

DUKE POWER COMPANY
PROCEDURE PROCESS RECORD(1) ID No. AP /3 /A /1700 /11Change(s) -0- 3 to708 IncorporatedPREPARATION(2) STATION OCONEE NUCLEAR STATION**MASTER FILE****SUPERSEDED**(3) PROCEDURE TITLE LOSS OF POWER**INFORMATION ONLY**(4) PREPARED BY Ronnie Lutz DATE 12-17-87(5) REVIEWED BY Ned Edwards DATE 1/20/88Cross-Disciplinary Review By _____ N/R DVD

(6) TEMPORARY APPROVAL (If Necessary)

By _____ (SRO) DATE _____

By _____ DATE _____

(7) APPROVED BY R L Sweigart DATE 1-29-88

(8) MISCELLANEOUS

Reviewed/Approved By _____ DATE _____

Reviewed/Approved By _____ DATE _____

(9) COMMENTS (For procedure reissue indicate whether additional changes, other than previously approved changes, are included.
Attach additional pages, if necessary.) ADDITIONAL CHANGES INCLUDED. ☒ Yes ☐ No

(10) COMPARED WITH CONTROL COPY _____ DATE _____

COMPLETION

(11) DATE(S) PERFORMED _____

(12) PROCEDURE COMPLETION VERIFICATION

- ☐ Yes ☐ N/A Check lists and/or blanks properly initialed, signed, dated or filled in N/A or N/R, as appropriate?
- ☐ Yes ☐ N/A Listed enclosures attached?
- ☐ Yes ☐ N/A Data sheets attached, completed, dated and signed?
- ☐ Yes ☐ N/A Charts, graphs, etc. attached and properly dated, identified and marked?
- ☐ Yes ☐ N/A Acceptance criteria met?

VERIFIED BY _____ DATE _____

(13) PROCEDURE COMPLETION APPROVED _____ DATE _____

(14) REMARKS (Attach additional pages, if necessary.)

DUKE POWER COMPANY
NUCLEAR SAFETY EVALUATION CHECKLIST

MASTER FILE

(1) STATION: Oconee Nuclear Station UNIT: 1 _____ 2 _____ 3 ✓
OTHER: _____

(2) EVALUATION APPLICABLE TO (DESCRIPTION AND NUMBER OF NSM, PROCEDURE, PROCEDURE CHANGE, OR TEST/EXPERIMENT): _____

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(3) SAFETY EVALUATION — PART A

The item to which this evaluation is applicable represent:

☐ Yes ☒ No A change to the station or procedures as described in the FSAR: or a test or experiment not described in the FSAR? Affected FSAR Section(s) are: _____

If the answer to the above is "Yes," identify the **affected** section(s) of the FSAR. Attach additional sheets as necessary.

(4) SAFETY EVALUATION — PART B

☐ Yes ☒ No Will this item require a change to the station Technical Specifications? Affected Tech. Specs. Section(s) are: _____

If the answer to the above is "Yes," identify the specification(s) **affected** and/or attach the applicable page(s) with the change(s) indicated. Tech. Spec. changes require NSRB and NRC approval prior to use.

(5) SAFETY EVALUATION — PART C

As a result of the item to which this evaluation is applicable:

☐ Yes ☒ No Will the probability of an accident previously evaluated in the FSAR be increased? Explain: _____
See *

☐ Yes ☒ No Will the consequences of an accident previously evaluated in the FSAR be increased? Explain: _____
See *

MASTER FILE

Unit 3
Page i

LOSS OF POWER
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OCONEE NUCLEAR STATION

LOSS OF POWER AP/3/A/1700/11

1.0 Purpose

This procedure provides actions necessary to place and maintain the plant in a safe condition if the MFBs is or has been deenergized.

