

NUCLEAR STATION PROCEDURE ROUTING

(TRANSMITTAL RECEIPT)

Register No. 72
(41) 5-19-93 RE

REMOVE: * DSSP 0100-F JWOW

INSERT: * DSSP 0100-F JWOWS
(postal procedure: please post
in the safe shutdown cart)

(Sign and return this form to the DOSR CLERK.)

I hereby acknowledge receipt of the above.

Signed _____ Date _____

270048

ZW/4940

1 of 1

9306030090 930519
PDR ADOCK 05000249
F PDR

ADD: NEE/DRSS/PEPB Encl. 1

FORM 9-2B

PROCEDURE HISTORY

Procedure Number: DSSP 0100-F Rev. No.: 05
Posted Procedure Locations: NTA ^{AP} 5/11/93 SAFE SHUTDOWN CART

Supportive References (letters, temporary change request, commitments, analysis): Safe Shutdown Report, Dresden Units 2 and 3 (Fire Protection Program Documentation Package, Volume 3, Book 1); 10 CFR 50, Appendix R; 10 CFR 50.54x; NRC Information Notice 87-50.

Subject experts or other personnel contacted: None

Description and JUSTIFICATION for procedure or change: Upgrade to the requirements of DAP 09-03. Add applicable sections and references. Complete re-write to comply with specifications of DAP 09-03 and Safe Shutdown Report, including major format change. Added attachments for actions of individual plant personnel. All original steps are included in procedure with exception of closing 3B CRD and 3B SW Pump breakers on initial configuration of Bus 34. These brkrs are closed later in procedure when (if) pumps are started. Added additional steps for:

1. U3 NSO verify Unit 3 DG start from CR if indication available.
2. Changed checking 3B CRD disch vlv to CR if indication available.
3. U3 EA to start Unit 3 DG per DSSP 0200-T2 if no auto start.
4. Incorporated commitment NRC IEN 87-50, RWCU isolation, isolate air.

Added additional instruments for local monitoring of RPV lvl/press. Changed equipment nomenclature to match in plant labeling. Provided cubicle numbers for breakers. Added procedure tracking checklist for shift engineer. Changed procedure to direct performance of attachments.

HOT SHUTDOWN PROCEDURE - PATH F

A. PURPOSE

The purpose of this procedure is to achieve hot shutdown conditions on Unit 3 directed from the Control Room using the isolation condenser, Unit 3 diesel generator and the Unit 3 electrical power train. The Control Rod Drive (CRD) pump 3B provides Unit 3 reactor makeup. Isolation condenser makeup is from Condensate Storage Tank (CST), Fire Water, or Service Water.

B. REFERENCES

DSSP 010-1, Safe Shutdown Paths for Extensive Plant Damage.

C. PREREQUISITES

DSSP 010-1 has been completed.

D. PRECAUTIONS

1. Refer to DSSP 010-1.
2. For a fire on the operating level of the Turbine Building, the instrumentation for reactor level and pressure in the Control Room may be affected. False readings may occur at the following instruments:
 - a. Fuel Zone Indicators 3-263-106A and B (-340 inches to plus 60 inches reactor vessel level).
 - b. Reactor Vessel Pressure Indicators 3-640-25A and B (0 - 1200 psi).
 - c. Narrow Range Indicators 3-640-29A and B (0 - plus 60 inches reactor vessel level).

Local instrumentation is available for determining reactor vessel level and pressure in the Reactor Building at Instrument Racks 2203-5 and -6 as well as 2203-7 and -8.

E. LIMITATIONS AND ACTIONS

Refer to DSSP 010-1.

Originator: K. Housh
Dept. Supv.: M. Korchynsky

ZDSSP/0005
ZW/4924

APPROVED

JUN 03 '92

D.O.S.R.

F. PROCEDURE

Responsibility

Actions

Unit-3 Nuclear
 Station Operator
 NSO

1. Manually scram the reactor by depressing the scram pushbuttons. Do not reset scram until a Reactor Pressure Vessel (RPV) makeup source other than CRD is available.

CAUTION

Open relief valves cause a loss of reactor vessel inventory.

Unit-3 NSO

2. Place the Automatic Depressurization System (ADS) inhibit switch to INHIBIT position.

Unit-3 NSO

3. Place the 3-203-3B, 3C, 3D, 3E Electromatic relief valves and the 3-203-3A Target Rock safety/relief valve control switches to OFF position.

