

STEP

ACTION/EXPECTED RESPONSE

RESPONSE NOT OBTAINED

EMERGENCY INSTRUCTION S01-1.2-1.03

SI TERMINATION FOLLOWING SPURIOUS SI

I. PURPOSE:

The purpose of this instruction is to provide response to a spurious safety injection signal and place the plant in stable hot shutdown condition.

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NOTE: Foldout page should be open.

CAUTION

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If offsite power is lost after SI is reset, manual SI initiation will be necessary to load safeguard equipment onto the diesel powered 4 KV busses.

1

Verify SI Reset:

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| a. SLSS surveillance panel load group lights - ON. | a. Reset SI at SLSS surveillance panels. |
| b. Verify lockout switches - RESET. | b. Manually reset lockout switches. |

2

Stop SI System Pumps:

- a. Stop both feed pumps.
- b. Stop both SI pumps.

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AFW pump water supply must be maintained to ensure adequate heat sink.

3

Check CST Level:

a. CST Level - GREATER THAN 4 FT.

a. IF CST level low, THEN transfer to alternate AFW water supply per S01-7-3, AUXILIARY FEEDWATER SYSTEM.

4

Check Steam Generator Levels:

a. Narrow range level - GREATER THAN 26%.

a. IF less than 26%, THEN maintain.

1) Total AFW flow - GREATER THAN 250 GPM.

2) AFW flow per SG - LESS THAN 150 GPM.

b. Throttle AFW flow to maintain narrow range level at 50%.

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5	<u>Verify SI Reinitiation NOT Required:</u> a. RCS pressure - GREATER THAN 1735 PSIG. b. RCS subcooling - GREATER THAN 40 OF. c. Pressurizer level - GREATER THAN 10%. d. Containment pressure - LESS THAN 1.4 PSIG.	<ul style="list-style-type: none"> ● Manually reinitiate SI Go to S01-1.2-1.0, REACTOR TRIP OR SAFETY INJECTION, step 5.
6	<u>Verify Offsite Power Available:</u> a. 220 KV switchyard voltage - NORMAL.	a. IF low, THEN go to <u>S01-1.7-T, LOSS OF OFFSITE POWER/STATION BLACKOUT.</u>
7	<u>Reset Containment Isolation:</u> a. Depress Train A AND B containment isolation pushbuttons.	a. Use override push- buttons for valves needed opening as containment systems are placed in service.
8	<u>Verify Charging Established:</u> a. One charging pump breaker - CLOSED. b. Reset nonrunning charging pump lockout.	a. Start standby charging pump.

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9	<u>Align VCT Makeup Control System:</u> a. Set makeup controller for a boron concentration - GREATER THAN RCS BORON CONCENTRATION. b. Makeup set for automatic.	b. Adjust controls, as appropriate.
10	<u>Verify CCW System Operating Properly:</u> a. Two CCW pump breakers - CLOSED. b. CCW flow indication - GREATER THAN 1620 GPM. c. CCW low pressure alarm - RESET.	a. Manually start pumps. b. IF low, THEN start <u>third CCW pump</u> . c. IF low, THEN start <u>third CCW pump</u> .

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11	<p><u>Align Letdown System:</u></p> <ul style="list-style-type: none"> a. Place inservice RHR heat exchanger temperature controller to - MANUAL, SET AT 25% OPEN. b. Place letdown pressure controller PCV 1105 to - MANUAL, SET AT 50% OPEN. c. Verify RCS letdown CV 525 <u>AND</u> CV 526 - OPEN. d. Verify LCV 1112 - OPEN. e. Verify LCV 1100 A control switch - AUTO. 	<ul style="list-style-type: none"> c. Manually open valves. d. Manually open valve. e. Manually position switch.
12	<p><u>Place Letdown In Service:</u></p> <ul style="list-style-type: none"> a. Open one letdown orifice isolation valve <u>AND</u> manually adjust letdown pressure and temperature to stable conditions. b. Place letdown pressure controller PCV 1105 to - AUTO, SET AT 350 PSIG. c. Place inservice RHR heat exchanger temperature controller to - AUTO, SET AT 120 °F. 	

