

SCENARIO #1**I. SIMULATOR OPERATOR INSTRUCTIONS****A. INITIAL SIMULATOR SETUP**

| ✓ | ITEM / MALFUNCTION / REMOTE FUNCTION / CONDITION |
|---|--|
| | <ul style="list-style-type: none"> ■ Prepare simulator per TQ-AA-106-0301, Simulator Training Practices Job Aid |
| | <ul style="list-style-type: none"> ■ Reset simulator to IC-40 <ul style="list-style-type: none"> - 100% Power - RCIC out of service |
| | <ul style="list-style-type: none"> ■ Apply Information Tags on the following RCIC components: <ul style="list-style-type: none"> - HV49-1F008, OUTBD PCIV - HV49-1F076, Warmup Bypass - HV49-1F010, CST Suction - HV49-1F012, Discharge Valve - HV49-1F019, Min Flow Valve - HV49-1F029, Suppression Pool Suction - HV50-1F045, Steam Supply MOV - HV50-1F060, Turbine Exhaust ■ Obtain key and close HV49-1F008, RCIC OUTBD PCIV |
| | <ul style="list-style-type: none"> ■ Take out of FREEZE and ensure the following: <ul style="list-style-type: none"> - Reactor Power is 100% - "1B" CRD pump is running. - "1B" Drywell Chiller is running. - With the exception of RCIC, all other equipment is OPERABLE. |

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| | <ul style="list-style-type: none">■ If not embedded in IC-40, load Scenario "ILT NRC Scenario #1" from floppy disk labeled "2006 NRC EXAM" using A: drive. Ensure the following malfunctions are loaded:<ul style="list-style-type: none">- MNS160A, active 1 minute after trigger 1 is activated.- MFW245C, active 12 minutes after Group 7A isolation (trigger 1).- MED263D, trigger 2 active when plant is stable after RFP secured.- MAD147E, trigger 3 active after CRD pump and drywell chiller started.- MRR441, trigger 4 active when mode switch in shutdown.- MFW252B, trigger 5 active when drywell pressure at 2psig.- MHP449, trigger 6 active when HPCI flow is at 3000 gpm.- MCR412A, trigger 7 active when drywell pressure at 2psig.- MHP448B, active immediately.- MSL197, active immediately. |
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Interventions Summary
Hide Malfunctions - 11 Hide Remotes - 3 Hide Overrides - 23 Show Annunciators - 0

Malfunction Summary

| Mal ID | Mult ID | Description | Current Value | Target Value | Rmptime | Actime | Dactime | Trig |
|---------|---------|---|---------------|--------------|----------|----------|---------|------|
| MSL197 | | SLS System Solenoid Valve Fail to Fire | True | True | | | | 2 |
| MED2630 | | Bus Fault on 4 KV Safeguard Bus D14 | False | True | | | | 3 |
| MAD147E | | Relief Valve (F013L) Fails (Fails Open, Mechanical) | False | True | | | | 4 |
| MRR441 | | Coolant Leakage in Drywell (0-300 gpm) | 0.00 | 300.0000 | 00:06:00 | | | 5 |
| MPW252B | | FW Line B Break Inside Primary Containment | 0.00 | 100.0000 | | | | 5 |
| MHP449 | | HPCI Turbine Trip | False | True | | | | 6 |
| MHP448B | | HPCI Speed / Flow Controller F055-1F600 Fails Low | True | True | | | | 7 |
| MCR412A | | Control Rod Drive Hydraulic Pump A Trips | False | True | | | | 1 |
| MPW245C | | Reactor Feedpump B High Vibration | False | True | | 00:13:00 | | 1 |
| MNS160A | | NSSSS Group 7 Inadvertent Isolation | False | True | | 00:01:00 | | 1 |
| MRR440A | | Recirculation Loop A Rupture | 0.00 | 2.000000 | 00:15:00 | 00:01:00 | | 5 |