Unit-3 NSO

4. Close the Main Steam Isolation Valves (MSIV's).

3-203-1A, 1B, 1C, 1D
 3-203-2A, 2B, 2C, 2D

Unit-3 NSO

5. Initiate the isolation condenser from the Control Room by opening MO 3-1301-3 Condensate Return Outboard Isolation.

Unit-3 NSO

6. VERIFY the following valve positions from the Control Room:

MO 3-1301-1	Steam Supply Inboard Isolation	OPEN
MO 3-1301-2	Steam Supply Outboard Isolation	OPEN
MO 3-1301-4	Condensate Return Inboard Isolation	OPEN
AO 3-1301-17	Vent to Main Steamline	CLOSED
AO 3-1301-20	Vent to Main Steamline	CLOSED

Responsibility

Actions

F. Unit-3
Shift Supervisor

7. Configure the 250V DC system as follows:
 - a. At Reactor Building 250V DC MCCs 3A and 3B, strip all loads EXCEPT the following isolation condenser valves:
 - (1) MO 3-1301-2
 - (2) MO 3-1301-3
 - (3) MO 3-1301-10
 - (4) MO 3-4102

Verify closed or close the breakers for the above four loads.
 - b. At Turbine Building 250V DC MCC #2, verify the following breakers are closed:
 - (1) Main Feed to RB 250V DC MCC 3A/3B.
 - (2) Main Feed from 250V Battery #2 to TB 250V DC MCC #2.

CAUTION

A fire in the 2/3 diesel generator room may cause the control fuses for valves M03-1301-1 and -4 in panel 2203-75 to blow. The only indication of this condition is the loss of control and indication of the M03-1301-1 and -4 valves from the Control Room with MCC 38-1 energized.

Outside High Voltage
Operator (HVO)

8. Place the isolation switch for valves MO 3-1301-1 and -4 in panel 2203-75, located in the Unit 3 TIP Room, in the 'ISOL' position.

Outside HVO

9. IF the Unit 3 NSO has lost indication of valve position or operability of MO 3-1301-1 and -4 valves with MCC 38-1 energized, THEN replace the fuses in Panel 2203-75, located in the Unit-3 TIP Room with the fuses stored in the safe shutdown box located by MCC 38-1.

Responsibility

Actions

NOTE

Makeup to the shell side of the isolation condenser must be initiated within 20 minutes of isolation condenser operation.

F. Unit-3 NSO

10. While monitoring reactor vessel level and pressure from the Control Room using multiple indication, throttle MO 3-1301-3 from the Control Room to:

a. Minimize shrinkage and loss of reactor vessel inventory through open safety/relief valve.

b. Establish and maintain a cooldown rate of 15°F/hour or less (use DSSP 100-T11, Cooldown Table).

Center Desk NSO

11. IF Control Room reactor pressure and level indication is unavailable, THEN monitor reactor pressure and level instrumentation locally at Instrument Racks 2203-5 or 2203-6 on Instruments PI 3-263-60A or -60B and LITS 3-263-59A or 59B. Record pressure and level at 10 minute intervals using DSSP 100-T11.

Responsibility

Actions

F. Unit-3 Equipment
Attendant (EA)

12. Configure MCC 39-2 located on the Turbine Building second floor by Standby Gas Treatment as follows:
- a. Strip all loads from MCC 39-2 by racking out all of the breakers on the MCC EXCEPT those listed in F.12.b.
 - b. Verify closed or close the feed breaker for the following MCC 39-2 equipment:

<u>Equipment</u>	<u>Cubicle</u>
3B Condensate Transfer Pump	A-5
Unit-3 Diesel Generator Cooling Water Pump	C-2
Unit-3 Diesel Generator Fuel Oil Pump	E-1
Unit-3 Diesel Generator Vent Fan	E-3

Outside HVO

13. Configure MCC 38-1 and MCC 38-4 located on the Reactor Building Ground Floor by Hydraulic Control Units as follows:
- a. Strip all loads from MCC 38-1 and MCC 38-4 by racking out all of the breakers on the MCC EXCEPT those listed in F.13.b.
 - b. Verify closed or close the feed breaker for the following equipment:

MCC 38-1

<u>Equipment</u>	<u>Cubicle</u>
MO 3-1301-4	H-1
MO 3-1301-1	H-2

Responsibility

Actions

F.

