THREE MILE ISLAND NUCLEAR STATION
UNIT #2 EMERGENCY PROCEDURE 2202-1.10
SHUTDOWN FROM OUTSIDE THE CONTROL ROOM

Table of Effective Pages

Page	Date	Revision	Page	Date	Revision	Page	Date	Revision
1.0	08/04/77	3	26.0			51.0		
2.0	12/23/78	8	27.0			52.0		
3.0	12/23/78	8	28.0			53.0		
4.0	07/12/78	7	29.0			54.0		
5.0	08/04/77	3	30.0			55.0		
6.0	08/04/77	3	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 N/A (Cognizant Dept. Head) Date —	Unit 2 Staff Recommends Approval Approval NA (Cognizant Dept. Head) Date —
Unit 1 PORC Recommends Approval NA (Chairman of PORC) Date —	Unit 2 PORC Recommends Approval J F Hilbish (V. Chairman of PORC) Date 12-21-78
Unit 1 Superintendent Approval NA Date —	Unit 2 Superintendent Approval JB Logan Date 12/23/78

Manager Generation Quality Assurance Approval NA Date —

THREE MILE ISLAND NUCLEAR STATION
UNIT #2 EMERGENCY PROCEDURE 2202-1.10
SHUTDOWN FROM OUTSIDE THE CONTROL ROOM

1.0 SYMPTOMS

1.1 Conditions such as fire or smoke make continued occupancy of the Control Room impossible.

NOTE: It is very improbable that any condition would prevent safe occupancy of the Control Room; however, if such a condition does occur and total evacuation of the Control Room becomes necessary, then the actions provided in this procedure will be followed to achieve hot standby.

2.0 IMMEDIATE ACTION

2.1 Automatic Action - None associated with this event.

2.2 Manual Action.

2.2.1 Make every effort to eliminate the cause for the Control Room evacuation. As soon as the cause has been eliminated, re-enter the Control Room and restore unit control from that location.

2.2.2 Before evacuating the Control Room, complete the following actions:

a) Depress reactor trip button on Panel No. 4.

b) Depress main turbine trip button on Panel No. 5.

c) Trip steam generator feedpump 1A and 1B from Panel No. 5.

NOTE: This will automatically start EF-P-1, the turbine driven emergency feed pump, and EF-P-2A and 2B, motor driven emergency feed pumps.

d) Place Feedwater Pump Turbine Turning Gear Control switches to ON.

e) TRIP all Reactor Coolant Pumps from Panel No. 4.

NOTE: This will introduce the 21' (50% on operate range) setpoint to the feedwater portion of the ICS.

f) CLOSE MU-V376 letdown block valve, from Panel No. 3.

g) OPEN CHV5A and 5B from Panel 8.

h) OPEN MU-V10, and MU-V127 (locally) set boric acid pump counter and batch controller to max and start the boric acid pumps.

NOTE: If the RBAT is the Tech. Spec. Tank, also start WDS-P-3 and open WDS-V111 from Panel 302.

3.0 FOLLOW-UP ACTION

3.1 If the Control Room was evacuated before any or part of the above immediate actions were completed, perform the immediate actions from local stations as indicated below:

Component	C.R. Action	Action Outside C.R. if Unable to Complete in C.R.	Location
Reactor	Trip	Trip A.C. Breakers NOTE: Tripping the Reactor by this method automatically trips the Turbine Generator.	Control Bldg. 305'
F.W. Pump FW-P-1A & 1B	Trip	Depress "Trip" Push Button on local station at FW Pump Turbines	Turbine Bldg. Elev. 281'-6"
Mtr. Driven Emerg. FW Pumps EF-P-2A & 2B	Start	Depress "START" Push Button on local station at Mtr. Driven Emerg. F.W. Pumps	Aux. Bldg. @ MCC 2-11EA 2-21EA

Component	C.R. Action	Action Outside C.R. if Unable to Complete in C.R.	Location
Reactor Coolant Pumps RC-P-1A, 1B 1C and 1D	Stop	"Trip" R.C. Pump Breakers at 6900V Swgr.	Turbine Bldg. Elev. 305'
MU-V-376	Close	Close MU-V-376 from local control station	Aux. Bldg. Elev. 280'6", MU-V16A/B Room
Backup MU Pump	None	Place local CS to STOP	Aux. Bldg. Elev. 281'
MU-V127	None	Open Valve	FH Bldg. Elev. 305' Letdown Valve Alley
MU-V10	Open	Open Valve	" "
CA-V140	None	Check/Insure Valve Open	FH Bldg. Elev. 347' CA Area
CA-P-4A/B	Start	Start from Panel 303	FH Bldg. Elev. 347' CA Area

