REV. 0

AS OF DATE 4/29/79

EMERGENCY PROCEDURE EP-16

TITLE: Loss of Source Range Instrumentation

APPROVALS: PORC(Vice-Chairman) [signature] DATE 4/29/79

UNIT SUPT.: _____ DATE _____

B&W [signature] DATE 5/2/79 NRC [signature] DATE 5-8-79

ALARA [signature] DATE _____

RECOMMENDATION 2 OF B&W TRANSMITTAL W-399 SHOULD BE FOLLOWED ASAP ~~—~~ WHILE NI-1 IS STILL OPERABLE, AND INCORPORATED IN THE LATER REV. OF THIS PROCEDURE

STAN.

The above recommendation has been incorporated into Rev. 0. [signature]

LOSS OF INSTRUMENTATION FOR SOURCE RANGE

1.0 SYMPTON

1.1 Loss of indication on both Control Room Source Range instruments.

2.0 IMMEDIATE ACTIONS

2.1 Automatic Actions

2.1.1 None

2.2 Manual Actions

2.2.1 Verify that the Source Range channels loss of indication is due to electronics failure inside the Reactor Building.

A. If it is not, correct the malfunction and restore Source Range indication to the Control Room.

2.2.2 If the loss of Source Range indication is due to electronics failure inside the Reactor Building, perform the following:

A. Verify that the boron concentration of the primary coolant is between 3000 ppm and 4500 ppm by:

1. A mass balance calculation performed at least once per 24 hours.

a. $C_{RF} = C_F - \left[e^{-\frac{V_F}{V_T}} (C_F - C_{RI}) \right]$

b. Where,

C_{RF} = RCS Final Boron Concentration

C_F = Feed Boron Concentration

C_{RI} = RCS Initial Boron Concentration

V_F = Feed Volume

V_T = Makeup Plus the Primary Volume

2. A chemical analysis performed at least once per 7 days.

B. If the boron concentration is determined to be <3000 ppm or >4500 ppm, initiate measures to restore the boron concentration to an acceptable value.

1. Ensure that the BWST and Boric Acid Mix Tanks are sampled in accordance with the present Plant Technical Specifications.

2. Ensure that the RC Bleed Tanks are sampled at least once per 7 days, or prior to their use as a boron addition source if they were used for any purpose other than as a boron addition source.

NOTE: The above two steps on sampling frequencies are to assure that the value for RCS boron concentration can be formulated with relative accuracy until an actual chemical analysis is performed to verify the RCS boron concentration.

2.2.3 Monitor the correlated output signal from the Intermediate Range instrument NI-3 for back-up verification that the core reactivity level is remaining relatively stable and subcritical.

3.0 SUPPLEMENTARY ACTIONS

3.1 Connect a strip chart recorder to NI-4 in the same manner as was performed on NI-3, to provide an alternate backup in the event that NI-3 indication fails.

4.0 REFERENCES

4.1 TMI Unit 2 Technical Specifications.

4.2 B&W Transmittal #W-399 on Alternate Neutron Measurement at TMI-2.

4.3 B&W Letter GEK-001 dated May 1, 1979 on Basis for Tech. Spec. Boron Limits.