REV. 2

DATE 5/7/79

EMERGENCY PROCEDURE EP- 7

TITLE: LOSS OF OFF-SITE POWER

APPROVALS: PORC(Vice-Chairman) _____ DATE 5/8/79

UNIT SUPT.: _____ DATE 5/7/79

B&W _____ DATE _____ NRC _____ DATE 5-8-79

ALARA _____ DATE 5-6-79

LOSS OF OFF-SITE POWER

PURPOSE: The purpose of this procedure is to provide an interim method for handling a LOSP until such time as the load sequencing/distribution system modifications have been completed and another appropriate procedure is written.

An alternate power supply is run to the pressurizer vent valve (RC-V137) and block valve (RC-V2), but not connected; no attempt is made to power the pressurizer heaters and if the loss is extended, the primary will be intentionally taken solid.

1.0 SYMPTOMS

1.1 Zero volts on 230 KV bus voltmeters on the Electric Control Panel No. 6A.

1.2 2A and 2B Auxiliary Transformer voltage loss alarm.

1.3 Diesel Generator running indication on Panels 26 and 29.

2.0 IMMEDIATE ACTION

2.1 Automatic Action

2.1.1 Instrument air compressors trip

CAUTION: The emergency feedwater and seal injection control valves will only function as long as the reserve air in the air receivers is available, therefore, the instrument air compressors must be restarted as soon as possible.

2.1.2 Diesel Generators DF-X-1A and 1B start and energize the emergency buses.

2.1.3 DH-V5A and 5B open.

2.1.4 NR-P-1A (1B) and 1C (1D) will start.

2.1.5 Two NSCCW pumps start (NS-P-1A and 1B).

2.1.6 IC-P-1A and 1B start.

2.1.7 EF-P-2A and 2B start (if not in "pull to lock") taking suction from CST.

2.1.8 Operating condensate pump trips.

NOTE: To prevent inadvertent initiation of HPI, MU-P-1A switch is tagged in "pull to lock", MU-P-1C breaker is tagged open, and all MU-V16 valve breakers are tagged open.

2.1.9 MU-P-1B will auto start (if not in "Pull-to-Lock").

2.2 Manual Action

NOTES: 1. With loss of the operating condensate pump, natural circulation may be lost before OTSG filling with the EF pump can be established. Therefore, restore OTSG feed as soon as possible and/or refer to EP-34 for loss of N.C.

2. If at any time during the performance of this section, power is restored attempt to return to conditions prior to the loss. A decision to draw a bubble in the pressurizer in accordance with procedure Z-63 should be considered based on existing plant conditions.

2.2.1 Verify that the automatic actions, as listed in 2.1, occur and start necessary equipment which did not start automatically. Stop unnecessary loads started in 2.1, such as the second EF pump, etc.

2.2.2 Restart Instrument Air Compressors.

2.2.3 Verify MU-P-1B is operating and makeup to the RCS through the normal makeup flow path. If necessary for additional makeup capability, untag, start MU-P-1A (requires first untagging and shutting breaker for MU-V16A), and makeup through MU-V16A.

2.2.4 Perform procedure EP-29, Loss of Condenser Vacuum.

2.2.5 Maintain a water supply to the "A" OTSG as necessary to remove heat from the RCS.

A. Start (or check running) EF-P-2A.

B. Establish flow to the "A" OTSG via EF-V4A, V11A, V12A, and recirc. flow to condensate stg. tank via EF-V8A. Verify CO-V87 is open.

NOTE: Attempt to maintain the same OTSG level as prior to the loss of offsite power. Monitor RCS temperature and adjust EF flow to maintain authorized temperature band.

2.2.6 Complete the following steps:

2.2.6.1 Have Electricians connect jumper for RC-V2 and RC-V137 at MCC 2-32B Unit 4 BR and 6 CR to the breaker side of the overload block insuring proper phasing and that the breaker for RC-V2 and RC-V137 are open.

NOTE: If only the "A" Diesel Generator is available, the tie breakers between BUS-2-11E and 2-21E must be closed to energize RC-V2 and RC-V137.

2.2.6.2 Close the alternate feed breaker for RC-V2 and RC-V137 (MCC 2-21EA, Unit 28R).

NOTE: RC-V137 (V2) are to be used as method of relieving RCS pressure should it become necessary.

2.2.6.3 Operate the pressurizer in accordance with procedure Z-63 and take the RCS to a solid condition.

NOTE: Pressurizer heaters will not be available for this operation.

2.2.7 Verify suction supply to the makeup pumps from the makeup tank is available, then close DH-V5A and V5B.

3.0 LONG TERM ACTION

3.1 Attempt to re-establish off-site power by performing Section 4.0 in conjunction with Relay Personnel in the 230 KV Substation House.

3.2 Maintain emergency feedwater flow to the "A" OTSG if the long term loss of condensate pumps is anticipated.

4.0 RESTORATION OF 230 BUS 1 AUX. TRANSFORMER

4.1 Line relay operations are followed by reclosing:

A. For line operations where reclosing is blocked, both buses are fed from multiple sources. Lines should be shot from remote ends. If hot line is indicated, close locally if breaker does not close.

B. If auto transformer line clears, do not shoot unless you are reduced to one source and other attempts fail to close.

4.2 For loss of one bus contact both control rooms. Have all lockouts reset and ask which ones were up. While waiting for report, check for buss diff targets and respond as follows:

A. Diff targets found - do not wait for control room response. Shoot bus with 1091 line breaker. If trip again, locate fault.

B. No diff targets:

1. Unit #1 reports transformer lockouts up (should have reset per above) and bus lockouts. Isolate transformer by opening S1A-08 or S1B-04. While isolating, have Unit #2 reset lockouts. When isolated, shoot but with 1091 breaker and close reset of sub.

2. Unit #2 reports transformer lockouts and bus lockouts (should have reset). Shoot bus from 1091 breaker. If it trios again, transformer is failed. Notify control room (#2) that the only feed they have is one remaining. Isolate bank and re-establish bus. (This will not aid plant but will provide system betterment.)

4.3 For loss of both buses, shoot one 1091 breaker. If this fails, shoot other 1091 breaker. If one holds, notify Unit #2 that appropriate low side breaker may be closed after they reset lockouts. Same applies to Unit #1.

TMI #2 Low Side Feeders

#4 Bus - 2A Aux Bank	#6 Bus - 2B Aux Bank
2A-12	2B-12
2A-22	2B-22
2A-62	2B-52
2A-32	2B-32
2A-42	2B-42
2A-1E2	2B-1E2
2A-2E2	2B-2E2

#4 Bus Trip Indication

BC3 Panel - Three white lights out

BC4 Panel - 105102 Trip - Green light

AC4 Panel - 109112 Trip - Green light

AC8 Panel - 1B-12 Trip - Green light

#8 Bus Trip Indication

AC5 Panel - Three white lights out

AC4 Panel - 109102 Trip - Green light

AC7 Panel - 109202 Trip - Green light

AC9 Panel - 1B-02 Trip - Green light

NOTE: Sync switch must be used to close all breakers

S1B-04 and S1A-08 are out back door. S1B-04 is near plant. S1A-08 is near river.

S2A-04 and S2B-08 are out front door and to left. S2A-04 is near plant. S2B-08 is near river.

To reset Unit #1 fault pressure lockout (control room) you must first push reset button on PR panel in Control Room. (208-016)