Unit-3
Shift Supervisor

Unit-3
Shift Supervisor

14. Configure Bus 39 and Bus 38 Reactor Building third floor south as follows:

- a. Pull all control fuses in Bus 39 cubicles F-1 and F-2.
- b. Strip the following equipment loads from Bus 39 by normally tripping the equipment feed breakers.

Bus 39 (Reactor Building- Third Floor by Fuel Pool Cooling)

<u>Equipment</u>	<u>Cubicle</u>
3C D/W Cooler Blower	A-1
3D D/W Cooler Blower	A-2
3E D/W Cooler Blower	A-3
MCC 39-5/-6 Feed	A-4
3B S. Turb. Bldg. Vent Fan	B-1
3B Rx Bldg. Vent Fan	B-2
3B Rx Bldg. Exh. Fan	B-3
3C Rx Bldg. Exh. Fan	B-4
3B Recirc MG Vent Fan	C-1
MCC 39-3 Feed	C-2
MCC 39-7 Feed	C-3
MCC 26-4 Reserve Feed	C-4
3B FPC Pump	D-1
MCC 39-1 Feed	D-2
ESS UPS Main Feed	D-3

Unit-3
Shift Supervisor

c. Verify closed or close the following Bus 39 breakers:

<u>Equipment</u>	<u>Cubicle</u>
Bus 39 Feed to MCC 39-2	D-4
Main Feed from Bus 34-1	E-2

Responsibility

Actions

NOTE

Maintenance handle and ratchet for manually closing the 480V Bus breakers are located in the safe shutdown Equipment Box at Bus 38.

F. Unit-3 NSO

14. d. From the control room verify tripped or trip Bus 33-1 to Bus 38 feed breakers.

Unit-3
 Shift Supervisor

e. Verify that the Bus 33-1 feed breaker to Bus 38 is tripped at Bus 38 cubicle B-2.

Unit-3
 Shift Supervisor

f. Pull all of the control fuses located in Bus 38 Cubicles A-1 and A-2.

Unit-3
 Shift Supervisor

g. Open disconnect switches TS-382-1 located on Bus 38 Cubicle B-1.

Unit-3
 Shift Supervisor

h. Strip the following equipment loads from Bus 38 by manually tripping the equipment feed breakers.

<u>Equipment</u>	<u>Cubicle</u>
3A Fuel Pool Cooling Pump	C-1
3A Rx Bldg Vent Fan	C-2
3C Rx Bldg Vent Fan	C-3
U3 RWCU Demin Aux Pump	C-4
MCC 38-2	D-2
3A Rx Bldg Exhaust Fan	D-3
MCC 38-3	D-4
MCC 38-7	E-1
3A S Turb Bldg Vent Fan	E-3
3A Recirc MG Vent Fan	E-4
3A D/W Cooler Blower	F-1
3B D/W Cooler Blower	F-2
3F D/W Cooler Blower	F-3
3G D/W Cooler Blower	F-4

Unit-3
 Shift Supervisor

i. Verify closed, or manually close the following Bus 38 breakers:

<u>Equipment</u>	<u>Cubicle</u>
MCC 38-1/38-4	D-1
Bus tie 38-39	B-3

Responsibility

Actions

F. Unit-3
Shift Supervisor

14. j. Manually close the following Bus 39 breakers:

Equipment

Cubicle

Bus tie 38-39

E-3

NOTE

Maintenance handle and ratchet for manually closing the 480V Bus breakers are located in the safe shutdown equipment box at Bus 38.

Unit-3 NSO

15. Configure Bus 34-1 as follows:

a. Strip Bus 34-1 from the Control Room by placing the control switches for the following components to pull-to-lock:

3C Low Pressure Coolant Injection (LPCI) Pump
3D LPCI Pump
3B Shutdown Cooling (SDC) pump
3C SDC Pump
3C Core Spray Pump
3B RWCU Main Pump
3B Reactor Building Closed Cooling Water (RBCCW) Pump
2/3 RBCCW Pump
Bus tie 34-1 to 24-1

Unit-3 NSO

b. Verified closed or close, from the control room, the Bus 34-1 to Bus 39 bus tie breaker.

Unit-3
Shift Supervisor

c. Verify locally the proper Bus 34-1 configuration.

