Residual Heat Removal Capability in PWRs.

2. Response to INPO SOER 85-4, E.D. Eenigenburg to J. Leider, dated September 22, 1987.

3. Vendor Manual, GEK 786, Chapter 17, Shutdown Reactor Cooling System and Reactor Head Cooling System.

4. SP 88-5-66, SDC Pump Flow Verification and Check.

5. GE SIL No. 406, In-Core Instrumentation Protection.

6. INPO SOER 87-2, Inadvertent Draining of Reactor Water to Suppression Pool at BWRs.

7. W.B. Fancher letter to E.D. Eenigenburg dated June 2, 1988 and record of correspondence for letter from R. Magrow.

8. INPO SOER 82-02, Inadvertent Reactor Pressure Vessel Pressurization.

9. NRC Information Notice No. 87-50, Potential LOCA at High-Pressure and at Low-Pressure Interfaces from Fire Damage.

10. SP 95-07-84 Unit 2 Spent Fuel Pool Cooling Contingency Plan.

11. Calculation DRE 98-016, Determination of Spent Fuel Pool and Shutdown Cooling Heat Exchanger Inlet and Outlet Temperatures as Function of Decay Heat Load for Dresden Refuel Outage D3R15.

12. IGAP 959926-35-11, Revise DOA 1000-01, Residual Heat Removal Alternatives, to provide direction to secure secondary containment upon loss of decay heat removal per INPO SOER 09-1, Shutdown Safety.

ATTACHMENT A
INSTALL/REMOVE 350°F RECIRC TEMPERATURE ISOLATION BYPASS

A. Obtain Operations Shift Manager permission to install Jumper:

_____/_____ _____
Print Name / Signature Date

CAUTION

Recirculation Line Water Temperature High trip channels for SDC System Isolation are required to be operable in Modes 1, 2, and 3 per Tech Spec Table 3.3.6.1-1 Function 6.a.

B. IF Tech Spec Table 3.3.6.1-1 Function 6.a, Recirculation Line Water Temperature - High, trip is required per Tech Spec 3.3.6.1, THEN enter the appropriate Tech Spec action Statement(s).

C. Bypass Reactor Recirculation loop temperature elements as follows:

NOTE

Jumper installation is performed using Concurrent Verification (CV) in accordance with HU-AA-101, Human Performance Tools and Verification Practices.

1. Bypass all sensors to the SDC High Temperature Isolation Logic by installing a jumper from 902(3)-4 LL-8 to 902(3)-4 LL-10

   Installed By: _____

   Verified By: _____

2. Reset the Group 3 isolation using the GROUP 2&3 ISOL RESET switch at Panel 903-5. _____

3. Restart SDC (DOP 1000-03). _____

4. Initiate an Issue Report to repair the failed temperature element(s). _____

ATTACHMENT A
INSTALL/REMOVE 350°F REACTOR RECIRC TEMPERATURE ISOLATION BYPASS

C. 5. Place a TCCP Tag on each of the jumpers.

6. Place the TCCP in the Unit Turnover.

7. Record this Procedure Number in the Control Room TCCP Log as the TCCP Number and complete TCCP Log entries. _____

8. Using Figure 1(2), 12E-2508 (12E-3508) Update, draw in the location of the installed jumpers in Unit 2(3). Record TCCP No on sketch. _____

9. Staple Figure 1(2) to Drawing 12E-2508 (12E-3508) in the Critical Control Room Drawing file. _____

10. Indicate the time frame during which the temporary change may remain installed under the authority of this procedure and actions required if extension is required (CC-AA-112 TCCP Extended Installation Justification Attachment) (for example, jumpers will be installed until ready to exit Mode 4)

_____
_____
_____ _____

11. IF the TCCP must stay in effect after this procedure is completed, THEN transfer control of this TCCP to CC-AA-112. _____

ATTACHMENT A
INSTALL/REMOVE 350°F REACTOR RECIRC TEMPERATURE ISOLATION BYPASS

D. To remove the 350°F Reactor Recirc temperature isolation bypass, perform the following:

1. Obtain Operations Shift Manager permission to remove Jumper:

_____/_____ _____
Print Name / Signature Date

NOTE

Jumper removal is performed using Concurrent Verification (CV) in accordance with HU-AA-101.