Delete All Active Pending

Remotes Summary

| Rem ID | Mult ID | Description | Current Value | Target Value | Rmptime | Actime | Trig |
|--------|---------|------------------------------------|---------------|--------------|---------|--------|------|
| RZZ372 | | Spray Pond Temperature | 68.0000 | 69.0000 | | | |
| RCR019 | | CRD Pump B Discharge Valve (F014B) | OPEN | OPEN | | | |
| RCR018 | | CRD Pump A Discharge Valve (F014A) | CLOSE | CLOSE | | | |

Clear List Active Pending

Override Summary

| Tag ID | Description | Position / Target | Actual Value | Override Value | Rmptime | Actime | Dactime | Trig |
|------------|--|-------------------|--------------|----------------|---------|--------|---------|------|
| HS49-1F029 | HV49-1F029, RDC Suction from Supp Pool Ind Lamps | RED | OFF | OFF | | | | |
| HS49-1F031 | HV49-1F031, RDC Suction from Supp Pool Ind Lamps | AMBER | OFF | OFF | | | | |
| HS49-1F031 | HV49-1F031, RDC Suction from Supp Pool Ind Lamps | GREEN | ON | OFF | | | | |
| HS49-1F031 | HV49-1F031, RDC Suction from Supp Pool Ind Lamps | RED | OFF | OFF | | | | |
| HS49-1F076 | HV49-1F076, RDC Steam Warmup Bypass Vlv Ind Lamps | GREEN | DN | OFF | | | | |
| HS49-1F076 | HV49-1F076, RDC Steam Warmup Bypass Vlv Ind Lamps | RED | OFF | OFF | | | | |
| HS50-1F045 | HV50-1F045, RDC Turbine Steam Supply Vlv Ind Lamps | GREEN | DN | OFF | | | | |
| HS50-1F045 | HV50-1F045, RDC Turbine Steam Supply Vlv Ind Lamps | RED | OFF | OFF | | | | |

■ Reset any annunciators that should not be present

B. INSTRUCTIONS FOR SIMULATOR OPERATOR**EVENT 1: Perform ST-6-047-200-1, SDV Valve Exercise Test**

| | |
|---|---|
| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
| | <ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate. |

EVENT 2: Inadvertent Isolation of PCIG

| | |
|---|--|
| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
| | <ul style="list-style-type: none"> ■ Ensure trigger #1 timer activates appropriately. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted, wait 5 minutes and report that the Instrument Gas compressors are not running. |
| | <ul style="list-style-type: none"> ■ If I&C / WWM contacted, report that the isolation will be investigated promptly. |

EVENT 3: RFP "B" High Vibration

| | |
|---|---|
| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
| | <ul style="list-style-type: none"> ■ Ensure RFP vibration trigger timer activates appropriately. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted, wait 5 minutes and report that the "B" RFP is shaking badly. |
| | <ul style="list-style-type: none"> ■ If WWM contacted, report that the RFP vibration will be investigated promptly by engineering and maintenance personnel. |

EVENT 4: D14 Bus Overcurrent / Loss of D14 Bus

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ Activate trigger #2 when instructed by evaluator. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted to investigate the D14 bus, wait 5 minutes and report to the crew that the B and C phase overcurrent relays are tripped on the D14 bus. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted to perform pre-start checks on the "1A" Drywell Chiller, wait 5 minutes and report to the crew that the chiller is ready to start. |
| | <ul style="list-style-type: none"> ■ Respond appropriately to a request for running checks on the D14 diesel and the "1A" Drywell Chiller. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted to perform pre-start checks on the "1A" CRD pump, wait 5 minutes and report to the crew that the "1A" CRD pump is ready to start. |
| | <ul style="list-style-type: none"> ■ Respond appropriately to a request for running checks on the "1A" CRD pump |
| | <ul style="list-style-type: none"> ■ Respond to request for other assistance as appropriate. |