16. IF offsite power is not available, THEN assure emergency power as follows:

Unit-3 EA

a. Verify auto start of the Unit-3 Diesel Generator.

Unit-3
Shift Supervisor

b. Verify feed breakers from Unit-3 Diesel Generator to Bus 34-1 are closed.

<u>Responsibility</u>	<u>Actions</u>
F. Unit-3 EA	16. c. Verify the Unit-3 Diesel Generator vent fan has started.
Unit-3 EA	d. Verify Unit-3 Diesel Generator cooling water pump flow on FI 3-3941-34A, located outside the Unit-3 Diesel Generator Room.
Unit-3 NSO	17. Configure Bus 34 as follows: a. <u>IF</u> offsite power is not available, <u>THEN</u> verify tripped, or trip, from the Control Room, the Unit Aux Transformer 31 and Reserve Aux Transformer 32 feed breakers to Bus 34.
Unit-3 NSO	b. Strip Bus 34 from the Control Room by placing the control switches for the following components to PULL-TO-LOCK position: 480V Bus 37 480V Bus 36 3C Containment Cooling Service Water (CCSW) Pump 3D CCSW Pump 3C Condensate/Booster Pump 3D Condensate/Booster Pump 3C Circ Water Pump 2/3 Service Water Pump 480V Bus 30
Unit-3 NSO	c. Verify closed, or close, from the control room, the Bus 34 feed breakers for the following equipment: 3B Control Rod Drive Feed Pump 3B Service Water Pump
Unit-3 NSO	d. Verify closed or close Bus 34 to Bus 34-1 bus tie breakers from the Control Room.
Unit-3 Shift Supervisor	e. Verify proper bus 34 at configuration locally.
	18. Maintain the isolation condenser shell side level as follows:

<u>Responsibility</u>	<u>Actions</u>
F. Unit-3 NSO	18. a. Start Condensate Transfer Pump 3B from the Control Room.
Unit-3 NSO	b. Open MO 3-1301-10, Isolation Condenser Fill Inlet Valve, from the Control Room to raise isolation condenser shell side level as required using Control Room Isolation Condenser level indication.
Unit-3 EA	c. <u>IF</u> Control Room Isolation Condenser level indication is unavailable, <u>THEN</u> monitor Isolation Condenser level locally by opening Isolation valves 3-1300-202, 3-1300-203, 3-1301-39, 3-1301-40.

NOTE

Isolation Condenser water level should be maintained within sight glass viewing range.

Unit-3 NSO	d. Throttle M03-1301-10 as necessary to maintain isolation condenser level.
Outside HVO	19. Provide reactor level makeup as follows: a. Align valves for alternate cooling of CRD Pump 3B from service water as follows: (1) Verify the following valves open: 2/3-3999-348 - CRD pump alternate cooling supply from service water (west of MCC 27-1). 3-3999-359 - CRD pump alternate cooling discharge to service water (south of the EHC Reservoir).

Responsibility

Actions

NOTE

The valves identified in Steps F.19.a. 2, 3 and 4 are located at the foot of the stairs leading to the CRD pump room.

- F. Outside HVO (Cont'd)
19. a. (2) Unlock and close the following valves:
- 3-3899-205 - CRD pump normal cooling return from Turbine Building Closed Cooling Water (TBCCW)
 - 3-3899-204 - CRD pump normal cooling return to TBCCW
- (3) Verify the following valves closed:
- 3-3999-360 - CRD pump alternate cooling supply from service water blowdown
 - 3-3999-361 - CRD pump alternate cooling discharge to service water blowdown
- (4) Unlock and open the following valves:
- 3-3999-357 - CRD pump alternate cooling inlet from service water
 - 3-3999-349 - CRD pump alternate cooling inlet from service water.
 - 3-3999-348 - CRD pump alternate cooling outlet to service water.

