


Approval <i>J. Beckley</i>	Vogtle Electric Generating Plant NUCLEAR OPERATIONS	 Georgia Power	Procedure No. 18021-C
Date 3/16/90	Unit <u>COMMON</u>		Revision No. 4
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05-88-90

MID LOOP STEPS

STEP 5

ABNORMAL OPERATING PROCEDURE
LOSS OF NUCLEAR SERVICE COOLING WATER SYSTEM

INFORMATION
NO. 17

PURPOSE

This procedure addresses the loss or degraded operation of one or more trains of Nuclear Service Cooling Water (NSCW).

SYMPTOMS

- Trip of operating NSCW pumps and failure of standby pump to start.
- Dropping NSCW Supply Header pressure.
- Large difference between Supply Header flow and Return Header flow, indicating a large leak.
- NSCW Tower Basin temperature rising above 90°F.
- High temperature or low flow alarms on any components or systems cooled by NSCW.

ACTION/EXPECTED RESPONSERESPONSE NOT OBTAINED

1. Start all three NSCW Pumps in the affected train.

1. Check by status light indication that electric power is available and go to Step 2.

-OR-

IF power is not available, THEN initiate 18031-C, LOSS OF CLASS 1E ELECTRICAL SYSTEMS.

2. Check affected NSCW Train operation:

2.

- Supply header pressure - Greater Than 90 Psig

Train A: PI-1636
Train B: PI-1637

- Supply header temperature on PROTEUS or ERF computer - Less Than 90°F.

Train A: Instrument TE-1642
Train B: Instrument TE-1643

- Supply header flow - Approximately 18,000 Gpm

Train A: FI-1640B
Train B: FI-1641E

- Return header flow - Approximately 18,000 Gpm

Train A: FI-1640A
Train B: FI-1641A

- a. Place the opposite NSCW train in operation by initiating 13150, NUCLEAR SERVICE COOLING WATER SYSTEM.

-OR-

- b. IF neither NSCW train can be placed into operation, THEN:

- Trip the reactor and go to 19000-C, E-0, REACTOR TRIP OR SAFETY INJECTION.

- Continue with Step 3 of this AOP.

ACTION/EXPECTED RESPONSERESPONSE NOT OBTAINED

3. Check NSCW Cooling Towers:

- Basin levels - Greater than 73%

Tower A: LI-1606

Tower B: LI-1607

- NSCW Supply temperature: Equal To Or Less Than 90°F

Tower A: TE1642

Tower B: TE1643

3.

- a. Stop cooling tower blowdown.

- b. Makeup to cooling towers by initiating 13150, NUCLEAR SERVICE COOLING WATER SYSTEM.

-OR-

Comply with Tech. Spec. 3.7.5.

4. IF the loss of NSCW is sustained,
THEN shutdown the train-associated Emergency Diesel Generator by initiating 13145, DIESEL GENERATORS and refer to Tech. Spec. 3.8.1.1 or Tech. Spec. 3.8.1.2 as applicable.

5. Transfer NSCW loads listed in Table 1 to operating NSCW train.

5. Initiate the following as appropriate:

- 18020-C, LOSS OF COMPONENT COOLING WATER
- 18022-C, LOSS OF AUXILIARY COMPONENT COOLING WATER
- 18019-C, LOSS OF RESIDUAL HEAT REMOVAL

6. Restore the NSCW Train to operation within 72 hours

6. Perform plant shutdown to cold shutdown.

ACTION/EXPECTED RESPONSERESPONSE NOT OBTAINED

7. Check Tech. Specs. for operability requirements of components served by the affected NSCW train to determine the most limiting Tech. Spec. time constraint on continued operation in the present mode.
8. IF NSCW return temperature is greater than 95°F read on TI-1676A (Train A) or TI-1677A (Train B), THEN check all cooling tower fans running.
9. IF loss of NSCW train was caused by a leak, THEN:
- a. Shutdown any components affected by the leak.
 - b. Transfer operation to redundant components.
 - c. Isolate and repair the leak.
10. Continue operation by returning to applicable UOP.
8. Start any fans that are not running.
- OR-
- Shift operating auxiliary systems to the unaffected NSCW train as necessary.
9. IF leakage cannot be repaired within 72 hours, Then shutdown to Cold Shutdown by initiating applicable UOPs.

END OF PROCEDURE TEXT

Table 1. LIST OF NSCW LOADS BY TRAIN

<u>Train A</u>	<u>Train B</u>
• Centrifugal Charging Pump A and Lube Oil Cooler	• Centrifugal Charging Pump B and Lube Oil Cooler
• Safety Injection Pump A and Lube Oil Cooler	• Safety Injection Pump B and Lube Oil Cooler
• Containment Spray Pump A	• Containment Spray Pump B
• Residual Heat Removal Pump A	• Residual Heat Removal Pump B
• Component Cooling Water Pumps PMP-1, PMP-3, and PMP-5	• Component Cooling Water Pumps PMP-2, PMP-4, and PMP-6
• Component Cooling Water Heat Exchanger E4-001	• Component Cooling Water Heat Exchanger E4-002
• Auxiliary Component Cooling Water Heat Exchanger E4-001	• Auxiliary Component Cooling Water Heat Exchanger E4-002
• Train A Diesel Generator	• Train B Diesel Generator
• Control Building ESF Chiller 1592-C7-001	• Control Building ESF Chiller 1592-C7-002
• Piping Penetration Area Cooler E7-002	• Piping Penetration Area Cooler E7-002
• CTB Coolers A7-001 and A7-002 on the same supply header	• CTB Coolers A7-003 and A7-004 on the same supply header
• CTB Coolers A7-005 and A7-006 on the same supply header	• CTB Cooler A7-007 and A7-008 on the same supply header
• CTB Auxiliary Air Cooling Coil A7-001 and Reactor Cavity Cooling Coil on the same supply header	• CTB Auxiliary Air Cooling Coil A7-002 and Reactor Cavity Cooling Coil on the same supply header