

Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381-2000

10 CFR 55.40

DEC 0 4 2002

Mr. Luis A. Reyes Regional Administrator, NRC Region II Atlanta Federal Center 61 Forsyth St., Suite 23T85 Atlanta, Georgia 30303

Dear Mr. Reyes:

In the Matter of the Tennessee Valley Authority

Docket No. 50-390

WATTS BAR NUCLEAR PLANT (WBN) UNIT 1 - REACTOR AND SENIOR REACTOR OPERATOR INITIAL EXAMINATIONS - 50-390/2002-301

Beginning on November 26, 2002, license examinations were initiated to a group of reactor operator (RO) and senior reactor operator (SRO) candidates at WBN. Provided in the enclosure to this letter are post-examination comments related to 3 questions on the written examinations. These comments are provided in accordance with Examination Standard (ES) 501, "Initial Post-Examination Activities," of NUREG 1021, "Operator Licensing Examination Standards for Power Reactors."

Should you require additional information regarding this matter, please contact Randy Evans at (423) 365-8989.

Sincerely,

P. L. Pace

Manager, Site Licensing and Industry Affairs

Enclosure cc: Page 2

U.S. Nuclear Regulatory Commission Page 2

DEC 0 4 2002

Enclosure

cc (w/o Enclosure):

NRC Resident Inspector Watts Bar Nuclear Plant 1260 Nuclear Plant Road Spring City, Tennessee 37381

Mr. L. Mark Padovan, Senior Project Manager
U.S. Nuclear Regulatory Commission
MS 08G9
One White Flint North
11555 Rockville Pike
Rockville, Maryland 20852-2739

cc (Enclosure):

U.S. Nuclear Regulatory Commission, Region II ATTN: Mr. Michael E. Ernstes Chief, Operator Licensing and Human Performance Branch Sam Nunn Atlanta Federal Center 61 Forsyth St., Suite 23T85 Atlanta, Georgia 30303

U.S. Nuclear Regulatory Commission, Region II ATTN: Mr. Lee R. Miller Sam Nunn Atlanta Federal Center 61 Forsyth St., Suite 23T85 Atlanta, Georgia 30303

Enclosure

Comments Related to Examination Questions

FACILITY COMMENTS FOR NRC WRITTEN EXAMINATION WATTS BAR NUCLEAR 11/26/2002

Question #	Comment	Associated References
SRO 6	Accept two correct answers. Both alternative C and D are correct. The stem asks for the correct method to realign the rod to its associated bank, thus both C and D alternatives provide correct steps to accomplish realignment. The differences between the alternatives is simply a matter of how many procedural steps are listed in the alternative. There are no incorrect elements in alternative D.	AOI-2, "Malfunction of Reactor Control System", section 3.4

6. Unit 1 was at 25% power and ramping up when the RO noticed that one of the Bank C control rods is 13 steps below the other rods in Bank C which are at 215 steps.

At 0900, immediately after discovery, power assension was halted.

At 0945, the rod was determined to have an electrical problem which was repaired.

At 1015, the management staff has concurred with realignment of the misaligned rod in accordance with AOI-2, Malfunction of the Reactor Control System.

Which ONE of the following outlines the method of realigment?

- A. Record information from Bank Overlap Unit, step counters, and P/A converter. Disconnect lift coil for the affected rod, reset step counters, select Bank C and insert Bank C control rods.
- B. Disconnect lift coil of the affected rod, select Bank C and insert Bank C.
- C. Record information from Bank Overlap Unit, step counters, and P/A converter. Disconnect all lift coils in Bank C except the affected rod, reset step counters, select Bank C and withdraw affected control rod.
- D. Disconnect all lift coils in Bank C except the affected rod, select Bank C and withdraw the affected rod.