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Align Charging Pump Suction To VCT:

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| a. Verify VCT level - GREATER THAN 22%. | a. Manually restore level. |
| b. Open MOV 1100 C. | |
| c. Close MOV 1100 B <u>AND</u> D. | |
| d. Place control switches for MOV 1100 B, D <u>AND</u> C in AUTO. | |

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Check RCP Cooling:

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| a. RCP low CCW flow alarms - RESET. | a. Manually adjust CCW flow. |
| b. RCP seal injection flow established with RCP thermal barrier delta pressures - GREATER THAN 10 INCHES. | b. Establish seal water by placing flow controllers in AUTO <u>AND</u> set to maintain a positive delta pressure. |
| c. Verify RCP seal return CV 527 <u>AND</u> CV 528 - OPEN. | |
| d. Verify seal leakoff is - LESS THAN 4.5 GPM. | d. Place PCV 1115 A, B <u>AND</u> C in AUTO. |

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15	<u>Establish Pressurizer Level Control:</u> a. Verify charging flow controller FCV 1112 in - AUTO, CASCADE CONTROL. b. Place pressurizer level controller LC 430 F in AUTO, MAN SET <u>AND</u> SET AT 15%.	
16	<u>Establish Pressurizer Pressure Control:</u> a. Verify pressurizer pressure controller in - AUTO, <u>AND</u> SET AT 2085 PSIG. b. Energize one control and one backup set of pressurizer heaters. c. Place remaining control and backup set of pressurizer heaters in AUTO.	a. Manually position controller.

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Check RCS Subcooling:

a. RCS subcooling - GREATER THAN 50 °F.

a. Dump steam to establish greater than 50 °F subcooling. Do not exceed RCS cooldown rate greater than 50 °F/HR.

CAUTION

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If possible RCPs should be run such that pressurizer spray capability is assured.

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Establish Conditions For RCP Operation:

a. Start at least one RCP per to S01-4-3, REACTOR COOLANT PUMP OPERATION.

a. IF an RCP cannot be started, THEN go to step 19.

b. IF at least one RCP is running, THEN go to step 20.

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19	<p>Verify For RCS Natural Circulation Using Trended Values:</p> <ul style="list-style-type: none">a. RCS subcooling - GREATER THAN 40 OF.b. Steam pressure - STABLE.c. RCS cold leg temperature - STABLE OR SLOWLY DECREASING AND NEAR SATURATION TEMPERATURE FOR STEAM HEADER PRESSURE.d. Core exit TCs - STABLE OR SLOWLY DECREASING.e. Refer to S01-3-6, PLANT OPERATION WITH NATURAL CIRCULATION.	<ul style="list-style-type: none">● Attempt to establish natural circulation by increasing steam dump.

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20	<u>Check Intermediate Range Flux:</u> a. Flux - LESS THAN 2×10^{-9} AMPS. b. Verify source range detectors high voltage - ON. c. Transfer NIS recorders to source range.	a. Continue with step 21. <u>WHEN</u> flux decreases below 2×10^{-9} amps, <u>THEN</u> perform steps 20.b <u>AND</u> 20.c.
21	<u>Verify SI Reinitiation NOT Required:</u> a. RCS pressure - GREATER THAN 1735 PSIG. b. RCS subcooling - GREATER THAN 40 OF. c. Pressurizer level - GREATER THAN 10%. d. Containment pressure - LESS THAN 1.4 PSIG.	• Manually reinitiate SI. Go to S01-1.2-1.0, REACTOR TRIP OR SAFETY INJECTION, step 5.