2.0 Symptoms

- "EL MF BUS B1 UNDERVOLTAGE" statalarm
- "EL MF BUS B2 UNDERVOLTAGE" statalarm
- "FDW BOTH PUMPS TRIP" statalarm
- "CCW DISCH TO TAILRACE" statalarm

3.0 Automatic Systems Actions

- Reactor Trip
- FDWPT Trip
- TD EFDWP Start
- CCW Gravity Flow to Tailrace
- Keowee Emergency Starts
- Possible Load Shed
- Possible Switchyard Isolation

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Immediate Manual Actions

4.0 Immediate Manual Actions

____ 4.1 REFER TO EP/3/A/1800/01, EMERGENCY OPERATING PROCEDURE.

____ 4.2 IF a Load Shed has occurred,
THEN send an Operator to supply the IA Hdr with the Diesel
Air Compressor:

- REFER TO OP/0/A/1106/27, COMPRESSED AIR SYSTEM.

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Subsequent Actions

5.0 Subsequent Actions

- ____ 5.1 IF CT-3 has reenergized the MFB(s),
THEN GO TO Section 503, Unit Status Assessment.
- ____ 5.2 IF the STBY BUS has reenergized the MFB(s),
THEN GO TO Section 501, Power From Standby Bus.
- ____ 5.3 IF the MFBs are NOT energized,
THEN GO TO Section 502, Manually Energizing MFBs.
- ____ 5.4 IF the MFBs CANNOT be energized,
from one of the following:
- CT-3
 - CT-4
 - CT-5
 - CT-2,
- THEN GO TO Section 504, Blackout.

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Section 501

Power From Standby Bus

NOTE 1.0 If both MFBs have been deenergized for > 20 seconds or if ES 1 or 2 was actuated while one MFB was deenergized, then a Load Shed should have been initiated.

____ 1.0 Verify that Load Shed was initiated:

- "EL LOAD SHED CHNL A LOGIC INITIATE" statalarm (3SA-15)
- "EL LOAD SHED CHNL B LOGIC INITIATE" statalarm (3SA-14).

____ 1.1 IF Load Shed is NOT complete:

- "EL LOAD SHED INCOMPLETE" statalarm (3SA-15)
- "Load Shed Complete" NOT indicated on ES module (ES Channels 1 and 2),

THEN secure the following loads:

- All HD pumps
- All but one HWP
- All but one CBP
- All but one CCW pump
- RB Purge fans.

____ 2.0 Send an Operator to reset the MFB Monitor Panel Load Shed circuitry:

- Press "RESET" on channel 'A' and channel 'B' simultaneously
- IF ES has occurred,
THEN reset ES Channels 1 and 2
or
press "MANUAL" on the Load Shed ES modules.

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Section 501

Power From Standby Bus

___ 3.0 Restore the following loads:

- 3X1
- 3X2
- 3X3.

___ 4.0 Verify all the IA Compressors are operating:

___ 'A' IA Compressor is on:

- Powered from 1XD

___ 'B' IA Compressor is on:

- Powered from 1XF

___ 'C' IA Compressor is on:

- Powered from 2XF.

___ 5.0 GO TO Section 503, Unit Status Assessment.

END

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Section 502

Manually Energizing MFBs

- ____ 1.0 IF CT-3 is energized,
AND the following Bkrs are open:
- ____ "N1 MFB1 NORMAL FDR"
____ "N2 MFB2 NORMAL FDR"
____ "E1 MFB1 STARTUP FDR"
____ "E2 MFB2 STARTUP FDR"
- ____ "3TA NORMAL 6.9 KV FDR"
____ "3TB NORMAL 6.9 KV FDR"
____ "3TA SU 6.9 KV FDR"
____ "3TB SU 6.9 KV FDR,"
- THEN close the following Bkrs:
- ____ "E1 MFB1 STARTUP FDR"
____ "E2 MFB2 STARTUP FDR"
____ "3TA SU 6.9 KV FDR"
____ "3TB SU 6.9 KV FDR."
- ____ 1.1 IF the MFB(s) is energized,
THEN GO TO Section 503, Unit Status Assessment.
- ____ 2.0 IF the MFBs are NOT energized,
AND the STBY Bus(es) is energized,
THEN close the STBY to MFB Bkrs:
- "S1 STBY BUS 1 TO MFB1" Bkr
 - "S2 STBY BUS 2 TO MFB2" Bkr.

