TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT

ABNORMAL OPERATING INSTRUCTION

AOI-25.2

LOSS OF 120V AC VITAL INSTRUMENT POWER BOARD 1-II

Unit 1

Revision 5

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PORC REVIEW DATE: JUN 19 1987

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Plant Manager

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Reason for revision (include all Instruction Change Form Nos.):

Revised to delete reference to AOI-1 and EOI-0. Streamline Operator actions, and delete erroneous appendices A and B. This revision constitutes a biennial review in accordance with AI-4, Appendix H.

The last page of this instruction is number: 4

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SEQUOYAH NUCLEAR PLANT

PLANT INSTRUCTION REVISION LOG

ABNORMAL OPERATING INSTRUCTION AOI-25.2

REVISION LEVEL	Date Approved	Pages Affected	REASON FOR REVISION (INCLUDE COMMITMENTS AND ALL ICF FORM NUMBERS)
0	09/3/80	All	
1	12/23/83	2,3,9,	
2	09/12/83	All	
3	07/31/84	1,10	
4	10/04/84	2	
5	JUN 19 1987	All	Revised to delete reference to AOI-1 and EOI-0. Streamline Operator actions, and delete erroneous appendices A and B. This revision constitutes a biennial review in accordance with AI-4, Appendix H.

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I. SYMPTOMS

A. Alarms

1. 120V AC VITAL PWR BD 1-II UV OR BREAKER TRIP

2. 120V AC VITAL INVERTER 1-II ABNORMAL

B. Indications

1. Power Range N-42 failure.

2. Auto and manual Rod Block and Rod Stop due to High Flux Rod Stop.

3. Loss of Steam Flow Portion of Signal to Feedwater control system resulting in failure to control steam generator level, if channel II is selected.

4. Loss of Steam Generator Level Control due to Loss of Input signal to program on steam generators 1 and 4.

5. Possible Reactor Trip due to Steam Generator Level.

6. Malfunction of trip status lights and safeguards systems annunciators.

7. Loss of Auto-Makeup to Volume Control Tank.

C. System Partial Failures

1. Reduction of Feedwater flow due to demand signal from steam generator 2 failing low.

2. If a centrifugal charging pump is in operation, charging flow will increase due to failure of FT-62-93 opening FCV-62-93 and an increase in seal injection flow will occur.

3. Loss of power to Solid State Protection system output relays (Train B) and Channel II input relays (Trains A and B).

4. If pressurizer level is selected to LT-68-335 for control, pressurizer low level auto actions will occur.

I. SYMPTOMS (Continued)

C. System Partial Failures (Continued)

5. If Pressurizer Press. is selected to channel PT-68-334 the sprays will be closed and back-up heaters energized until locked-out by low level signal if LT-68-335 was selected for level control.

6. Loss of Automatic control in AFW System of LCV-3-148, 171 (Level control for steam generators 3 and 4) for motor driven AFW pump 1B-B.

7. Loss of Automatic control in Auxiliary Feed System of LCV-3-173, 174 (Level control for steam generators 1 and 2) for turbine driven AFW pump 1A-S.

NOTE: The above failures are of greatest immediate consequence, for complete loads list of vital board 1-II see Appendix A.

II. AUTOMATIC ACTIONS

A. Possible reactor trip due to low-low S/G level.

III. IMMEDIATE OPERATOR ACTIONS

A. None

IV. SUBSEQUENT OPERATOR ACTIONS

A. If reactor trip occurs then refer to emergency instructions.

B. If reactor does not trip, then, at the NIS panel, defeat the PR rod stop.

C. Assume and maintain manual rod control as required.

NOTE: Do not use bank select; use of bank select will cause the bank overlap program to be lost.

D. Dispatch operator to restore power to failed board (transfer to auxiliary power supply).

IV. SUBSEQUENT OPERATOR ACTIONS (cont)

E. Assume Manual control of steam generator water level on the affected steam generators.

F. Verify Positive Displacement charging pump is not in service since speed controller is failed, shift charging to centrifugal pump if necessary. Transfer control of FCV-62-93 to Auxiliary control room.

G. Verify Pressurizer Level and Pressure are not selected to LT-68-335 and PT-68-334.

H. If power is restored to the failed boards, return systems to normal operating mode.

NOTE: Due to feedback signals and time delays in circuitry, controllers may not control immediately.

I. Evaluate need to shutdown per T.S. 3.8.2.1 if power cannot be restored to the affected board. If necessary, commence orderly shutdown to the hot standby condition per GOI-5 and GOI-3. Initiate REP per IP-1 (Engineered Safety Features) as required. Refer to TS 3.8.2.2.

NOTE: Operation may be continued at the discretion of the Manager, Operations Group, with respect to Tech. Spec. section 3.

1. If shutdown is to continue to mode 5, follow GOI-3 with exception: 74-2 valve will require placing Bkr. transfer switch to Aux. to open valve when RCS pressure is below 380 psig.

2. Transfer FCV-74-28 to aux. mode if B train RHR is required for cooldown.

V. REFERENCES

A. TS 3.8.2.1, 3.8.2.2

B. SOI-55 Series

C. 45N706-2

APPENDIX A
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Load List: 120V AC Vital Inst. Power Bd. I-II

SSPS (A) CH II input relays (1-R-46)
SSPS (B) CH II input and train B output relays (1-R-51)
NIS instr. power CH II
NIS control power CH II
Process protection set II (1-R-5)
UHI accumulator CH II isol. valve FCV-87-22
ERCW and containment rad. monitor O-RE-90-134, 1-RE-90-112
Instrument Bus B
Aux. relay rack SSPS aux. relays (1-R-78)
RB isol. valve FCV-32-102A, 102B
Aux. compressor B, AB isol. valve FCV-32-85
Rad. rate meters and 1-RI-90-112
Rad. monitor O-RE-90-126
125V dc vital battery board II instruments
Chlorine detector CLAN-43-205B
Post accident sampling solenoid valves
PCO-65-83 and 87 aux. relays (1-R-78)
Toilet, locker, spreading, and cont. rooms isol. dampers FCO-31A-102,104
FCV-31A-106A, 106B (1-R-78)
BOP process instr. control rack (1-R-131)
AB instr. Bus B
O-FCV-12-79
Containment purge air exhaust rad. monitor 1-RE-90-131
NSSS aux. relay rack, B bus (1-R-55)
Aux. relay rack sep. and aux. relays (1-R-78)
Aux. control panel, B relay bus
Aux. control panel, B instr. bus
Reactor vessel level instrumentation system (1-R-148)
Aux. dryer Train B
Aux. relay rack sep and aux. relays (1-R-77)
BAT A htr. B-B controller TIT-62-245
AB gas treatment fan B-B press. controller
BAT C htr. B-B controller TIT-62-246
Rad. monitor O-RE-90-206
RCP 2 UV and UF relays
Process control group 2 (1-R-17)
Instrument bus 2 (O-M-27B)
Plugmold instr. bus 2 (1-M-3, 1-M-6)
Acoustic flow monitoring
Fire pump 2B-B sep. relays
AB general exhaust fan 1B flow controller
UHI instr. bus 2

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