TENNESSEE VALLEY AUTHORITY WATTS BAR NUCLEAR PLANT

ABNORMAL OPERATING INSTRUCTION

AOI-2

MALFUNCTION OF REACTOR CONTROL SYSTEM

Revision 25

Unit 1

QUALITY RELATED

REQUESTED BY:	C.`t	Dale Greer	
SPONSORING ORGA	NIZATION:	Operations	
APPROVED BY:	Benjami	n F. McNew, Jr.	
		Effective Date:	10/31/02

LEVEL OF USE: CONTINUOUS

WBN	MALFUNCTION OF REACTOR CONTROL SYSTEM	AOI-2 Revision 25 Page 5 of 49

3.0 OPERATOR ACTIONS <u>ACTION/EXPECTED RESPONSE</u>

RESPONSE NOT OBTAINED

3.1 Diagnostics

lF	GO TO Subsection
Continuous Rod Withdrawal/Insertion	3.2
Instrument failure (e.g. T-avg, NIS, PT-1-73) with Rod Control in MAN	3.2
Dropped RCCA	3.3
RCCA Misalignment	3.4
Rod Position Indicator (RPI) Malfunction	3.5
Failure of Control Rods to Move in AUTO	3.6

MALFUNCTION OF REACTOR CONTROL SYSTEM

AOI-2 Revision 25 Page 22 of 49

3.4 RCCA Misalignment (Continued)

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE

Control rods in MAN position will be used to align affected bank to misaligned RCCA.

- 12. **DETERMINE** if affected bank can be aligned to misaligned RCCA(s) within one hour: control bank,
 - Misaligned RCCA(s) in control bank.
 - Bank overlap can be maintained during alignment.
 - The misaligned RCCA is above the affected banks insertion limit.
 - Reactor engineering agrees.

IF greater than one hour will be required to align RCCA OR misaligned RCCA(s) NOT in

THEN

** GO TO NOTE prior to Step 21.

MALFUNCTION OF REACTOR CONTROL SYSTEM

AOI-2 Revision 25 Page 26 of 49

3.4 RCCA Misalignment (Continued)

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE

- Rod movement in the inserted direction is permissible if rod movement does not cause further misalignment.
- The following aligns misaligned RCCA to affected bank.
- 21. **ADJUST** turbine load to MAINTAIN T-ref and T-avg within 3°.
- 22. **DETERMINE** actual RCCA position as follows:
 - a. REQUEST Reactor Engineering to evaluate core anomaly and RCCA position.

Indicator (RPI) Malfunction.

- b. NOTIFY STA to perform 1-SI-0-21, Excore QPTR.
- 23. IF Step 22 indicates RPI failure,THEN** GO TO Section 3.5 Rod Position

MALFUNCTION OF REACTOR CONTROL SYSTEM

AOI-2 Revision 25 Page 27 of 49

3.4 RCCA Misalignment (Continued)

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

24 **IF** two or more RCCAs are misaligned by greater than 12 steps,

THEN

** **GO TO** AOI-39, Rapid Load Reduction.

25. **REFER TO** Tech Specs:

- 3.1.5, Rod Group Alignment Limits.
- 3.1.6, Shutdown Bank Insertion Limits.
- 3.1.7, Control Bank Insertion Limits.
- 3,2,3, Axial Flux Difference (AFD).
- 26. **INVESTIGATE** cause of misalignment.

MALFUNCTION OF REACTOR CONTROL SYSTEM

AOI-2 Revision 25 Page 28 of 49

3.4 RCCA Misalignment (Continued)

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

- 27. **INITIATE** repairs to failed equipment.
- 28. **NOTIFY** Operations Duty

 Manager of misaligned RCCA

 prior to recovery.
- 29. **NOTIFY** Reactor Engineering and STA to provide realignment rate considering, as a minimum, the following:
 - Length of time the RCCA has been misaligned.
 - Power level at which recovery will be performed.
- 30. **DO NOT CONTINUE UNTIL** initiating problem has been corrected.

MALFUNCTION OF REACTOR CONTROL SYSTEM

AOI-2 Revision 25 Page 29 of 49

3.4 RCCA Misalignment (Continued)

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE

Computer Points for individual rods are IZM-85-5001 through 5053, and points for banks are U0049 through U0056.

- 31. IF any RCCA misaligned by greater than Tech Spec allowed limit,
 THEN
 OBTAIN approval from Plant Manager or designate prior to raising reactor power.
- 32. **DO NOT CONTINUE UNTIL**the following agree on realignment that involves a reactor power rise:
 - Unit SRO.
 - Shift Manager.
 - Reactor Engineering.
 - STA.