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Section 502

Manually Energizing MFBs

NOTE Lee and Keowee Bkr and Xfer switches are located in the Unit 1&2 control room.

____ 3.0 IF CT-4 is NOT energized,
THEN Emergency Start both Keowee Units,
and
verify the underground feeder is aligned from one
running unit:

- Close ACB-3 on Unit 1
or
Close ACB-4 on Unit 2.

____ 4.0 IF CT-4 is energized,
AND the MFB(s) is NOT energized,
THEN energize the MFBs:

____ 4.1 Open the following Bkrs:

____ "N1 MFB1 NORMAL FDR"
____ "N2 MFB2 NORMAL FDR"
____ "E1 MFB1 STARTUP FDR"
____ "E2 MFB2 STARTUP FDR"
____ "SL1 LEE STBY BUS 1 FDR"
____ "SL2 LEE STBY BUS 2 FDR."

____ 4.2 Close the following Bkrs:

____ "SK1 KEOWEE STBY BUS 1 FDR"
____ "SK2 KEOWEE STBY BUS 2 FDR"
____ "S1 STBY BUS 1 TO MFB1"
____ "S2 STBY BUS 2 TO MFB2."

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Section 502

Manually Energizing MFBs

____ 4.3 IF the MFB(s) is energized,
THEN GO TO Section 501, Power From Standby Bus.

____ 5.0 IF the MFB(s) is NOT energized,
THEN energize the MFB(s) from CT-5:

____ 5.1 IF CT-5 is energized,
THEN open the following Bkrs:
____ "N1 MFB1 NORMAL FDR"
____ "N2 MFB2 NORMAL FDR"
____ "E1 MFB1 STARTUP FDR"
____ "E2 MFB2 STARTUP FDR"
____ "SK1 KEOWEE STBY BUS 1 FDR"
____ "SK2 KEOWEE STBY BUS 2 FDR."

____ 5.2 Close the following Bkrs:
____ "SL1 LEE STBY BUS 1 FDR"
____ "SL2 LEE STBY BUS 2 FDR"
____ "S1 STBY BUS 1 TO MFB1"
____ "S2 STBY BUS 2 TO MFB2."

____ 5.3 Place the LEE STBY BUS BKR Xfer SW(s) in "AUTO":
• "SL1 AUTO/MAN" Xfer SW in "AUTO"
• "SL2 AUTO/MAN" Xfer SW in "AUTO."

____ 5.4 IF CT-5 is NOT energized,
THEN REFER TO OP/0/A/1107/03, 100 KV POWER SUPPLY
and
energize the MFB(s).

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Section 502

Manually Energizing MFBs

____ 5.5 Establish a dedicated line from the Lee Gas Turbines within one hour.

____ 5.6 IF the MFB(s) is energized,
THEN GO TO Section 501, Power From Standby Bus.

CAUTION RCS makeup and Primary to Secondary heat transfer must be regained within 40 minutes to prevent core damage.

____ 6.0 IF the MFB(s) is NOT energized,
THEN REFER TO OP/0/A/1600/11, STANDBY SHUTDOWN FACILITY EMERGENCY OPERATING PROCEDURE.

____ 7.0 IF the MFB(s) is NOT energized from one of the following:

- CT-3
- CT-4
- CT-5,

AND power is available from CT-2,
THEN REFER TO OP/3/A/1107/02, NORMAL POWER
and
supply Unit 3 MFB(s) with CT-2.

