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CENTRAL FILE
 THREE MILE ISLAND NUCLEAR STATION
 UNIT #2 EMERGENCY PROCEDURE 2202-3.3
 EARTHQUAKE

2202-3.3
 Revision 2
 09/12/78

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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

RP Warren Date 9/11/78
 V- Chairman of PORC

Unit 1 Superintendent Approval

NA Date

Unit 2 Superintendent Approval

Q. Schaefer Date 9/12/78

Manager Generation Quality Assurance Approval NA Date

THREE MILE ISLAND NUCLEAR STATION
UNIT #2 EMERGENCY PROCEDURE 2202.3.3
EARTHQUAKE

1.0 SYMPTOMS

- 1.1 "Seismic Trigger On" Alarm (8.E13) in the Control Room will illuminate when ground acceleration exceeds 0.025g horizontal or 0.025g vertical. The "Seismic Recorder On" Alarm (8.E12) will illuminate when a ground acceleration of 0.01g has been sensed.
- 1.2 The event Indicator on the front panel of the Strong Motion recording system in the Cable Room changes from black to white and the Yellow Event Alarm indicator lamp illuminates when the Strong Motion recording system has sensed a ground acceleration of 0.01g. The Yellow Event Alarm Indicator lamp will extinguish approximately ten seconds after the last acceleration above 0.01g.
- 1.3 Normal plant process instrumentation will indicate the effect of an earthquake on operating systems in the Unit.
- 1.4 Ground motions from the earthquake may be felt by personnel at the nuclear station.

2.0 IMMEDIATE ACTION

A. Automatic Action:

1. The strong motion recording system will record ground acceleration greater than 0.01g on a magnetic tape cassette. It will also record the response to this acceleration at the ring girder of the Reactor Building, on another magnetic tape cassette.

2. Abnormal conditions or faults resulting from seismic stress may, depending on severity, automatically trip components, or systems within the Unit and may initiate an automatic reactor trip.

NOTE: Structures, components, and systems required to permit safe shutdown of the Unit are designed to withstand the stresses which will result from the maximum hypothetical earthquake.

8. Manual Action.

1. After the strong motion recording system indicates that it has recorded a ground acceleration which has not exceeded:
0.025g horizontal acceleration and/or 0.025g vertical acceleration, evaluate the data contained on the strong motion recording system magnetic tape cassettes as soon as it is convenient to do so, and allow normal Unit operation to continue.
2. When ground acceleration of 0.025g horizontal and/or 0.025g vertical is exceeded, make an immediate analysis of the data contained on the strong motion recording system's magnetic tape cassette. (Refer to the Earthquake Emergency Plan in Site Emergency Plan Administrative Procedure AP 1004).
3. When data evaluation shows that an earthquake has occurred, but the peak amplitude of the earthquake does not exceed 0.06g horizontal and/or 0.04g vertical acceleration maintain Unit operation. Take whatever steps are necessary

to respond to the faults occurring in components or systems within the plant as a result of the earthquake.

4. When data evaluation shows that an earthquake has occurred, and the peak amplitude of the earthquake has exceeded 0.06g horizontal and/or 0.04g vertical acceleration take normal actions to initiate an orderly and controlled power reduction to the hot Standby (Mode III) condition. Also take whatever steps are necessary to respond to the faults occurring in components or systems within the Unit as a result of the earthquake.

NOTE: If steam generator level and/or pressure instrumentation in the Control Room is lost, dispatch an Aux Operator to monitor those levels from the Patch Panel in the Control Building at 305 feet elevation.

5. When data evaluation shows that an earthquake has occurred, and the peak amplitude of the earthquake has exceeded Safe Shutdown Earthquake limits (0.12g horizontal acceleration and/or 0.08g vertical acceleration) take all actions, necessary to affect a Unit cooldown to cold shutdown condition. Also take whatever steps are necessary to respond to the fault occurring in components, or systems within the Unit as a result of the earthquake.

3.0 FOLLOW UP ACTION

- 3.1 Any time data evaluation shows that an earthquake has occurred, the duty lead engineer will be notified of the event.

- 3.2 Anytime data evaluation shows that an earthquake has occurred,
- replace the magnetic tape cassettes from the strong motion recording system with new cassettes. Then place a record of calibration on the new magnetic tape cassettes.
- 3.3 If the peak amplitude of the earthquake was great enough to required Unit Shutdown, remove the magnetic erasure clips from the peak reading accelerographs, located in the Unit as shown in Table 1. Replace these clips with new clips and develop and evaluate the removed clips. (Perform these actions in the manner described in the Earthquake Emergency Plan in Site Emergency Plan Administrative Procedure AP 1004, Section 10). Also, evaluate the Triaxial Spectrum Response Recorder in accordance with the Manufacturers' Instruction Manual.
- 3.4 Submit a report to the NRC pursuant to Technical Specification 4.3.3.3.2.

TABLE 1

Peak Reading Accelerograph (PRA) Locations

PRA attached to RC Pump 1A in the Reactor Building.

PRA attached to RC-P-1A Cold Leg in the Reactor Building.

PRA attached to Switchgear 2-1E in the Auxiliary Building, 328' elevation.

Triaxial Spectrum Response Recorder Location

Tendon access gallery in Unit II.