Responsibility

Actions

F. Outside HVO (Cont'd)

19. a. (4) 3-3999-358 - CRD pump alternate cooling outlet to service water.
- b. From the Control Room, close CRD Pump Discharge Valve MO 3-301-2B.
- c. At CRD Pump 3B, verify the Discharge Valve, MO 3-301-2B is closed.
- d. IF valve MO 3-301-2B is not closed, THEN perform the following steps:
- (1) Rack out breaker at MCC 36-1 Cubicle H6, 3B CRD Pump Discharge Valve MO 3-301-2B.
- (2) Manually close MO 3-301-2B at CRD Pump 3B Discharge
- (3) Start CRD Pump 3B from the Control Room.
- (4) Manually open MO 3-301-2B. Monitor AMP Meter on Local Panel 3252-76 located on the wall north of the CRD pump, and ensure pump motor current does not exceed 34 AMPS. Proceed with Step 19G.
- e. Start 3B CRD Pump from the Control Room.
- f. Manually open MO 3-301-2B. Monitor amp meter on local panel 3252-76, located on the wall north of the CRD pump, and ensure pump motor current does not exceed 34 amps.
- g. Manually throttle drive water inlet valve 3-0301-9A or B, located on the Reactor Building ground floor by the drywell personnel access, as directed by the Unit-3 NSO (or Center Desk NSO, if Control Room instrumentation is not available) to maintain reactor level at +8 to +40 inches.

Unit-3 NSO

Outside HVO

Unit 3 NSO

Outside HVO

Unit-3 NSO

Outside HVO

Unit-3 EA

Responsibility

Actions

CAUTION

Service water system must be initiated within 1 1/2 hours after start of CRD pump.

F. Outside HVO

20. IF no service water pumps are running, THEN close the following valves to preclude runout of a service water pump runout.

System

Valve

Unit 2 Turbine Building Closed Cooling Water (TBCCW) Heat Exchanger (HX) Outlet Isolation (located by Unit 2 HX)	2-3904-501 or 2-3904-500
--	--------------------------

Outside HVO (Cont'd)

Unit 3 TBCCW HX Outlet Isolation (located by Unit 3 TBCCW HX)	3-3904-501 or 3-3904-500
---	--------------------------

Unit 2 Turbine Oil Cooler Isolation (located at SW Discharge header south of Turbine Oil reservoir)	2-3906-500 or 2-3906-501
---	--------------------------

Unit 3 Turbine Oil Cooler Isolation (located south of Turbine Oil reservoir)	3-3906-500 or 3-3906-501
--	--------------------------

Concentrator Condenser Isolation Valves (located south of Turbine Oil reservoir)	2/3-3999-241 or 2/3-3999-240
--	------------------------------

Unit-3 NSO

21. IF no service water pumps are running, THEN start Service Water Pump 3B.

Unit-3 NSO

22. To prevent spurious HPCI operation, verify closed or close MO 3-2301-5 from the Control Room.

Responsibility

Actions

CAUTION

Automatic Reactor Water Cleanup (RWCU) isolation may not occur.

F. Outside HVO

23. IF reactor water level cannot be maintained, THEN locally verify closed or close RWCU valve MO 3-1201-2 in RWCU pipe chase (enter RWCU pipe chase from the hatch located on Reactor Building Elevator 570').

24. Continue to provide Isolation Condenser makeup.

Unit-3 NSO

a. Monitor Condensate Storage Tank (CST) level from the Control Room.

NOTE

CST level can be monitored in the Unit-2 Reactor Feed Pump Room if Control Room indication is unavailable.

Unit-3 EA

b. IF CST level falls to 12 feet, THEN open 2/3-3327-A-500 and verify open, or open, 2/3-2301-12 lower suction from 2/3 B contaminated condensate storage tank.

Unit-3 EA

c. Open 2/3-3346-500, U1A STG to CST X-TIE VLV.

Unit-3 NSO

d. IF the CSTs inventory is approaching the appropriate line on DSSP 100-T14, Minimum CST Inventory, THEN open MO 3-4102, isolation condenser fill from the fire water system to maintain isolation condenser shell side level and stop condensate transfer pump 3B.

Unit-2 EA

e. IF additional isolation condenser make-up water is required, THEN open service water valve 2-3906 in the cribhouse.

Responsibility

F. Outside HVO

Shift Control
Room Engineer

G. CHECKLISTS

None.

H. TECHNICAL SPECIFICATIONS REFERENCES

None.

Actions

25. Continue to monitor the following equipment:

- a. Diesel Generator fuel supply and transfer pump 3.
- b. Running service water pump 3B.
- c. Running diesel generator cooling water pump 3-3903B.

26. After stable hot shutdown conditions have been achieved, proceed to cold shutdown in accordance with DSSP 200-S, Shutdown Cooling Cold Shutdown Method (SDC).