____ 7.1 WHEN power is restored to the MFB(s),
THEN GO TO Section 503, Unit Status Assessment.

____ 8.0 IF Power CANNOT be restored to the MFB(s),
THEN GO TO Section 504, Blackout.

END

LOSS OF POWER
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Section 503

Unit Status Assessment

____ 1.0 Verify the following loads are energized:

____ 3TC	____ 3X8	____ 3XS1
____ 3TD	____ 3X9	____ 3XS2
____ 3TE	____ 3X10	____ 3XS3
____ Control Battery Chargers.		

____ 2.0 IF a Load Shed was initiated,
THEN reset the MFB Monitor Panel Load Shed circuitry:

- Press "RESET" on both the Channel 'A' and Channel 'B' simultaneously
- IF ES has occurred,
THEN reset ES channels 1 and 2
or
press "MANUAL" on the Load Shed ES modules.

____ 2.1 Restore the following loads:

____ 3X1	____ 3X4
____ 3X2	____ 3X7
____ 3X3.	

____ 2.2 Verify that the transformer supplying power is within limits:

- REFER TO Enclosure 6.1 (Electrical System Overload Limits).

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Section 503

Unit Status Assessment

____ 3.0. Verify that the IA Compressors are operating:

____ 'A' IA Compressor is on:

- Powered from 1XD

____ 'B' IA Compressor is on:

- Powered from 1XF

____ 'C' IA Compressor is on:

- Powered from 2XF.

____ 4.0 Verify the status of the HPI system:

____ 4.1 At least one HPI pump operating.

____ 4.2 RCP seal injection flow is > 30 gpm:

- REFER TO OP/3/A/1103/06, RCP OPERATION.

____ 5.0 Verify the status of the LPSW system:

____ 5.1 Verify two LPSW pumps are in operation.

____ 5.2 Monitor essential components serviced by LPSW:

- RCP Motors
- MD EFDWPs
- HPI Motors
- RBCUs
- CC coolers.

LOSS OF POWER
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Section 503

Unit Status Assessment

____ 5.3 Verify "CCW Gravity Flow" to tailrace is established:

- Send a security guard to CCW-8 (EMER Disch To Tailrace) to verify flow.

____ 5.3.1 IF Gravity Flow has been lost,
THEN send an Operator to valve in CCW to both
Condensate Coolers:

____ Verify open 3CCW-76 ('3A' Condensate Cooler
CCW Inlet)

____ Verify open 3CCW-77 ('3A' Condensate Cooler
CCW Outlet)

____ Open 3CCW-78 ('3B' Condensate Cooler CCW Inlet)

____ Open 3CCW-79 ('3B' Condensate Cooler CCW Outlet)

____ Open 3CCW-75 (Condensate Coolers CCW Supply).

CAUTION 6.0 LPSW Pump NPSH problems may develop, if a CCW Pump is
not started within 1 hr of the loss of power.

____ 6.0 Establish CCW flow:

____ 6.1 IF CCW pump(s) are available,
THEN start one CCW pump.

____ 6.1.1 Verify that the following valves open:

____ 3CCW-20 (Condenser '3A1' Outlet)

____ 3CCW-21 (Condenser '3A2' Outlet)

____ 3CCW-22 (Condenser '3B1' Outlet)

____ 3CCW-23 (Condenser '3B2' Outlet)

____ 3CCW-24 (Condenser '3C1' Outlet)

____ 3CCW-25 (Condenser '3C2' Outlet).

____ 6.1.2 Close 3CCW-93 (Waterbox EMER Disch) valve.

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Section 503

Unit Status Assessment

____ 6.1.3 IF NO other Unit requires "CCW Gravity Flow",
 THEN close CCW-8 (EMER Disch To Tailrace).

____ 6.1.3.1 Reprime Condenser Emer Disch line:

- REFER TO OP/3/A/1104/12, CCW SYSTEM.

____ 6.2 IF A CCW pump CANNOT be started,
 THEN open the CCW crossover on a Unit with a CCW pump(s) in
 service:

____ 2CCW-41 (Unit 2 Crossover Tie)

- Location: TB-1-J-40

____ 3CCW-42 (Unit 3 Crossover Tie)

- Location: TB-1-K-44.

