EARTHQUAKE

1.0 ENTRY CONDITIONS

IF an earthquake is suspected,

AND seismic recorder indicates a seismic event has taken place,

THEN use this procedure.

2.0 IMMEDIATE ACTIONS

NOTE
There are no immediate actions for this procedure.

Approved by MNPO/ [signature] for ILWilson Date 10/1/98
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3.0 FOLLOW-UP ACTIONS

ACTIONS	DETAILS
3.1 ___ Notify personnel of plant conditions.	• ___ STA • ___ Plant Operators • ___ NSM (evaluate plant conditions for potential entry into the Emergency Plan)
3.2 ___ IF the Rx is NOT critical, THEN **GO TO** Step 3.7 in this procedure.	
3.3 ___ IF > 1 asymmetric control rod exists, THEN trip the Rx and **CONCURRENTLY PERFORM** EOP-2, Vital System Status Verification, beginning with Step 2.1	
3.4 ___ Verify quadrant power tilt is within limits. See COLR. ___ IF quadrant power tilt is NOT within limits, THEN trip the Rx and **CONCURRENTLY PERFORM** EOP-2, Vital System Status Verification, beginning with Step 2.1	

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ACTIONS		DETAILS
3.5	___ Verify imbalance within limits. See OP-103D, Withdrawal Limit Curves. ___ IF imbalance is NOT within limits, THEN trip the Rx and **CONCURRENTLY PERFORM** EOP-2, Vital System Status Verification, beginning with Step 2.1	
3.6	___ IF vibration was NOT due to plant equipment, THEN start a controlled plant shutdown.	• **CONCURRENTLY PERFORM** AP-510, Rapid Power Reduction, beginning with Step 3.1

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ACTIONS	DETAILS
3.7 ___ Verify RCS integrity.	• Monitor available parameters: ___ RCS PRESS ___ PZR level ___ MUT level ___ RB Sump level ___ RCS level • ___ Notify PPO to monitor WD-29-LI "AUX. BLDG. SUMP" level (95 ft AB on "RADWASTE CONTROL PANEL")
___ IF RCS integrity is lost, THEN **CONCURRENTLY PERFORM** AP-520, Loss of RCS Coolant or Pressure.	

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ACTIONS | DETAILS

CAUTION

Explosive conditions may be present in the TB if main generator H_2 containment has been lost.

3.8 ___ Verify main generator H_2 containment.

1 ___ Review main generator H_2 pressure.

2 ___ Determine if Non-1E battery charger is unavailable.

___ IF main generator H_2 containment is degraded or lost,
AND the following exist:

___ Main generator H_2 pressure exists

___ Main generator is not on line

THEN purge the main generator.

1 ___ IF TB evacuation is required, THEN perform the following:

___ Notify plant personnel over PA.

___ Repeat PA announcement.

2 ___ Notify SPO to **CONCURRENTLY PERFORM** EOP-14, Enclosure 14, Station Blackout Main Generator Purging.

3.9 ___ Verify BWST is not in recirculation with SF pumps.

___ IF the BWST is in recirculation with SF pumps,
THEN stop recirculation.

1 ___ Stop recirculation.

2 ___ Notify PPO to ensure SFV-13 "BWST Supply Iso" is closed (119 ft AB by SFPs).

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ACTIONS	DETAILS
3.10 ___ Notify Chemistry to sample for fuel failure.	• ___ RCS • ___ SF pool
3.11 ___ Verify SF pool integrity.	• ___ Observe SF pool level • ___ Notify PPO to inspect SF pool liner telltale drains (95 ft AB MUP cubicles).
___ IF SF pool leakage has increased, THEN contact TSC for guidance.	
3.12 ___ IF refueling canal level is lowering, THEN **CONCURRENTLY PERFORM** AP-1080, Refueling Canal Level Decrease, beginning with Step 3.1	

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ACTIONS	DETAILS
3.13 ___ IF at any time, it becomes necessary to manually energize an electrical bus, THEN ensure bus is capable of being energized.	• ___ Notify Maintenance to inspect switchgear and internals for damage. • ___ Ensure DC power and protective relaying is available.

NOTE

Seismic activity may result in spurious operation of the sudden pressure relays for the Off-Site Power Transformer or the BEST resulting in a loss of off-site power.

3.14 ___ Verify ES 4160V buses are energized.

___ IF either ES 4160V bus is NOT energized, THEN **CONCURRENTLY PERFORM** AP-770, Diesel Generator Actuation, beginning with Step 3.1

Applicable carry-over steps:
3.13 IF it becomes necessary to manually energize an electrical bus...

ACTIONS	DETAILS

NOTE

Consider spurious actuation due to seismic activity when evaluating plant alarms.

3.15 ___ Review available plant parameters.

- ___ Review sump levels, radiation monitors and tank levels for possible leaks.
- ___ Observe Control Room TEMP.
- ___ Review system status relative to alarms, lockouts and configurations that may result from relay chatter.

  See Enclosure 1, Potential Spurious Alarms.
- ___ Review containment integrity.