NOTE: If the RBAT is the Tech. Spec. Boron source WDS-P-3 must be started and WDS-V111 opened from pal. 302

3.2 Upon leaving the Control Room, immediately man the following locations with minimum shift personnel:

a) Shift Foreman and one Control Room Operator (CRO) - Patch Panel located in Control Bldg., Cable Room Elev. 305' to monitor unit parameters and direct the shutdown from outside the Control Room.

b) 1 Man - Auxiliary Building elevation 290'-6" for Reactor Coolant System inventory control and boration.

c) 1 Man - Control Building Area West Elevation 282'-6" for emergency feedwater control EF-P-1, 2A and 2B and/or EF-V32A and V32B.

d) 1 Man - Control Building Area West elevation 282'-6" for atmospheric vent valve control, MS-V3A and 3B.

3.3 Cross tie the Nuclear and Turbine Plant channels of the M&I powered phone circuits in the Instrument Shop.

3.4 CLOSE MU-V154, Pressurizer level control valve isolation. Manually control pressurizer level with MU-V155, Pressurizer level control valve bypass.

CAUTION: During natural circulation cooldown do not exceed a makeup rate of 50 gpm or 1000 gallons for a 1 hour period.

3.5 Monitor Pressurizer Level and MU Tank Level. Open/Close DH-V5A and B as necessary to control MU Tank Level. Pressurizer Level Control can be accomplished by controlling Pressurizer Level MU Flow with MU-V155. If necessary to shift or start additional makeup pumps accomplish by using local control switches with suction from the MU Tank or the BWST.

3.6 VERIFY feedpump turning gears engage when the turbine reaches zero speed.

3.7 When the main turbine rotor has stopped rotating, verify turning gear engages.

NOTE: The reactor is in the hot standby condition when it is sub-critical by at least one percent $\Delta k/k$ and Tave is greater than 525°F.

3.8 If the Unit is to remain in hot standby condition, maintain the following parameters:

Parameter	Readout Range	Operating Point	Control Station
Pressurizer Level	0-400"	100"	MU-V155 MU Pump Discharge Valve Alley
Makeup Tank Level	0-100"	73"	MU-V119, MU-V319, MU-V8 Letdown Valve Alley or DH-V5A (B)(Aux Bldg 281')
RCS Pressure	0-2500 psig	2155 psig	Operate Pzr. Heater Breakers and Spray Valve RC-V1 (PB at Patch Panel) as required
RCS Temperature	50-650 to Loop A	525°F	MS-V3A
	50-650 to Loop B	525°F	MS-V3B CBA West
OTSG Level	0-100% Operating Range OTSG A	50%	EF-V32A (CBA-West) PB's or EF-V33A (CBA-East)
	0-100% Operating Range OTSG B	50%	EF-V32B (CBA-West) PB's or EF-V33B (CBA-East)

3.9 While maintaining 525°F, the CRO with the Shift Supervisor/Foreman will attempt to reman the Control Room and prove the ability to adequately control the parameters in step 3.8 above. If possible terminate this procedure and remain in Hot Standby with normal operating procedures.

3.10 If the unit is to be cooled down, continue per procedures 2103-3.1, Unit Shutdown, and 2102-3.2, Unit Cooldown, with the exception of controlling plant parameters from the control stations listed in Section 3.8 vice the Control Room and local controls as required.

NOTE 1: Safety Injection RCS pressure low channels can be bypassed as follows from outside the control room. Physically close the following relays by pressing against the relay's magnet:

1. Bistable auxiliary relay 62X/RC1A in Cabinet 133.
2. Bypass relay 43/RC1A in Cabinet 133.
3. Bistable auxiliary relay 62X/RC2A in Cabinet 198.
4. Bypass relay 43/RC2A in Cabinet 198.
5. Bistable auxiliary relay 62X/RC3A in Cabinet 199.
6. Bypass relay 43/RC3A in Cabinet 199.
7. Bistable auxiliary relay 62X/RC1B in Cabinet 201.
8. Bypass relay 43/RC1B in Cabinet 201.
9. Bistable auxiliary relay 62X/RC2B in Cabinet 202.
10. Bypass relay 43/RC2B in Cabinet 202.
11. Bistable auxiliary relay 62X/RC3B in Cabinet 203.
12. Bypass relay 43/RC3B in Cabinet 203.

NOTE 2: The "69" switches for the standby CO/CO Boostar pump pair (HD pump) must be placed to trip prior to tripping an operating CO pump pair (HD pump) to prevent the standby pump pair from auto starting.