____ 6.2.1 IF forced CCW flow is NOT started
 within 1 hour,
 THEN close the following valve within the next
 30 min:

____ 3CCW-75 (Condensate Coolers CCW Supply)

- Location: TB-1-F-44

____ 7.0 Verify that Condenser vacuum is established:

____ 7.1 IF the main FDWP suction valve(s) is open:

- 3FDW-1 ('3A' FDWP Suction)
- 3FDW-6 ('3B' FDWP Suction),

 THEN verify \geq 4 psig FDWP lube oil pressure.

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Section 503

Unit Status Assessment

- ____ 7.2 IF NO HWP's are operating,
THEN close 3C-10 (HWP's Disch Control),
and
start one HWP.
- ____ 7.3 Open 3C-10 (HWP's Disch Control).
- ____ 7.4 Start one CBP.
- ____ 7.5 Establish \approx 3000 gpm Condensate recirc flow:
• REFER TO OP/3/A/1106/02, CONDENSATE AND FEEDWATER
SYSTEM.
- ____ 7.6 Verify that the CSAE regulators are maintaining \approx 300 psig
steam supply Hdr pressure.
- ____ 8.0 Verify the status of the CC system:
- ____ 8.1 IF CC flow is NOT available,
THEN perform the following:
- ____ 8.1.1 Open 3CC-8 (CC Return Pent Outside Block).
- ____ 8.1.2 Open 3CC-7 (CC Return Pent Inside Block).
- ____ 8.1.3 Start a CC pump.
- ____ 8.1.4 Verify $>$ 575 gpm CC total flow.

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Section 503

Unit Status Assessment

____ 9.0 Verify RCW pumps are operating.

____ 10.0 Verify SF cooling pumps are operating.

____ 11.0 IF a Switchyard Isolation has occurred:
THEN Unit 1 will restore the PCBs to service at the dispatcher's request.

____ 12.0 IF the MFB(s) is energized from the STBY bus,
AND the Startup Xformer is energized,
THEN transfer the MFB loads to the Startup Xformer:
• REFER TO OP/0/A/1106/19, KEOWEE HYDRO AT OCONEE.

END

LOSS OF POWER
AP/3/A/1700/11

Section 504

Blackout

CAUTION: RCS makeup and Primary to Secondary heat transfer must be regained within 40 minutes of the event to prevent core damage.

____ 1.0 Send an Operator(s) to start the SSF Diesel:

- REFER TO OP/0/A/1600/11, STANDBY SHUTDOWN FACILITY EMERGENCY OPERATING PROCEDURE.

____ 2.0 IF HPI makeup to the RCS is NOT available,
THEN initiate SSF RC Makeup Pump operation:

- REFER TO OP/0/A/1600/11, STANDBY SHUTDOWN FACILITY EMERGENCY OPERATING PROCEDURE.

____ 2.1 IF the SSF RC Makeup Pump is NOT available,
THEN power either '3A' or '3B' HPI Pump from the Aux Service Water Pump SWGR:

- REFER TO Enclosure 6.2 (HPI Pump Power From the Auxiliary Service Water Pump Switchgear).

____ 2.1.1 IF the BWST is NOT available,
THEN take HPI pump suction from the SFP:

- REFER TO Enclosure 6.5 (HPI Pump Suction From The SFP).

____ 3.0 Verify TD EFDWP operation:

- REFER TO AP/3/A/1700/19, LOSS OF MAIN FEEDWATER.

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Section 504

Blackout

____ 3.1 Send an Operator to isolate Hotwell makeup from the UST:

____ Close 3C-191 (Hotwell Normal Makeup Control Inlet)

- Location: TB-1-E-45

____ Close 3C-186 (Hotwell Emergency Makeup #1 Control Inlet)

- Location: TB-1-E-45.

____ 3.2 Align CSAEs for Blackout operation:

- Complete Enclosure 6.4 (CSAE Back Flow Line Up).

CAUTION 4.0 "CCW Gravity Flow" may be lost after four hours of operation.
Power must be regained to supply the LPSW system.