MALFUNCTION OF REACTOR CONTROL SYSTEM

AOI-2 Revision 25 Page 30 of 49

3.4 RCCA Misalignment (Continued)

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

- 33. **RECORD** value of the following just prior to disconnecting lift coils:
 - Affected bank's step counter(s).
 - Computer for RCCAs in affected bank.
 - P/A converter for bank (N/A for shutdown bank) [Aux Inst Room, el 708, 1-PNL-85-R42].
 - Bank overlap counter (N/A for shutdown bank) [control rod drive room, el 782, panel 1-L-122].

NOTE Toggle switch up is disconnected. Toggle switch down is connected.

34. **DISCONNECT** all lift coils in affected bank, EXCEPT for misaligned RCCA.

NOTE Step counter(s) with lift coils disconnected on all rods in the group will not step and need not be reset.

- 35. PLACE affected step counter(s) to position determined in Step 22.
- 36. **PLACE** control rods to bank select for affected bank.

MALFUNCTION OF REACTOR CONTROL SYSTEM

AOI-2 Revision 25 Page 31 of 49

3.4 RCCA Misalignment (Continued)

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE

The following step will cause a CONTROL ROD URGENT FAILURE alarm [86-A].

- 37. **ALIGN** RCCA to affected bank position:
 - USE rod control to position misaligned RCCA to affected bank position determined in Step 33.
 - ADJUST turbine load to MAINTAIN T—ref and T—avg within 3°.

IF RCCA can **NOT** be aligned, THEN:

- a. **RECONNECT** lift coils of affected bank
- b. RESET CONTROL ROD URGENT FAILURE alarm [86-A] using 1-RCAR.
- c. **SET** affected group step counters to original value.
- d. RESET control bank P/A
 converter to its original value
 USING Attachment 1 if misaligned
 RCCA in control bank.
- e. **COMPLY** with Tech Specs:
 - 3.1.5, Rod Group Alignment Limits.
 - 3.1.6, Shutdown Bank Insertion Limits.
 - 3.1.7, Control Bank Insertion Limits.
- f. **ENSURE** control rods in MAN.
- g. NOTIFY Plant Management and Reactor Engineering.
- h. RETURN TO Instruction in effect.

WBN MALFUNCTION OF REACTOR CONTROL SYSTEM	AOI-2 Revision 25 Page 32 of 49
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3.4 RCCA Misalignment (Continued)

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

- 38. **RECONNECT** lift coils of affected bank.
- 39. **ENSURE** the following are reading correct:
 - Bank overlap counter.
 - P/A converter display USING Attachment 1.
 - Group step counters.
 - Computer points.
- 40. RESET CONTROL ROD URGENT FAILURE alarm [86-A] using ROD CONTROL ALARM RESET pushbutton 1-RCAR.
- 41. **ENSURE** control rods in MAN.
- 42. **RESTORE** T-avg and T-ref to within 3°F.

MALFUNCTION OF REACTOR CONTROL SYSTEM

AOI-2 Revision 25 Page 33 of 49

3.4 RCCA Misalignment (Continued)

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

- 43. WHEN plant stabilized,
 THEN
 PERFORM 1-S1-85-2, Reactivity
 Control Systems Movable Control
 Assemblies (Modes 1 and 2) for the
 affected bank.
- 44. PLACE rods in AUTO, if desired.
- 45. **RETURN TO** Instruction in effect.

MALFUNCTION OF REACTOR CONTROL SYSTEM

AOI-2 Revision 25 Page 34 of 49

3.4 RCCA Misalignment (Continued)

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

NOTE

Steps 46 through 58 are actions to be performed if unit is in Modes 3 through 5. This section places the affected RCCA and bank to the fully inserted position.

46. **STOP** rod movement.

OPEN reactor trip breakers.

- 47. **NOTIFY** the following of misaligned RCCA:
 - Unit SRO.
 - SM.
 - · Reactor Engineering.
 - STA.
- 48. **INVESTIGATE** cause of misalignment.
- 49. **INITIATE** repairs to failed equipment.
- 50. **NOTIFY** Operations Duty Manager of misaligned RCCA prior to recovery.
- 51. **DO NOT CONTINUE UNTIL** initiating problem has been corrected.

