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THREE MILE ISLAND NUCLEAR STATION
UNIT #2 ABNORMAL PROCEDURE 2203-2.4
SECONDARY SERVICES CLOSED COOLING WATER FAILURE

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Unit 1 Staff Recommends Approval

Approval NA Date —
Cognizant Dept. Head

Unit 2 Staff Recommends Approval

Approval NA Date —
Cognizant Dept. Head

Unit 1 PORC Recommends Approval

NA Date —
Chairman of PORC

PORC comments of — included
(date)

By — Date —

Unit 2 PORC Recommends Approval

J A Marken Jr Date 6-20-77
Chairman of PORC

PORC comments of — included
(date)

By — Date —

Approval J H Taylor Date 6/20/77
Station Superintendent/
Unit Superintendent

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THREE MILE ISLAND NUCLEAR STATION

UNIT #2 ABNORMAL PROCEDURE 2203-2.4

SECONDARY SERVICES CLOSED COOLING WATER FAILURE

1.0 SYMPTOMS

1.1 Secondary Services Closed Cooling Water Pumps Low Suction Alarm at at 8 psig (decreasing) - Alarm 8.A8.

1.2 Secondary Services Closed Cooling Water Pump Trip - Alarm 8.D8.

1.3 Secondary Services Closed Cooling Water Head Tank High/Low Level Alarm at 76 inches (high) and 25 inches (low) - Alarm 8.B8.

1.4 Secondary Services Closed Cooling Water Differential Pressure High/Low Alarm at 51 psi (increasing) or 34 psi (decreasing) - Alarm 8.C8.

1.5 High temperatures from computer for components served by SSCCW.

1.6 Turbine trip on loss of secondary service closed cooling water - Alarm 8.E3.

2.0 IMMEDIATE ACTION

2.1 Automatic Action

2.1.1 Standby Secondary Services Closed Cooling Pump will start automatically if a running pump trips.

2.1.2 Secondary Services Closed Cooling Water Head Tank level control will modulate valve DW-V6 to maintain proper level in the head tank.

2.1.3 Differential pressure regulating valve SC-V129 will modulate to maintain proper system differential pressure.

2.1.4 Main Turbine - Generator will trip upon loss of all three Secondary Closed Cooling Water Pumps.

2.1.5 Service Air Compressors will stop upon reaching high discharge air temperature (475°).

2.2 Manual Action

2.2.1 Verify that the standby Secondary Services Closed Cooling Pump has started if an operating pump has tripped. If not, manually start the standby pump.

2.2.2 If it is impossible to establish normal Secondary Services Cooling Water Flow shutdown the unit as follows:

2.2.2.1 Reduce load at maximum rate, to 15% reactor power or as required by Generator, Exciter or Isolated Phase Bus Duct Temperature manually TRIP the turbine.

2.2.2.2 Verify that reactor power is in a run back at 20% per minute.

3.0 FOLLOWUP ACTION

3.1 If the Secondary Services Cooling Water Head Tank alarms low (25 inches), verify that makeup valve DW-V6 is open to increase level. If not, open manual bypass valve DW-V9.

3.2 Monitor pump bearing temperatures on the operating condensate/condensate booster pump and main feed pump. Monitor the following computer points on the CRT display for the operating pumps.

CO-P1A	1521	(max = 210°F)
CO-P1B	1525	(max = 210°F)
CO-P1C	1529	(max = 210°F)
CO-P2A	1538, 1539	(max = 210°F)
CO-P2B	1545, 1546	(max = 210°F)
CO-P2C	1552, 1553	(max = 210°F)

FW-P1A	1635	(max = 210°F)
FW-P1B	1644	(max = 210°F)

3.3 If the measured temperatures exceed the maximum allowable, trip the reactor, and all the pumps in the operating feed string.

3.4 If one normal feed string can be maintained, ensure the ICS controls steam generator level at the low level limit when at 15% power.

3.5 Attempt to isolate any leakage and/or, while filling the SSCC Surge tank, isolate portions of the system to keep continued supply of SSCC water to operating components of the secondary plant.

3.6 Start additional SSCC pumps and valve in additional coolers as needed to maintain adequate cooling to all components in service.

3.7 Place the standby SSCC water heat exchanger in service for continued hi SSCC water heat exchanger outlet temp and backwash the heat exchanger.

3.8 Shutdown in accordance with 2102-3.1 Unit Shutdown.