EVENT 5: SRV "L" Fails Open Mechanically

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ Activate trigger #3 when instructed by evaluator. |
| | <ul style="list-style-type: none"> ■ WHEN Main Turbine inlet pressure has been lowered to 900 psig, remove malfunction MAD147E to close SRV "L". |
| | <ul style="list-style-type: none"> ■ Wait 2 minutes and insert malfunction MAD147E to reopen SRV "L". |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor is contacted to pull fuses for SRV "L" IAW OT-114, wait 8 minutes, remove the fuses (RAD214 "Toggle Out"), and report that the fuses are removed. |
| | <ul style="list-style-type: none"> ■ If requested to open HV51-1F068B (due to the power loss), wait 15 minutes and report the valve cannot be opened manually. |

EVENT 6: Coolant Leakage / "B" Feedwater Line Rupture Inside Primary Containment

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ Ensure triggers #4 and 5 activate appropriately. |
| | <ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate. |
| | <ul style="list-style-type: none"> ■ If requested, perform the appropriate field actions of SE-10: <ul style="list-style-type: none"> -Reset RHRSW Rad Monitor -Reset RE ARM's -Reset shunt trips -Perform running checks on the diesel generators |

EVENT 7: HPCI Controller Fails Low in AUTO / HPCI Turbine Trip

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ If requested, wait 10 minutes and report that the cause of the HPCI trip is unknown. |

Op-Test No. ILT05-1Scenario No. 1Event No.: 1Event Description: Perform ST-6-047-200-1, SDV Valve Exercise Test

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | CRS | Direct the RO and PRO to perform ST-6-047-200-1, SDV Valve Exercise Test |
| | RO/PRO | Obtain two stop watches and coordinate the starting of the stop watches with the depressing of both TEST pushbuttons. |
| | RO/PRO | At the conclusion of the test, report successful completion of ST-6-047-200-1 to the CRS. |
| | CRS | Acknowledge completion of ST-6-047-200-1 |

| Time | Position | Applicant's Actions or Behavior |
|--|----------|--|
| Op-Test No. <u>ILT05-1</u> Scenario No. <u>1</u> Event No.: <u>2</u> | | |
| Event Description: <u>Inadvertent Isolation of PCIG (TS)</u> | | |
| | PRO | Recognize that PCIG has isolated and report the failure to the CRS. |
| | PRO/RO | Reference ARC for annunciator 111 RECIRC A5, 1A RECIRC PUMP MOTOR WINDING COOLING WATER LO FLOW AND /OR Reference ARC for annunciator 112 CLEANUP A5, 1B RECIRC PUMP MOTOR WINDING COOLING WATER LO FLOW |
| | CRS | Reference GP-8, PRIMARY AND SECONDARY CONTAINMENT ISOLATION VERIFICATION AND RESET. |
| | CRS | Determine that no actual isolation signal is present and the isolation of PCIG is inadvertent. |
| | RO | If Reactor Recirc Pump motor high temperature alarms, monitor pump motor temperatures on BOP DAS monitor using S43.0.D. |
| | PRO | Place the "B" loop of drywell chill water in service to restore cooling water to the Reactor Recirc Pump motors. |
| | CRS | Direct the PRO to bypass the isolation of PCIG using GP-8.5. |
| | PRO | Bypass and restore PCIG IAW GP-8.5: <ul style="list-style-type: none"> o Position switch HSS-57-191A to BYPASS o Position switch HV-59-129A to CLOSE o Reposition valves that isolated to desired position. |
| | CRS | Direct the RO to contact I&C / WWM to investigate the inadvertent PCIG isolation. |
| | RO | Contact I&C / WWM to investigate the inadvertent PCIG isolation. |
| | CRS | Reference T.S. LCO 3.6.3 for inoperable PCIV's following PCIG isolation bypass per GP-8.5. Recognize that inoperable valves must be restored to OPERABLE within 4 hours or the penetration must be isolated, otherwise must be in HOT SHUTDOWN within next 12 hours. |

Op-Test No. ILT05-1Scenario No. 1Event No.: 3Event Description: RFP "1B" High Vibration

