

PORC CHAIRMAN UNIT 1

1203-1
Revision 5
09/10/79

THREE MILE ISLAND NUCLEAR STATION

UNIT #1 ABNORMAL PROCEDURE 1203-1
LOAD REJECTION

Table of Effective Pages

CONTROLLED COPY

<u>Page</u>	<u>Date</u>	<u>Revision</u>	<u>Page</u>	<u>Date</u>	<u>Revision</u>	<u>Page</u>	<u>Date</u>	<u>Revision</u>
1.0	06/28/79	4	26.0			51.0		
2.0	09/10/79	5	27.0			52.0		
3.0	09/10/79	5	28.0			53.0		
4.0	09/10/79	5	29.0			54.0		
5.0	09/10/79	5	30.0			55.0		
6.0			31.0			56.0		
7.0			32.0			57.0		
8.0			33.0			58.0		
9.0			34.0			59.0		
10.0			35.0			60.0		
11.0			36.0			61.0		
12.0			37.0			62.0		
13.0			38.0			63.0		
14.0			39.0			64.0		
15.0			40.0			65.0		
16.0			41.0			66.0		
17.0			42.0			67.0		
18.0			43.0			68.0		
19.0			44.0			69.0		
20.0			45.0			70.0		
21.0			46.0			71.0		
22.0			47.0			72.0		
23.0			48.0			73.0		
24.0			49.0			74.0		
25.0			50.0			75.0		

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

J. G. Hartman Date 9/10/79
Chairman of PORC

Unit 2 PORC Recommends Approval

NA Date
Chairman of PORC

Unit 1 Superintendent Approval

J. H. Deering Date 9/10/79

Unit 2 Superintendent Approval

NA Date

Manager Generation Quality Assurance Approval

NA Date

TMI 55-A Rev 8/77

1122 356

7910100 205

P

THREE MILE ISLAND NUCLEAR STATION
UNIT #1 ABNORMAL PROCEDURE 1203-1
LOAD REJECTION

1.1 SYMPTOMS

1. Outgoing 230 KV line breakers open (indication on SS-1 panel).
2. Reactor power decreasing.
3. Increase in pressurizer level and reactor pressure.
4. Megawatts electric decreasing to auxiliary load. (Reactor/Turbine Generator remain on line supplying \sim 50 to 100 MW of Unit #1 and Unit #2 auxiliary load.)
5. High turbine header pressure, lifting of secondary steam safety valves.
6. Increase in generator frequency of 3 to 4 cycles.

1.2 IMMEDIATE ACTION

A. Automatic Action

1. The ICS trips to tracking because the turbine control trips to MANUAL on power-load imbalance relay actuation.
2. ICS ULD runs back in tracking mode to 15% Reactor Power. (In approximately 2 or 3 minutes.)
3. EHC speed control and power imbalance relay, control turbine speed and frequency to prevent overspeed trip of turbine.
4. Secondary safety valves and atmospheric dump valves open.
5. Turbine bypass valves open.
6. Pressurizer spray valve opens at 2205 psig.
7. Pressurizer power operated relief valve may open.
8. Possible high pressure reactor trip.

B. Manual Actions

NOTE: An asterisk (*) indicates that the parameter valve must be reverified as the first step in the follow-up action. Use redundant indication where possible.

- *1. Verify feedwater flow and reactor power are being reduced to supply station service MW_e load (~ 50 to $100 MW_e$).
2. If additional spray flow is required to slow pressure increase, place spray valve in manual and open as required.
- *3. Verify that the spray valve recloses when pressure returns to <2205 psig.
4. If diamond power or reactor master is on hand, run rods in manually to 12% neutron power. Rate of rod insertion should be that required to maintain reactor coolant system pressure between 2055 and 2255 psig.
5. If any feedwater stations are on hand, total feedwater should be reduced manually to that corresponding to 15% neutron power (approximately 1.0×10^6 lb/hr). Rate of feedwater reduction should be that required to maintain RCS pressure between 2055 and 2255 psig.
6. If reactor or generator trips implement 1202-2, Station Blackout.

1.3 FOLLOW-UP ACTION

The objective of the load rejection procedure is to observe feedwater, main steam pressure, reactor coolant pressure to assure that the unit stabilizes at $\sim 15\%$ reactor power. Prepare to implement the blackout procedure. Determine and correct the cause for the load rejection and resynchronize with the system.

1. Using redundant indication and/or other plant parameters reverify the steps in manual action that are marked with an asterisk (*).
2. Monitor pressurizer level, RC pressure, RC temperature, OTSG level, and steam header pressure.
3. Verify pressurizer heaters and spray control RC pressure at 2155 psig. With steam header pressure setpoint at 885 psig, header pressure should be between 900 and 960 psig. Adjust makeup and letdown flows to control pressurizer level at 220". Verify feed flow is controlling OTSG level at ≥ 30 ".
4. Start one diesel generator and leave running continuously until two 230 KV lines are restored.

CAUTION: Do not parallel the diesel with the auxiliary transformer at this time.

5. Verify secondary safety valves have closed and PORV is not leaking. Check RC drain tank level, pressure and temperature for increasing trend.
6. While carrying auxiliary load, monitor turbine generator for vibration, evidence of rubbing, high exhaust temperature ($>175^{\circ}$) or other conditions that might require turbine generator shutdown.

NOTE: A turbine generator trip will cause a station blackout.

7. Check the water level in high and low pressure feedwater heaters at the local sightglass to ensure proper heater drain valve operation.
8. In the event the generator trips, a station blackout will occur. Prepare to implement EP 1202-2.

9. Notify the duty superintendent and, if necessary, call standby personnel to assist in responding to possible loss of power.
10. Contact dispatcher and send auxiliary operator to the 230 KV substation to attempt to determine cause for the separation from the system.

CAUTION: Use caution when stopping feedpump, heat drain Pp or condensate Pp. Loss of the other feed pump will cause reactor trip and blackout.

11. Within one hour, refer to the reporting procedure and determine if reporting is required.
12. Due to the buildup of Xenon to peak conditions the following actions should be considered depending on the time of core life.
 - a. 0-EFPD to 230 EFPD
A combination of rod withdrawal and deboration should be used to overcome peak Xenon.
 - b. 230 EFPD to 280 EFPD
During this period rod worth and boron worth may not be sufficient to overcome peak Xenon. Unless reactor power is increased, to burnout Xenon, the reactor core may go subcritical during peak Xenon conditions. Notify the dispatcher of this condition so that he will be aware of the urgency of restoring interconnecting lines.
13. When conditions permit and permission is received from dispatcher, use the synscope in the substation control building and reclose a line breaker.

NOTE: The turbine will pickup load rapidly if system frequency is low.

14. If unable to synchronize with the system and the diesel generator has been running idle for a period of time, load should be applied. Synchronize with the 4 KV ES bus then trip the bus feeder breaker.

1122 361