MALFUNCTION OF REACTOR CONTROL SYSTEM

AOI-2 Revision 25 Page 35 of 49

3.4 RCCA Misalignment (Continued)

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

- 52. **PLACE** ROD BANK SELECT to affected bank select position.
- 53. **INSERT** affected bank UNTIL all of the following:
 - NO rod motion observed on any rods in bank.
 - Misaligned RCCA RPI indicates rod at bottom.
 - Misaligned rod, rod bottom light LIT.
- 54. **SET** affected step counters to "000".
- 55. **EVALUATE** effect on the following:
 - Bank overlap.
 - P/A converter.
 - Bank position and required stepping sequence.

WBN MALFUNCTION OF REACTOR CONTROL SYSTEM

AOI-2 Revision 25 Page 36 of 49

3.4 RCCA Misalignment (Continued)

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

- 56. **CONSIDER** the following:
 - RESET P/A converter USING Attachment 1.
 - NOTIFY MIG to reset bank overlap counter.
- 57. **UPDATE** computer.
- 58. **RETURN TO** Instruction in effect.

- END OF SUBSECTION -

FACILITY COMMENTS FOR NRC WRITTEN EXAMINATION WATTS BAR NUCLEAR 11/26/2002

Question #	Comment	Associated References
SRO 32	Delete question from the examination. The stem does not provide conditions where any alternative is correct. The stated conditions where letdown is isolated with Charging Flow Controller, 1-HIC-62-93, rising, will actually result in a rise in Pressurizer level as opposed to the stated condition that Pressurizer level is "dropping slowly". The reason Pressurizer level will rise under these conditions is 1-FCV-62-93 does not fully close since it has a minimum stop that prevents charging flow from dropping to less that 35 gpm (RCP seal protection).	Annunciator Response Instruction for annunciator window 92-C, CVCS lesson plan 3-OT-SYS062A excerpt.

32.

Given the following:

-Unit 1 is at 100% power

-Pressurizer level is dropping slowly

- -The output of the Pressurizer Level Controller, 1-LIC-68-339, is rising
- -The Charging Flow Controller, 1-HIC-62-93A, is rising

-Charging flow dropping.

-Annuciator 92C, PZR LEVEL LO-HTRS OFF & LTDN CLOSED is illuminated

Which ONE of the following is the cause of the Pressurizer level decrease?

- A. 1-FCV -62-93, charging flow control valve has developed a diaphram leak.
- B. The Charging Flow Controller output, 1-HIC-62-93A, is failing high.
- C. The PZR Level Controller, 1-LIC-68-339, is failing high.
- D. The Tavg input to the PZR is failing high.

SOURCE

1-LS-68-335E/D 1-LS-68-339D **SETPOINT**

17%

PZR LEVEL LO-HTRS OFF & LTDN CLOSED

Probable

Cause:

- 1. Insufficient charging flow
- 2. Excessive letdown flow
- 3. RCS leak
- 4. Instrument malfunction (level or Tavg input)

Corrective

Action:

- [1] CHECK PZR level indication on 1-M-4:
 - 1-LI-68-320
 - 1-LI-68-335A
 - 1-LI-68-339
- [2] IF LETDOWN is NOT in service, THEN ISOLATE CHARGING
- [3] CHECK PZR level and reference level on 1-LR-68-339 [1-M-5].
- [4] IF Malfunction Of Pressurizer Level Control System, THEN GO TO AOI-20, MALFUNCTION OF PRESSURIZER LEVEL CONTROL SYSTEM.
- [5] IF level is low, THEN
 - [a] VERIFY All PZR heaters OFF.
 - [b] VERIFY Letdown orifice 1-FCV-62-72, -73 & -74, CLOSED.
 - [c] VERIFY Letdown isolation 1-FCV-62-69 and -70, CLOSED.
- [6] IF PZR level control system cannot maintain level to program, THEN REFER TO AOI-6, SMALL REACTOR COOLANT SYSTEM LEAK.
- [7] REFER TO Tech Specs.