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | RO/PRO | Recognize "1B" RFP is vibrating and report the failure to the CRS. |
| | RO | Reference ARC for annunciator 102 FEED B2, 1B RFPT HI VIBRATION. |
| | CRS | Direct the PRO to investigate high vibration on the VMS computer. |
| | PRO | Monitor "1B" RFP vibration on the VMS computer and recognize that "B" RFP vibration is on the rise. |
| | CRS | Direct dispatching EO / Floor Supervisor to investigate the "1B" RFP high vibration. |
| | RO/PRO | Dispatch EO / Floor Supervisor to investigate the "1B" RFP high vibration. |
| | RO/PRO | Recognize at >5 mils on two vibration probes for a single bearing, the ARC directs feedpump speed be raised / lowered as necessary to clear the alarm. At >8 mils on two vibration probes for a single bearing, the feedpump must be removed from service. |
| | CRS | Direct the crew to prepare to remove the "1B" RFP from service when two vibration probes read greater than 8 mils on a single feedpump bearing. |
| | CRS | Direct the PRO to reduce Reactor power per GP-5 Appendix 2 below the capacity of the two remaining feedpumps (13 Mlbm/hr feed flow). |
| | PRO | Reduce Reactor power with recirc to below 13 Mlbm/hr total feed flow. |
| | RO | Remove the "1B" RFP from service IAW S06.2.C U/1: <ul style="list-style-type: none"> ○ Ensure HIC-006-106B for offgoing RFP in "AUTO". ○ For RFP's remaining in service, verify respective speed controller in AUTO and sufficient maneuvering room available. ○ Place the "1B" RFP speed controller in manual (MAN). ○ Slowly lower the speed of the "1B" RFP to standby. ○ Verify HV-006-105B, discharge check valve, is closed. |

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | PRO | Recognize loss of the D14 Bus and report the failure to the CRS. |
| | CRS | Enter E-D14 and E-D144. |
| | CRS | Direct dispatching EO / Floor Supervisor to investigate loss of D14. |
| | RO / PRO | Dispatch EO / Floor Supervisor to investigate loss of D14. |
| | RO | Recognize that "1B" CRD pump is not running and report to CRS. |
| | CRS | Direct RO to start the "1A" CRD pump. |
| | RO | Dispatch EO / Floor Supervisor to perform pre-start checks on the 1A CRD pump. |
| | RO | <p>Start the "1A" CRD pump IAW S46.1.A:</p> <ul style="list-style-type: none"> ○ Verify HV-46-1F003, Drive Water Pressure Control Valve, is OPEN. ○ Verify the CRD flow controller is in MANUAL and closed. ○ Verify CRD flow control valves 1F002A and 1F002B are closed. ○ Verify CRD PUMP SUCTION LO PRESS annunciator clear. ○ Start the "1A" CRD pump. ○ Ensure EO slowly opens the "1A" CRD pump discharge valve. ○ Verify charging water pressure is adequate. ○ Verify suction and drive water filter alarms are clear. ○ Verify accumulators are charged and alarms are clear. ○ Open the CRD flow control valve to establish 50 to 63 gpm flow. ○ Throttle close HV-46-1F003 to establish system pressure of 255 to 265 PSI. ○ When system pressure and flow are normal, place the CRD flow controller in AUTO. ○ Verify system flow indicates 50 to 63 gpm, drive water flow indicates zero gpm, and stabilizing flow indicates 5.8 to 6.2 gpm. |

Op-Test No. ILT05-1Scenario No. 1Event No.: 4Event Description: D14 Bus Overcurrent / Loss of D14 Bus