____ 4.0 Verify "CCW Gravity Flow" is established:

____ 4.1 All CCW condenser discharge valves closed:

____ 3CCW-20 (Condenser '3A1' Outlet)

____ 3CCW-21 (Condenser '3A2' Outlet)

____ 3CCW-22 (Condenser '3B1' Outlet)

____ 3CCW-23 (Condenser '3B2' Outlet)

____ 3CCW-24 (Condenser '3C1' Outlet)

____ 3CCW-25 (Condenser '3C2' Outlet).

____ 4.2 Verify 3CCW-93 (Waterbox EMER Disch) valve is open.

____ 4.3 Verify CCW-8 (EMER Disch To Tailrace) is open.

____ 4.4 Send a security guard to CCW-8 (EMER Disch To Tailrace)
to verify "CCW Gravity Flow."

LOSS OF POWER
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Section 504

Blackout

NOTE 4.5 Due to low CCW flow being supplied by gravity flow and limited vacuum in the condenser, the TBVs may cycle on and off the 7" Hg condenser vacuum low limit. This is an expected event and should be allowed to continue unless RCS temperature cannot be controlled in this manner.

____ 4.5 IF after an hour, forced CCW flow is NOT established,
THEN within the next 30 minutes, perform the following:
____ Close 3CCW-75 (Condensate Coolers CCW Supply)
• Location: TB-1-F-44

____ 5.0 Monitor Elevated Water Storage Tank level:

____ 5.1 IF EWST level is low,
THEN notify the TSC to makeup to the EWST.

____ 6.0 GO TO Section 5.0, Subsequent Actions.

END

LOSS OF POWER
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ENCLOSURE 6.1
Electrical System Overload Limits

- NOTE
- The following transformer limits are provided for information.
 - In emergency conditions, the transformers can be overloaded to 112% of the normal amp limits without damage. The transformers are not guaranteed at loads > 112%.
 - If extreme emergency conditions exist, the 112% amp limit can be exceeded but the transformer oil and hot spot limits should never be exceeded.

1.0 Transformer max Oil (liquid) Temperature - 130°C or 266°F

- Computer Points:
 - A1686 EL NOR XFMR 3T OIL TEMP
 - A0890 EL SB XFMR CT-3 OIL TEMP
 - A0835 EL SB XFMR CT-4 OIL TEMP
 - A0837 EL SB XFMR CT-5 OIL TEMP

2.0 Transformer Max Hot Spot (Winding) Temperature - 150°C or 302°F

- Computer Points:
 - A1687 EL NOR XFMR 3T WNDG TEMP
 - A0891 EL SB XFMR CT-3 WNDG TEMP
 - A0836 EL SB XFMR CT-4 WNDG TEMP
 - A0838 EL SB XFMR CT-5 WNDG TEMP

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ENCLOSURE 6.1
Electrical System Overload Limits

3.0 Transformer CT-4 Max load:

- 0.835 AC Kiloamperes Incoming (100%)
- 0.935 AC Kiloamperes Incoming (112%)
- Amp gauge is located on Unit 1's Switchyard Mimic board.

4.0 Transformer CT-5 Max load:

- 115 Amperes Incoming (100%)
- 129 Amperes Incoming (112%)
- Amp gauge is located on Unit 1's Switchyard Mimic board.

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ENCLOSURE 6.2
HPI Pump Power From The
Auxiliary Service Water Pump Switchgear

