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5/1(m) 144
2203-2.1
Revision 2
06/08/78

THREE MILE ISLAND NUCLEAR STATION UNIT #2 ABNORMAL PROCEDURE 2203-2.1 LOAD REJECTION

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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

Unit 2 PORC Recommends Approval

J. F. Helberich Date 6/3/78
Chairman of PORC

Unit 1 Superintendent Approval

NA Date

Unit 2 Superintendent Approval

J. F. Helberich Date 6/3/78

Manager Generation Quality Assurance Approval

NA Date

THREE MILE ISLAND NUCLEAR STATION
UNIT #2 ABNORMAL PROCEDURE 2203-2.1

LOAD REJECTION

1.0 SYMPTOMS

- 1.1 Outgoing 500KV line breakers open.
- 1.2 Reactor power decreasing.
- 1.3 Increase in Pressurizer level and Reactor pressure.
- 1.4 Load decreases to station service, 50-100MW, if all outgoing 230KV and 500KV lines are lost.
- 1.5 If 230KV substation outgoing lines and the auto transformer tie is available, the reactor and turbine generator remain on line supplying reduced load.
- 1.6 Possible high turbine header pressure, lifting of main steam safety valves, which will cause a reduction in pressurizer level and decrease in Tave.
- 1.7 Possible increase in generator frequency.

2.0 IMMEDIATE ACTION

A. Automatic Action

1. The ICS trips to track because the turbine control trips to MANUAL on turbine header pressure error.
2. ICS ULD runs back in tracking mode to a Reactor Power corresponding to the reduced load on the unit.
3. Main steam safety valves open.
4. Turbine bypass valves open (If load rejection is great enough).
5. Pressurizer relief valve, RC-R2 may open.

B. Manual Action

1. Verify Feedwater flow and reactor power are being reduced to supply one of the following:
 - a) For loss of outgoing 500KV lines with the auto transformer and 230KV system in service; unit load reduces to approximately 866 MWe or less.
 - b) For loss of both the 500KV and 230KV systems unit load will reduce to less than 100 MWe depending upon the status of Unit 1.

NOTE: These steps are applicable only for loss of both the 230KV and 500KV systems.

2. If diamond power or reactor master is on HAND, insert rods manually to =15% neutron power. Rate of rod insertion should be that required to maintain reactor coolant system pressure between 2055 and 2255 psig.
3. If any feedwater stations are on hand, total feedwater should be reduced manually to that corresponding to 15% neutron power (approximately 1.82×10^5 lb/hr). Rate of feedwater reduction should be that required to maintain RCS pressure between 2055 and 2255 psig.
4. If any of the following ICS stations are in hand (Steam Generator/Reactor Demand, either Feedwater Demand, Main or Startup Feedwater Valve Demand, Feedpump Speed, Reactor Master, and/or Diamond) runback the appropriate ICS stations.

3.0 FOLLOW UP ACTION

- A. Loss of 230KV and 500KV Systems.

1. Monitor pressurizer level, RC pressure, RC temperature, steam generator level, and steam header pressure.
2. Utilize pressurizer heaters and spray to control RC pressure at 2155 psig. With steam header pressure setpoint at 885 psig, header pressure should be 935 psig. Adjust makeup and letdown flows to control pressurizer level at 240". Adjust feed flow to control steam generator level at 30".
3. Perform Surveillance Requirement 4.8.1.1.2 a.4, verifying the diesel starts from ambient conditions, for both diesel generator and at least once per 8 hours thereafter, unless at least one of the inoperable offsite sources is restored to OPERABLE status.
4. Verify main steam safety valves and the electromatic relief valve RC-R2 on the pressurizer have closed.
5. While carrying auxiliary load, monitor turbine generator for vibration, evidence of rubbing, high exhaust temperature ($>175^{\circ}\text{F}$) or other conditions that might require turbine generator shutdown.
6. Reduce Reactor Power manually to match generated MW.
7. Check the water level in high and low pressure feedwater heaters at the local sight glass to ensure proper heater drain valve operation.
8. Loss of the 500KV System.
 1. Reduce load on the unit as directed by the system dispatcher to prevent damage to the 500/230KV auto-transformer as directed by the System Dispatcher.