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | PRO | Recognize that "1B" Drywell Chiller is not running and report to CRS. |
| | CRS | Direct PRO to start the "1A" Drywell Chiller and restore drywell cooling. |
| | PRO | Dispatch EO / Floor Supervisor to perform start / running checks on the 1A Drywell Chiller. |
| | PRO | Start the "1A" Drywell Chiller IAW S87.1.A: <ul style="list-style-type: none"> ○ Place "1A" Drywell Chiller to START. ○ Verify the chiller discharge valve opens. ○ Immediately place a drywell chilled water pump in START. ○ Verify flow is established. ○ Verify chiller START light lit. ○ Start the second chilled water pump. ○ After 50 seconds, verify the "1A" Drywell Chiller start. |
| | RO / PRO | Dispatch EO / Floor Supv. to perform running checks on the D14 diesel. |
| | CRS | Reference T.S. LCO 3.8.3.1 for loss of D14 bus. |
| | PRO | Recognize the "1D" Core Spray and "1D" RHR pumps are inoperable. |
| | CRS | Reference T.S. LCO 3.5.1 for loss of ECCS pumps. |

Op-Test No. ILT05-1Scenario No. 1Event No.: 5Event Description: SRV "1L" Fails Open Mechanically

| Time | Position | Applicant's Actions or Behavior |
|------|----------|--|
| | RO | Recognize "1L" SRV has failed open and report failure to CRS. |
| | PRO | Place both loops of Suppression Pool Cooling in service: <ul style="list-style-type: none"> o Start both loops of RHRSW IAW S12.1.A. o Start a spray pond room fan for each loop of RHRSW. o Start an RHRSW pump in loop "A" and "B". o Throttle open the RHR heat exchanger RHRSW outlet valve for each loop (HV-51-1F068A & B). |
| | PRO | Recognize that the "B" RHRSW heat exchanger outlet valve has lost power, and report to the CRS that only the "A" loop of Suppression Pool Cooling is available. |
| | PRO | Continue placing the "A" loop of RHR in Suppression Pool Cooling: <ul style="list-style-type: none"> o Open the "1A" RHR heat exchanger RHRSW inlet valve (HV-51-1F014A). o Maintain maximum attainable RHRSW system flow without exceeding 11,000 gpm, with a discharge pressure of 75 to 85 psig. o Start the "1A" RHR pump. o Open the full flow test valve (HV-51-1F024A) to maintain 8000 to 8500 gpm RHR flow. o Close the "1A" RHR heat exchanger bypass valve (HV-51-1F048A). |
| | CRS | Enter OT-114, Inadvertent Opening of a Relief Valve |
| | RO | Provide confirmation of the open SRV. |
| | CRS | Direct RO to reduce turbine inlet pressure to 900 psig. |
| | RO | Reduce turbine inlet pressure to 900 psig. |
| | RO | Recognize "1L" SRV closed and report to CRS. |
| | CRS | Enter GP-3. |
| | PRO/RO | Recognize "1L" SRV reopened and report to CRS. |

Op-Test No. ILT05-1Scenario No. 1Event No.: 5Event Description: SRV "1L" Fails Open Mechanically

| Time | Position | Applicant's Actions or Behavior |
|------|----------|--|
| | CRS | Enter GP-4. |
| | CRS | Direct PRO to transfer house loads. |
| | PRO | Transfer house loads. |
| | CRS | Direct the PRO / RO to runback recirc to minimum. |
| | PRO/RO | Runback recirc to minimum. |
| | CRS | Direct RO to scram the Reactor at nominal 60% core flow. |
| CT | RO | Manually scram the Reactor. |
| | CRS | Enter T-101 on low Reactor level. |