- ____ 1.0 Notify I&E personnel to align '3A' or '3B' HPI Pump power supply to the Auxiliary Service Water Switchgear:
- REFER TO IP/0/A/050/001, PROCEDURE TO PROVIDE EMERGENCY POWER TO AN HPI PUMP MOTOR FROM THE ASW PUMP SWITCHGEAR.
- ____ 2.0 Energize the Standby Bus 1:
- REFER TO one of the following procedures:
 - OP/0/A/1106/19, KEOWEE HYDRO AT OCONEE
 - OP/0/A/1107/03, 100 KV POWER SUPPLY.
- ____ 3.0 Verify 3HP-21 (RCP Seal Return Isolation) is closed.
- ____ 4.0 Send an Operator to close 3HP-139 (RCP Seal Injection Manual Block):
- Location: Aux Bldg, 3rd floor, CRD Filter room.
- ____ 5.0 IF the BWST is NOT available,
THEN REFER TO Enclosure 6.5 (HPI Pump Suction From the SFP).
- ____ 6.0 IF HPSW backup cooling to the HPI motor coolers is NOT operable,
THEN REFER TO Enclosure 6.3 (Aux Service Water to HPI Pump Motor Coolers).
- ____ 7.0 Start '3A' or '3B' HPI Pump from the Aux Service Water Switchgear.

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ENCLOSURE 6.2
HPI Pump Power From The
Auxiliary Service Water Pump Switchgear

____ 8.0 Manually throttle 3HP-26 ('3A' HP Injection) to establish
RCS makeup:

- REFER TO EP/3/A/1800/01, EMERGENCY OPERATING
PROCEDURE, for proper HPI flow.

LOSS OF POWER
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ENCLOSURE 6.3
Aux Service Water To
HPI Pump Motor Coolers

____ 1.0 Energize the Standby Bus 1:

- REFER TO one of the following procedures:
 - OP/0/A/1106/19, KEOWEE HYDRO AT OCONEE
 - OP/0/A/1107/03, 100 KV POWER SUPPLY.

____ 2.0 Send an Operator to open the following valves at the Aux Service Water pump:

- CCW-99 (ASWP Suction)
- CCW-101 (ASWP Discharge).

____ 2.1 Throttle CCW-247 (ASWP Recirc) \approx 2 turns open.

____ 3.0 Send an Operator to rack in the Aux Service Water Pump Feeder Bkr at the Aux Service Water Pump SWGR:

____ 3.1 Start the Aux Service Water pump.

____ 4.0 Open 3CCW-265 (ASWP Supply to HPI Pump Motor Cooler):

- Located: Aux Bldg, 2nd floor, Seal Supply Filter Room.

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ENCLOSURE 6.4
CSAE Back Flow Line Up

____ 1.0 Send an Operator to close the following valves at the CSAEs:

- ____ 3MS-53 ('3A1' CSAE First Stage Supply)
- ____ 3MS-54 ('3A2' CSAE First Stage Supply)
- ____ 3MS-62 ('3B1' CSAE First Stage Supply)
- ____ 3MS-63 ('3B2' CSAE First Stage Supply)
- ____ 3MS-71 ('3C1' CSAE First Stage Supply)
- ____ 3MS-72 ('3C2' CSAE First Stage Supply).

NOTE 2.0 This step will drain water from the UST to the Hotwell.

____ 2.0 Provide CSAE cooling by performing the following:

____ 2.1 Bypass the Powdex.

____ 2.2 Open 3C-10 (HWP's Disch Control).

____ 2.3 Send an Operator to open the following valves:

____ 2.3.1 3C-209 (Seal Water Header Supply):

- Location: TB-1-J-48.

____ 2.3.2 3C-207 (Seal Water Header From CBPs):

- Location: TB-1-J-48.

____ 2.3.3 3C-200 (Seal Water Header Supply Room UST Riser):

- Location: TB-1-J-47.

____ 2.3.4 3C-422 ('3C' HWP Disch Vlv Bypass):

- Location: TB-1-G-44.

____ 2.3.5 3C-423 ('3B' HWP Disch Vlv Bypass):

- Location: TB-1-G-44.

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ENCLOSURE 6.4
CSAE Back Flow Line Up

____ 2.3.6 3C-424 ('3A' HWP Disch Vlv Bypass):

- Location: TB-1-G-44.

____ 3.0 Align TD EFDWP suction to the hotwell to limit the loss of UST inventory:

- REFER TO AP/3/A/1700/19, LOSS OF MAIN FEEDWATER.