3.16 ___ Notify PPO to perform a primary plant walk down.

- Verify power is available to any waste gas compressor (95 ft AB on "RADWASTE CONTROL PANEL"):

  ___ WDP-1A

  ___ WDP-1B
- ___ Walk down primary plant structures and equipment to determine if damage inhibits the safe operation of plant equipment.

Applicable carry-over steps:
3.13 IF it becomes necessary to manually energize an electrical bus...

ACTIONS	DETAILS
3.17 ___ Notify SPO to perform a secondary plant walk down.	• ___ Observe H_2 tank for possible leaks. • Observe FSTs for leaks. ___ FST-1A ___ FST-1B • Determine if the following equipment is accessible and manual operation is NOT inhibited: ___ ARV-48 "B CONDENSER VACUUM BKR" (119 ft TB Above C Waterbox) ___ ARV-49 "A CONDENSER VACUUM BKR" (119 ft TB Above B Waterbox) ___ FSV-918 "FST to CDT-1 Cross-Tie Iso" (119 ft Berm by FST-1A) ___ MSV-25 "A OTSG Atmospheric Dump" (119 ft IB) ___ MSV-26 "B OTSG Atmospheric Dump" (119 ft IB) ___ EFV-36 "EFW & AFW Suction Iso From Hotwell" (95 ft TB between C and D inlet waterboxes) • Verify proper operation of the in-service IA dryer (95 ft TB): ___ IADR-1 ___ IADR-2 • ___ Walk down secondary plant structures and equipment to determine if damage inhibits the safe operation of plant equipment.

Applicable carry-over steps:
3.13 IF it becomes necessary to manually energize an electrical bus...

ACTIONS	DETAILS
3.18 ___ Review current plant activities for any actions that may have caused the vibrations.	
3.19 ___ Evaluate results of plant walk downs and initiate necessary actions.	• ___ IF required equipment is NOT accessible or manual operation is inhibited, THEN initiate action to establish access and restore manual operation capability. • ___ IF an IA dryer is NOT available, THEN initiate action to periodically blow down air receivers. • ___ IF Control Room TEMP is NOT between 70 and 80°F, THEN initiate action to operate CHHE-1A or CHHE-1B as required. • ___ IF power is NOT available to a waste gas compressor, THEN consider aligning WG header to AB ventilation system based on WG header PRESS. • ___ IF IB is NOT accessible due to high TEMP, AND manual operation of ADVs is required, THEN notify SPO to open IB doors to TB (119 ft TB): ___ H-201 ___ H-202

Applicable carry-over steps:
3.13 IF it becomes necessary to manually energize an electrical bus...

ACTIONS	DETAILS
3.20 ___ IF RCS cooling is by Nat Circ, THEN ensure adequate secondary inventory.	• ___ IF FST-1A is NOT available, THEN begin cooldown within 8 hours to ensure adequate secondary inventory. • ___ Notify SPO to open EFV-36 "EFW & AFW Suction Iso From Hotwell" (95 ft TB between C and D inlet waterboxes). • ___ IF EFV-36 cannot be opened, THEN notify TSC.
3.21 ___ Notify MNPO to determine subsequent actions and additional surveillance requirements based on results of plant reviews and follow-up action.	
3.22 ___ Notify I&C Supervisor to perform PT-378, Functional Testing and Calibration of the Triaxial Time-History Accelographs and Triaxial Seismic Switch, Section 4.2, Action Following a Seismic Event.	
3.23 ___ **EXIT** this procedure.	

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5.0 ENCLOSURE 1 POTENTIAL SPURIOUS ALARMS

ALARM POINT	EQUIPMENT DESCRIPTION	CONDITION
0003	EMERG NUCLEAR SERVICE SEA WATER PP A	LOSS OF DC POWER
0008	EMERG NUCLEAR SERVICE SEA WATER PP B	LOSS OF DC POWER
0012	DECAY HEAT SEA WATER PP A	LOSS OF DC POWER
0013	DECAY HEAT SEA WATER PP A	OVERLOAD
0016	DECAY HEAT SEA WATER PP B	LOSS OF DC POWER
0017	DECAY HEAT SEA WATER PP B	OVERLOAD
0059	REACTOR BUILDING SPRAY PUMP A	OVERLOAD
0060	REACTOR BUILDING SPRAY PUMP B	OVERLOAD
0061	REACTOR BUILDING SPRAY PUMP A	LOSS OF DC POWER
0062	REACTOR BUILDING SPRAY PUMP B	LOSS OF DC POWER
0117	CORE FLOOD TANK B	LEVEL HIGH
0137	CIRCULATING WATER PUMP A	DISCH PRESS HIGH
0212	DECAY HEAT CLOSED CYCLE PUMP A	LOSS OF DC POWER
0213	DECAY HEAT CLOSED CYCLE PUMP B	LOSS OF DC POWER
0223	DECAY HEAT REMOVAL PUMP A	OVERLOAD
0224	DECAY HEAT REMOVAL PUMP B	OVERLOAD
0242	DECAY HEAT REMOVAL PUMP A	LOSS OF DC POWER
0556	4160V ES BUS A	PARALLEL FEED
0559	BREAKER 3206	LOSS OF DC POWER
0563	UNIT AUX XFMR 3 BREAKER 3207	LOSS OF DC POWER
0566	UNIT AUX XFMR 3 BREAKER 3208	LOSS OF DC POWER