References:

1-45W600-57-15, 1-47W610-68-5, 1-45W611-68-2, 1-45W760-68-5

AOI-6 AOI-20

X. LESSON BODY

INSTRUCTOR NOTES

- (2) HS(s) in MCR, switchgear, and locally. Currently operate with valves open and power removed.
- (3) Fail "as is".
- (4) A shunt breaker is installed on each of these valves to prevent spurious actuation. MCR will still have indication of valve position.

mm. FCV-62-93 - CCPs Charging Flow Control

- (1) Flow setting derived from PZR level control system.
- (2) HIC(s) located in MCR, Aux CR, locally, and Aux Inst RM (R-18).
- (3) Fails open.
- (4) Local Control
 Local manual control is via
 HIC-62-93B. When selected
 for local a red light beside
 MCR controller is illuminated.
- (5) Manual bypass valves for FCV-62-93 are provided on the discharge of each CCP.

 These allow an alternate means of controlling charging and seal injection flow in the event the normal charging flow control valve failed.

45W600-62-5 47W610-62-2 47W611-62-4

See SOI-62.01 for discussion of local operation Objective 14

Bypass for FCV-62-93 enters charging line downstream of the charging flow element. If bypass valves were leaking by, a mismatch in normal charging/letdown flows could exist.

X. LESSON BODY

INSTRUCTOR NOTES

Minimum Stop

on this valve to prevent closing from spurious signals. The stop ensures minimum of 35 gpm charging flow. A bypass is provided to allow effective flow control at low RCS pressure.

Prevents spurious operation during App. R fire.

Located on local panel L-112

nn. **FT-62-93A:** Provides MCR and local flow indication. Provides control signal for FCV-62-93.

47W610-62.2

FS-62-93-A/B provides input, with ERFDS, to the "Charging Flow Hi/Lo" annunciation. If either 75 gpm orifice valves is open the low alarm is 55 gpm. If both orifice valves are closed the low alarm is 47 gpm. This prevents alarm when PD pump is in service.

- oo. FT-62-93C: Provides ACR flow indication and alarm of "Charging Flow Lo." Provides control signal for FCV-62-93 (AUX mode)
- pp. **PT-62-92A**: Provides local & MCR Charging Header pressure indication.
- qq. **PT-62-92C**: Provides ACR Charging Header pressure indication.
- rr. FCV-62-89 Charging Hdr/RCP Seal Injection Flow Control
 - (1) Maintains sufficient backpressure in the charging header to ensure adequate flow of seal water to the RCPs.
 - (2) HIC(s) located in MCR and ACR.

45W600-62-4 47W610-62-2 47W611-62-4

Normally 8-13 gpm per RCP.

FACILITY COMMENTS FOR NRC WRITTEN EXAMINATION WATTS BAR NUCLEAR 11/26/2002

Question #	Comment	Associated References
SRO 99	Accept two correct answers. The stem specifies that FR-H.2 has been entered and does not state what specific step the operating crew is performing. Therefore both A and B alternatives are correct. The operator has entered FR-H.2 and will continue with that instruction until transitioned to another procedure, in this instance FR-H.3. This transition does not occur until step 3 of FR-H.2. As alternative B states, the operator will continue in FR-H.2 to reduce S/G pressure until he reaches step 3. In the case of alternative A, if the operator is at step 3 of FR-H.2 he will then transition to FR-H.3.	FR-H.2, "Steam Generator Overpressure",

99.

Given the following:

- The Unit 1 operating crew is currently executing E-1, "Loss of Reactor or Secondary Coolant".
- Containment pressure is 1.5 psig and slowly dropping.

- RCS temperature is 570°F.

- S/G Pressures: S/G #1 = 1200 psig; S/G#2 = 1190 psig; S/G#3 = 1230 psig; S/G#4 = 1205 psig.
- SG NR Levels: S/G #1 = 25%; S/G#2 = 30%; S/G#3 = 87%; S/G#4 = 35%.
- FR-H.2, "Steam Generator Overpressure", has been entered.

For the existing plant conditions, the Unit Supervisor should:

- A. Direct the operators to NOT release steam from S/G#3 and transition to FR-H.3, *Steam Generator High Level" to control and lower S/G#3's level.
- B. Direct the operators to NOT release steam from S/G#3 and continue with FR-H.2 to reduce S/G pressure.
- C. Direct the operator to open the PORV on S/G#3 to drop pressure below 1220 psig then transition to FR-H.3, "Steam Generator High Level" to control and lower S/G#3's level.
- D. Direct the operator to open the PORV on S/G#3 to drop pressure below 1220 psig and continue with FR-H.2 to reduce S/G pressure.

