

DATE 5/3/79

EMERGENCY PROCEDURE EP-18

TIME: EP-18 RC-V2 stuck open

APPROVALS: PIRC(Vice-Chairman) RP Warner DATE 5/7/79

UNIT SUPT.: 4th Kinder DATE 5/2/79

REN BO Redman DATE 5/14/79 HRC A. S. Junior DATE 5/14/79

ALARA in function DATE 5/14/79

NRC

RC-V2 Stuck Open1.0 Symptoms

- 1.1 Continued decrease in RCS pressure after attempting to close RC-V2.
- 1.2 When attempting to close RC-V2 there is no status light change (indicating valve did not shut).
- 1.3 When attempting to close RC-V2, there is no stabilization of pressure (indicating valve did not shut)

2.0 Immediate Action

2.1 Automatic Action

- 2.1.1 None

2.2 Manual Action

- 2.2.1 Attempt to shut RC-V2. If RC-V2 closes, return pressure and level to the desired band.

CAUTION: If adequate low pressurizer level protection is not available and level cannot be tracked as per EP-21 (Loss of Pressurizer Level Indication), adjust makeup and letdown flow to fill the pressurizer solid.

NOTE: A sudden increase in RCS pressure is a sign of a solid pressurizer condition. Adjust makeup, letdown and pressurizer heaters to control RCS pressure to the ordered normal pressure. Do not exceed the limits of Figure 1.

- 2.2.2 If level can be maintained, attempt to maintain RCS pressure as follows:

- 2.2.2.1 Energize pressurizer heaters as necessary to maintain saturation temperature for the desired pressures.
- 2.2.2.2 Increase makeup flow through MU-V17 and MU-V18 as necessary to maintain RCS pressure.
- 2.2.2.3 Isolate letdown flow by closing MU-V376.
- 2.2.2.4 Close seal return valves MU-V33 (A through D).
- 2.2.2.5 Maintain makeup tank level as necessary, with demineralized (degassed) water and boric acid additions per OP 2104-1.2.

NOTE: Makeup tank additions should be blended to maintain RCS at 3000 ppm.

NOTE: If MUT level decreases to 30", go to step 3.3.

2.2.2.6 Monitor RCS temperature and thermocouple temperatures to the limits as noted below.

- a. Loop A ΔT greater than 20°F.
- b. Loop A T_H increasing for 8 hrs.
- c. Hottest incore thermocouple exceeds 350°F.
- d. Any incore thermocouple increases by more than 30°F in one hour.
- e. RCS pressure shall be kept at least 100 psi above saturation pressure for the third hottest incore thermocouple or the hottest T_H , whichever is more limiting, at all times until a maximum pressure of 1000 psig is reached.

NOTE: If natural circulation is lost implement EP-34.

2.3 Attempt alternate methods to close RC-V2 as outlined below:

2.3.1 Attempt to close RC-V2 as follows:

- a. If power available at MCC 2-32B Switchgear, attempt to reset thermal device and/or breaker. Attempt to close RC-V2.

NOTE: Health Physics will assist in monitoring radiation levels and controlling stay times during emergency entry to 2-32B Switchgear.

- b. If power is lost to 2-32B, connect temporary power to RC-V2 in accordance with EP-7. Attempt to close RC-V2. !

3.0 Follow Up Actions

- 3.1 If the methods outlined in 2.2.1 or 2.3 are not successful in closing RC-V2, maintain pressurizer level and RCS pressure and temperature as per Section 2.2.2.6, a-e, and Figure I by utilizing the step outlined in 2.2.2 as necessary. Continue in this mode until 2.3 is successful.

NOTE: Depending on heater capacity, blowdown rate, and operator ability to control pressure, the pressurizer level will likely increase until the pressurizer is solid. In that case adjust makeup, letdown and pressurizer heaters to control RCS pressure to the ordered normal pressure. Do not exceed the limits of Figure 1.

3.2 If the methods outlined in 2.2.1 or 2.3 are successful in closing RC-V2 restore RCS pressure and pressurizer level to normal lineup. If the pressurizer was solid redraw a bubble IAW Z-63.