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5.0 ENCLOSURE 1 POTENTIAL SPURIOUS ALARMS (CONT'D)

ALARM POINT	EQUIPMENT DESCRIPTION	CONDITION
0569	DIESEL GENERATOR A BREAKER 3209	LOSS OF DC POWER
0572	DIESEL GENERATOR B BREAKER 3210	LOSS OF DC POWER
0575	UNIT 1 BREAKER 3211	LOSS OF DC POWER
0578	UNIT 1 BREAKER 3212	LOSS OF DC POWER
0588	ES AUX XFMR B FEEDER BREAKER 3220	LOSS OF DC POWER
0590	ES AUX XFMR A FEEDER BREAKER 3221	LOSS OF DC POWER
0592	PLANT AUX XFMR 3 FEEDER BREAKER 3222	LOSS OF DC POWER
0609	ES BUS B BREAKER 3310	LOSS OF DC POWER
0612	ES BUS A BREAKER 3311	LOSS OF DC POWER
0646	4160V UNIT BUS A POT XFMR	TROUBLE
0650	4160V ES BUS A POT XFMR	TROUBLE
0652	4160V ES BUS B POT XFMR	TROUBLE
0654	480V ES BUS A POT XFMR	TROUBLE
0656	480V ES B POT XFMR	TROUBLE
0664	480V TURB AUX BUS B POT XFMR	TROUBLE
0670	480V PLANT AUX BUS 3 POT XFMR	TROUBLE
0672	480V HEATING AUX BUS 3 POT XFMR	TROUBLE
0673	ES MCC 3B BREAKER 3340	LOSS OF DC POWER
0674	ES MCC A1 BREAKER 3341	LOSS OF DC POWER
0677	ES MCC AB BREAKER 3361	LOSS OF DC POWER

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5.0 ENCLOSURE 1 POTENTIAL SPURIOUS ALARMS (CONT'D)

ALARM POINT	EQUIPMENT DESCRIPTION	CONDITION
0679	ES MCC AB BREAKER 3360	LOSS OF DC POWER
0713	GEN NEUT GND LOCK OUT RELAY	LOSS OF DC POWER
0714	STEP-UP XFMR/GEN DIFF LOCK OUT RELAY	LOSS OF DC POWER
0715	GEN DIFF LOCK OUT RELAY	LOSS OF DC POWER
0730	BACKUP ES XFMR MASTER TRIP LK\OT RLY	LOSS OF DC POWER
0897	STATION AIR COMPRESSOR A	OVERLOAD
0903	STATION AIR COMPRESSOR B	OVERLOAD
0909	INSTRUMENT AIR COMPRESSOR A	OVERLOAD
0915	INSTRUMENT AIR COMPRESSOR B	OVERLOAD
1032	MAKEUP PUMP 1A	LOSS OF DC POWER
1033	MAKEUP PUMP 1A	OVERLOAD
1039	MAKEUP PUMP 1B	OVERLOAD
1044	MAKEUP PUMP 1C	LOSS OF DC POWER
1045	MAKEUP PUMP 1C	OVERLOAD
1098	MAKEUP PUMP 1B	LOSS OF DC POWER
1099	MAKEUP PUMP 1B	OVERLOAD
1175	REACTOR TRIP LOCKOUT RELAY	LOSS OF DC POWER
1184	4160V ES BUS A CROSS TIE LOCKOUT RLY	LOSS OF DC POWER
1185	4160V ES BUS A CROSS TIE CIRCUIT	LOSS OF DC POWER
1188	4160V ES BUS B CROSS TIE LOCKOUT RLY	LOSS OF DC POWER
1189	4160V ES BUS B CROSS TIE CIRCUIT	LOSS OF DC POWER

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5.0 ENCLOSURE 1 POTENTIAL SPURIOUS ALARMS (CONT'D)

ALARM POINT	EQUIPMENT DESCRIPTION	CONDITION
1259	MOTOR DRIVEN EF PUMP A	LOSS OF DC POWER
1260	MOTOR DRIVEN EF PUMP A	OVERLOAD
1554	CNTRL COMPLX WATER CHILLER A CHHE-1A	LOSS OF DC POWER
1555	CNTRL COMPLX WATER CHILLER B CHHE-1B	LOSS OF DC POWER
1824	EMERG NUC SERV CCC PUMP A (SWP-1A)	OVERLOAD
1827	EMERG NUC SERV CCC PUMP B (SWP-1B)	OVERLOAD
1853	EMERG NUC SERV CCC PUMP A	LOSS OF DC POWER
1854	EMERG NUC SERV CCC PUMP B	LOSS OF DC POWER
1991	4160V RX AUX BUS POT XFMR	TROUBLE