TENNESSEE VALLEY AUTHORITY WATTS BAR NUCLEAR PLANT

FR-H.2 STEAM GENERATOR OVERPRESSURE Revision 4

Unit 1

QUALITY RELATED

REQUESTED BY:	Jim Young	•
SPONSORING ORGANIZATION:	OPERATIONS	-
APPROVED BY:	J.M. Earles	~
	EFFECTIVE DATE:	2/21/2002

LEVEL OF USE: CONTINUOUS

STEAM GENERATOR OVERPRESSURE

FR-H.2 Rev 4

1.0 PURPOSE

This Instruction provides actions for an overpressure condition affecting any steam generator where pressure has risen above the highest steamline safety valve setpoint.

2.0 SYMPTOMS AND ENTRY CONDITIONS

2.1 Indications

S/G pressure greater than or equal to 1220 psig.

2.2 Transitions

FR-0, Status Trees, FR-H in YELLOW condition.

3.0 OPERATOR ACTIONS

STEAM GENERATOR OVERPRESSURE

FR-H.2 Rev 4

Step

Action/Expected Response

Response Not Obtained

- 1. IDENTIFY affected S/G(s):
 - a. Any S/G pressure greater than or equal to1220 psig.
- a. IF press in all S/Gs
 less than 1220 psig,
 THEN
 RETURN TO Instruction in effect.

- 2. **ENSURE** MFW isolated to affected S/Gs:
 - MFW isolation valves CLOSED.
 - · MFW bypass isolation CLOSED.
 - MFW reg valves CLOSED.
 - MFW bypass reg valves CLOSED.
 - MFWPT A and B TRIPPED.
 - Standby MFWP STOPPED.
 - Cond demin pumps TRIPPED.
 - Cond booster pumps TRIPPED.

- Manually CLOSE valves, and STOP pumps, as necessary.
- IF valves can NOT be closed, THEN CLOSE #1 heater outlet valves.

- 3. **CHECK** affected S/Gs NR level less than 85% [77% ADV].
- ** GO TO FR-H.3, STEAM GENERATOR HIGH LEVEL.

STEAM GENERATOR OVERPRESSURE

FR-H.2 Rev 4

Step

Action/Expected Response

Response Not Obtained

CAUTION If affected S/G NR level rises to greater than 85% [77% ADV], steam should NOT be released from the affected S/Gs.

- 4. **DEPRESSURIZE** affected S/Gs:
 - S/G PORVs,

OR

MSIV bypass valves,

OR

- Steam supply to TD AFW pump, OR
- S/G blowdown valves.
- 5. **ESTABLISH** affected S/Gs press control:
 - a. CHECK S/G press dropping.
- a. IF S/G press rising or stable,
 THEN
 - ** GO TO Caution prior to Step 6.

1.

b. CHECK S/G press less than 1220 psig:

- b. IF press greater than or equal to 1220 psig, THEN
 - ** **GO TO** Step 3.

- c. MAINTAIN S/G press less than 1220 psig.
- d. RETURN to instruction in effect.

STEAM GENERATOR OVERPRESSURE

FR-H.2 Rev 4

Step

Action/Expected Response

Response Not Obtained

CAUTION AFW flow should remain isolated to affected S/Gs UNTIL a steam release path is established.

- 6. ISOLATE AFW flow to affected S/Gs:
 - a. CLOSE MD AFW LCVs.
- a. IF LCVs will NOT close,
 THEN
 Locally CLOSE manual isolation valves.
- b. **CLOSE** TD AFW LCVs.
- b. IF LCVs will NOT close,
 THEN
 Locally CLOSE manual isolation
 valves.
- c. CHECK affected S/Gs AFW flow zero gpm.
- 7. CHECK T-hot less than 545°F.

COOLDOWN RCS to less than 545°F by dumping steam from Intact S/Gs.

STEAM GENERATOR OVERPRESSURE

FR-H.2 Rev 4

Step

Action/Expected Response

Response Not Obtained

- **CONTINUE** attempt to manually or locally depressurize affected S/Gs: 8.
 - S/G PORVs,

OR

MSIV bypass valves,

OR

- Steam supply to TD AFW pump, **OR**
- S/G blowdown valves.
- 9. **RETURN TO** Instruction in effect.

- End -