3.3 If makeup tank level cannot be maintained perform the following:

3.3.1 Open DH-V5A & B.

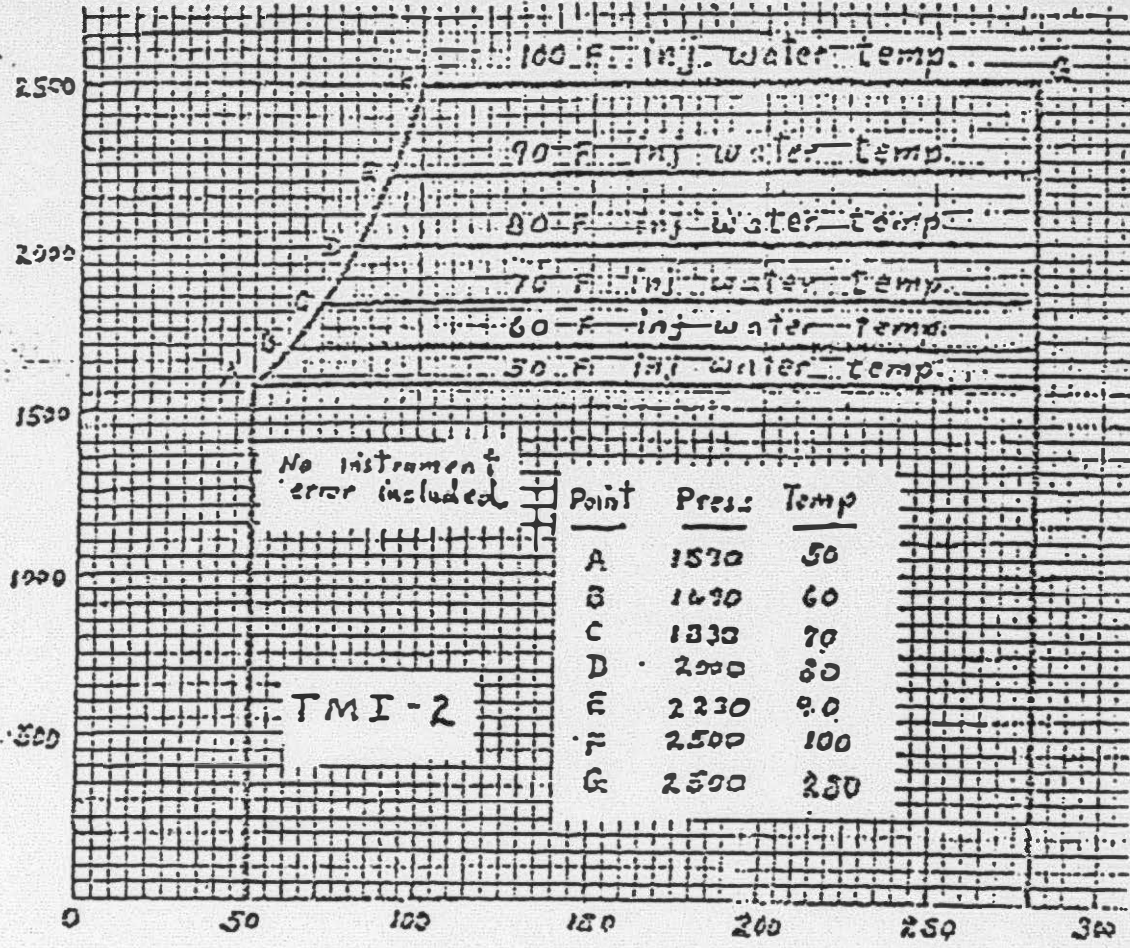
3.3.2 If HPI flow is greater than 100 GPM/PUMP close the recirculation valve (MU-V36 or MU-V37).

3.4 CAUTION: Prior to proceeding to Step 3.4.1 (DHR initiation) approval must be obtained from R. C. Arnold or J. Herbein.

NOTE: Ensure H.P. is notified of imminent operation of DHR system and associated changes in RAD levels in the Auxiliary Building.

3.4.1 If BWST level decreases to 10 ft., depressurize to 320 psig and initiate low pressure injection in accordance with EP-33.

RC PRESS. - PSIG



RC Cold leg TEMP. - °F (T_c)

ALLOWABLE OPERATING ENVELOPE FOR REACTOR
VESSEL NGT LIMITS

Prepared by Robert A. H. 5-3-79
 Reviewed by C. E. H. 5-3-79
 Approved by Robert A. H.