| Time | Position | Applicant's Actions or Behavior |
|---|----------|--|
| Op-Test No. <u>ILT05-1</u> Scenario No. <u>1</u> Event No.: <u>6</u> | | |
| Event Description: <u>Coolant Leakage / "B" Feedwater Line Rupture Inside Primary Containment</u> | | |
| | RO/PRO | Reference ARC for annunciator 107 REACTOR F-2, DRYWELL HI / LOW PRESS. |
| | CRS | Enter OT-101, High Drywell Pressure. |
| | CRS | Direct PRO to maximize drywell cooling and terminate Primary Containment inerting |
| | PRO | Verify Drywell cooling maximized and Primary Containment inerting is not in progress |
| | CRS | Direct PRO to perform section 3.11 of OT-101: <ul style="list-style-type: none"> o Ensure MSL sample valves are closed. o Ensure Recirc. sample valves are closed. o Stop RWCU and ensure the following RWCU valves are closed: HV-44-1F033, 1F001, 1F004, 1F100, and 1F105. o Ensure MSL drains are closed. o When time permits, perform S44.2.A to shutdown RWCU. |
| | CRS | Enter T-102 when Suppression Pool temperature reaches 95 degrees F. (stuck open SRV) |
| | CRS | Re-enter T-101 and enter T-102 on high drywell pressure. |
| | CRS | Direct PRO to bypass and restore drywell cooling when drywell air temperature reaches 145 degrees F. |
| | PRO | Bypass and restore drywell cooling. |
| | RO | Recognize feedwater is not injecting into RPV and report to CRS. |
| | CRS | Direct PRO / RO to verify isolations. |
| | CRS | Re-enter T-101 on low Reactor level. |
| | CRS | Direct PRO to spray the Suppression Pool per T-225 using RHR before Suppression Pool pressure reaches 7.5 psig. |

Op-Test No. ILT05-1Scenario No. 1Event No.: 6Event Description: Coolant Leakage / "B" Feedwater Line Rupture Inside Primary Containment

| Time | Position | Applicant's Actions or Behavior |
|------|----------|--|
| | PRO | Spray the Suppression Pool per T-225: <ul style="list-style-type: none"> ○ Ensure the "1A" RHR pump suction valve open (HV-51-1F004A). ○ Ensure the following RHR valves are closed: HV-51-1F006A, 1F015A, 1F016A, and 1F017A. ○ Verify "1A" RHR pump is running (suppression pool cooling). ○ Ensure the following RHR valves are open: HV-51-1F047A and 1F003A. ○ Open HV-51-1F027A to establish suppression pool spray. ○ Throttle HV-51-1F024A to maintain 8000 to 8500 gpm total system flow. |
| | CRS | Enter T-111, Level Restoration, when it is determined RPV level cannot be maintained above -161". |
| | PRO | Secure the "1A" and "1B" recirc pumps due to loss of cooling water. |
| | CRS | Direct PRO / RO to inhibit auto ADS. |
| CT | PRO / RO | Inhibit auto ADS. |
| | CRS | Direct PRO / RO to start alternate injection sub-systems. |
| | RO | Attempt to start SLC, recognize squib valve failure, and report failure to CRS. |
| | CRS | Direct PRO / RO to start injection sub-systems. |
| | RO / PRO | Start injection sub-systems. |
| | RO | Conserve water by attempting to isolate feedwater lines. |
| | CRS | Enter T-112 when Reactor level reaches -161" <u>OR</u> when required by the PSP curve in T-102. |
| | CRS | Direct the RO / PRO to prevent uncontrolled injection with low pressure systems. |
| | CRS | Direct PRO to open 5 ADS valves. |
| CT | PRO | Open 5 ADS valves. |

Op-Test No. ILT05-1Scenario No. 1Event No.: 6Event Description: Coolant Leakage / "B" Feedwater Line Rupture Inside Primary Containment

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | CRS | Enter SE-10 for the LOCA signal. |
| | PRO | Re-energize busses in MCR per SE-10. |
| | RO / PRO | Dispatch EO / Floor Supervisor to perform SE-10 actions in the field. |

Op-Test No. ILT05-1Scenario No. 1Event No.: 7Event Description: HPCI Controller Fails Low in AUTO / HPCI Turbine Trip

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | PRO | Recognize HPCI has an initiation signal, but is not injecting, and report problem with controller to CRS. |
| | CRS | Direct HPCI controller be placed in manual. |
| | PRO | Place the HPCI controller in manual and ensure speed is greater than 2200 RPM. |
| | CRS | When HPCI injection is required, direct the PRO to inject with HPCI in manual control. |
| | PRO | Raise HPCI speed in manual to begin controlled injection to the RPV. |
| | PRO | Recognize HPCI trip and report trip to the CRS. |
| | PRO | Contact EO / FSV to investigate loss of HPCI. |

TERMINATION POINT

The scenario will be terminated when the following criteria are met:

1. An Emergency Blowdown has been performed per T-112 and RPV level has been stabilized.

SCENARIO #1

INITIAL CONDITIONS

- Unit 1 is at 100% power

INOP / OUT OF SERVICE EQUIPMENT

- RCIC is out of service for bearing replacement. Estimated out of service time is approximately 24 hours. A regulatory log entry has been completed.