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Return SI Valving To Standby Status:

- a. Close SI MOV 850 A, B, AND C.
- b. Close HV 851 A AND B.
- c. Close HV 853 A AND B.
- d. Close CV 875 A AND B.
- e. Close SV 2900 AND SV 3900.
- f. Close bonnet vent block valves for HV 853 A AND B.

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Establish Plant Status:

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| <ol style="list-style-type: none"> a. <u>IF</u> plant is to remain in hot standby, <u>THEN</u>: <ol style="list-style-type: none"> 1) Borate RCS to xenon free hot standby boron concentration. 2) Maintain stable plant conditions. b. Go to S01-3-4, PLANT SHUTDOWN FROM FULL POWER TO HOT STANDBY. | <ol style="list-style-type: none"> a. <u>IF</u> plant is to be cooled down, <u>THEN</u>: <ol style="list-style-type: none"> 1) <u>IF</u> ANY RCP is running, go to S01-3-5, PLANT SHUTDOWN FROM HOT STANDBY TO COLD SHUTDOWN. 2) <u>IF</u> NO RCPs are running, <u>THEN</u> go to S01-3-6, PLANT OPERATION WITH NATURAL CIRCULATION |
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-END-

H. E. MORGAN
OPERATIONS MANAGER

S01-1.2-1.05 Rev 0
MOTOR DRIVEN AFW PUMP RESTART CRITERIA

- a. IF a motor driven AFW pump trips on low discharge pressure, THEN:
- 1) Lower AFW flow controllers.
 - 2) Reset AND restart pump.

SI TERMINATION CRITERIA FOR SPURIOUS SI

- a. Terminate SI when ALL parameters listed below are met:
- 1) Containment Conditions - NORMAL.
 - 2) RCS Pressure - GREATER THAN 1840 PSIG.
 - 3) RCS Subcooling - 40 °F.
 - 4) Pressurizer Level - GREATER THAN 15%.
 - 5) Heat Sink:
 - (a) SG Level - GREATER THAN 10%.
 - OR
 - (b) AFW Flow - GREATER THAN 250 GPM.

SI REINITIATION CRITERIA FOLLOWING SPURIOUS SI

- a. Reinitiate SI if ANY ONE of the parameters listed below occurs:
- 1) RCS Pressure - LESS THAN 1735 PSIG.
 - 2) RCS Subcooling - LESS THAN 40 °F.
 - 3) Pressurizer Level - LESS THAN 10%.
 - 4) Containment Pressure - GREATER THAN 1.4 PSIG.

COLD LEG RECIRCULATION SWITCHOVER CRITERIA

- a. IF RWST level less than 21% THEN align SI system for cold leg recirculation per S01-1.2-1.13, TRANSFER TO COLD LEG INJECTION AND RECIRCULATION.

SYMPTOMS FOR RESPONSE TO INADEQUATE CORE COOLING

- a. Go to S01-1.2-14, RESPONSE TO INADEQUATE CORE COOLING, when ANY ONE of the following symptoms occur:
- 1) Five or more core exit TCs - GREATER THAN 1200 °F.
 - OR
 - 2) RCS hot leg temperatures - GREATER THAN 700 °F.

SYMPTOMS FOR RESPONSE TO LOSS OF SECONDARY HEAT SINK

- a. Go to S01-1.2-15, RESPONSE TO LOSS OF SECONDARY HEAT SINK IF AFW Flow is NOT AVAILABLE.

IF EVENTS REQUIRE IMPLEMENTATION OF THIS PROCEDURE

- a. Notify Shift Technical Advisor.
- b. Notify Shift Communicator.
- c. Determine if event is classified as an emergency and requires notification of offsite agencies and implementation of the Emergency Plan per S0123-VIII-11, RECOGNITION AND CLASSIFICATION OF EMERGENCIES.
- d. IF event is NOT classified as an emergency in c above THEN determine if notification of the NRC is required within one hour per S01-14-13, NOTIFICATION TO NRC OF SIGNIFICANT EVENTS.