LOSS OF POWER
AP/3/A/1700/11

ENCLOSURE 6.5
HPI Pump Suction From The SFP

____ 1.0 IF the BWST is NOT available,
THEN line up HPI pump suction to the SFP:

____ 1.1 Send an Operator to close 3LP-28 (BWST Outlet):

- Obtain a key from the key locker.

____ 1.2 Send an operator to open the following valves:

____ 3SF-53 (Pump Suction Header Block)

- Location: Aux Bldg, 2nd floor SF Cooler room

____ 3SF-55 (From Unit 3 BWST)

- Location: Aux Bldg, 2nd floor SF Cooler room.

____ 1.3 Open 3HP-24 ('3A' HPI BWST Suction).

CAUTION HPI pump suction must be supplied from the SFP fill line
before the pool level decreases to less than -3.0 ft.

____ 2.0 IF HPI pump suction must be taken from the SFP,
AND SFP level is > -2.5 feet,
THEN align the suction to the SFP fill line:

____ 2.1 Trip the running SF Cooling pumps..

____ 2.2 Trip the BWST Recirc pump.

____ 2.3 Send an Operator(s) to close the following:

____ 3SF-15 ('A' SF Cooler Outlet)

- Location: Aux Bldg, 2nd floor, SF Cooler Room

LOSS OF POWER
AP/3/A/1700/11

ENCLOSURE 6.5
HPI Pump Suction From The SFP

____ 3SF-17 ('B' SF Cooler Outlet)

- Location: Aux Bldg, 2nd floor, SF Cooler Room

____ 3SF-23 (SF Cooler Outlet Hdr Block)

- Location: Aux Bldg, 2nd floor, SF Cooler Room

____ 3SF-49 (SF Filter Outlet Hdr Block)

- Location: Aux Bldg, 2nd floor, SF Cooler Room

____ 3SF-57 (BWST Recirc Pump Suction)

- Location: Aux Bldg, 2nd floor, SF Cooler Room

____ 3SF-96 ('C' SF Cooler Outlet)

- Location: Aux Bldg, 6th floor, Purge Room

____ 3SF-22 (Pool Surface Supply)

- Location: Aux Bldg, Pent Room at crossover.

____ 2.4 Send an Operator to open 3SF-21 (Pool Coolant Supply Hdr Block)

- Location: Aux Bldg, 2nd floor, SF Cooler Room.

____ 3.0 Send an Operator to Prime the SFP Fill line:

____ 3.1 Connect the SF Priming pump to the SFP fill line.

____ 3.2 Send an Operator to open 3SF-85 (Pool Under Water Supply Block to Priming Pump):

- Location: Aux Bldg, 6th floor, SFP.

____ 3.3 Place the flex hose on the discharge of the SF pump into the SFP.

LOSS OF POWER
AP/3/A/1700/11

ENCLOSURE 6.5
HPI Pump Suction From The SFP

____ 3.4 Send an Operator to close 3SF-84 (Pool Underwater Supply Vent)

- Location: Aux Bldg, 6th floor SFP.

____ 3.5 Send an Operator to open 3SF-86 (SF Priming Pump Seal Water Inlet)

- Location: Aux Bldg, 6th floor SFP.

____ 3.6 Send an Operator to start the SF Priming pump:

____ Close the Emergency Cooling Water Priming pump Bkr at the ASW 600V Load Center

____ Close the SF Priming pump Bkr

- Located south of ASWP SWGR.

____ 3.7 WHEN a steady stream of water is discharging from the SF Priming pump,

THEN the SFP fill line is primed.

____ 3.8 Send an Operator to complete the following:

- Throttle open 3SF-51 ('B' SF Cooler Outlet to Pump Hdr) while throttling closed 3SF-53 (Pump Suction Hdr Block).

____ 3.9 Send an Operator to close 3SF-85 (Pool Under Water Supply Block to Priming Pump).

____ 3.10 Send an Operator to stop the SF Priming pump.