2. Remove jumper and TCCP Tag from 902(3)-4 LL-8 to 902(3)-4 LL-10

Removed By: _____

Verified By: _____

3. Remove the TCCP from the Unit Turnover. _____

4. Remove Figure 1(2) from Drawing 12E-2508 (12E-3508) in the Critical Control Room Drawing file. _____

5. Update the Control Room TCCP Log and Unit Turnover to indicate TCCP Removal. _____

6. Attach this completed Attachment to Appendix A for retention _____

FIGURE 1
12E-2508 UPDATE

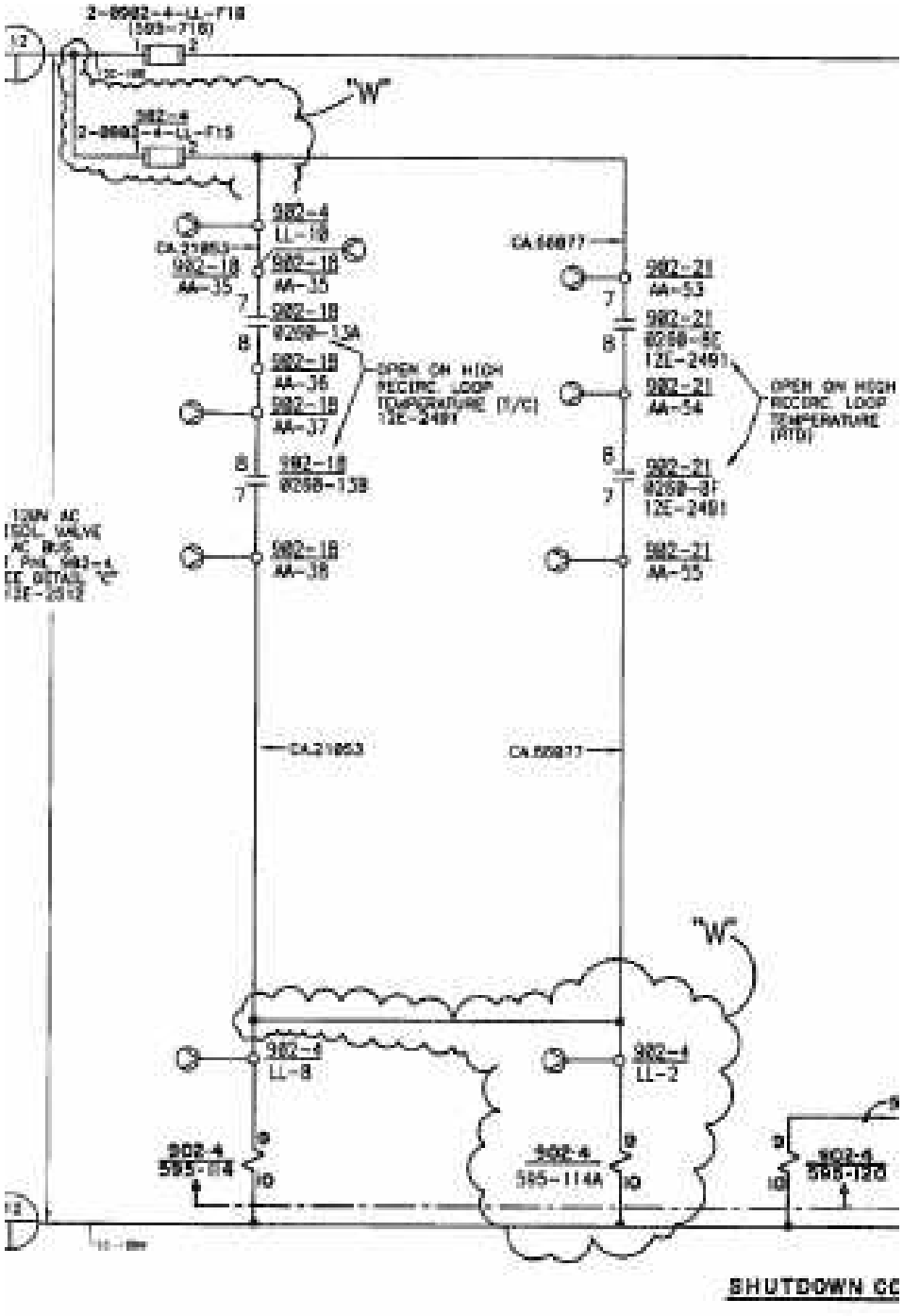

FIGURE 2
12E-3508 UPDATE