PLANNED EVOLUTIONS

- Maintain 100% power
- Perform ST-6-047-200-1, SDV Valve Exercise Test.

SCENARIO #2

I. SIMULATOR OPERATOR INSTRUCTIONS

A. INITIAL SIMULATOR SETUP

| ✓ | ITEM / MALFUNCTION / REMOTE FUNCTION / CONDITION |
|---|--|
| | <ul style="list-style-type: none"> ■ Prepare simulator per TQ-AA-106-0301, Simulator Training Practices Job Aid |
| | <ul style="list-style-type: none"> ■ Reset Simulator to IC-41 |
| | <ul style="list-style-type: none"> ■ Take out of FREEZE and ensure the following: <ul style="list-style-type: none"> - 95% power |
| | <ul style="list-style-type: none"> ■ If not embedded in IC-41, load Scenario "ILT NRC Scenario #2" from floppy disk labeled "2006 NRC EXAM" using A: drive. Ensure the following malfunctions are loaded: <ul style="list-style-type: none"> - MVI234A, active 1 minute after Trigger #1 is activated. This trigger is activated after the thermal limit problem is rectified. - MCU002B, active immediately. - RCW219, active 10 minutes after the "A" RPV pressure instrument fails high (Trigger 1). - MRR435B, active 11 minutes after loss of RECW to RWCU (Trigger 1). - MRR435A, Trigger #2 activated after Tech Specs are referenced for the trip of the "1B" recirc pump AND when prompted by evaluator. - MRP029D, active immediately. - MRP407C, active immediately. - MSL559, active immediately. |

✓
ITEM / MALFUNCTION / REMOTE FUNCTION / CONDITION

Interventions Summary
[Icons]

Hide Malfunctions - 0
Hide Remotes - 1
Show Overrides - 0
Show Annunciators - 0

Malfunction Summary

| Mal ID | Mult ID | Description | Current Value | Target Value | Rmptime | Actime | Dactime | Trig |
|---------|---------|--|---------------|--------------|---------|----------|---------|------|
| WV1234A | | Reactor Vessel Pressure Transmitter (RPS) N078A Fails High | False | True | | 00:01:00 | | 1 |
| MCU002B | | RWCU Isol Vlv HV44-1F004 Fails To Autoclose on Isol Signal | False | True | | | | |
| MRR435B | | Recirc Pump 1B Drive Motor Breaker Trip | False | True | | 00:22:00 | | 1 |
| MRR435A | | Recirc Pump 1A Drive Motor Breaker Trip | False | True | | | | 2 |
| MPP029D | | RPS Fails to Scram Channel B | False | True | | | | |
| MPP407C | | BOTH RPCS Divisions ARI Fails to Inhibit | False | True | | | | |
| MSL559 | | SLC Injection Line Rupture Inside the Drywell | False | True | | | | |
| MEH109 | | Turbine Bypass Valves Fail to Selected Value (0-100%) | 0.00 | 50.000000 | | 00:05:00 | | 3 |
| MEH104B | | Turbine Governor Fails Low | False | True | | | | 3 |

Timer Pause
Delete All
Active Pending

Remotes Summary

| Rem ID | Mult ID | Description | Current Value | Target Value | Rmptime | Actime | Trig |
|--------|---------|---|---------------|--------------|---------|----------|------|
| RCW219 | | RECW to RWCU NRHX Manual Isol Valve 01 3-1039 | OPEN | CLOSE | | 00:11:00 | 1 |

Timer Pause
Clear List
Active Pending

■ Reset any annunciators that should not be present

B. INSTRUCTIONS FOR SIMULATOR OPERATOR**EVENT 1: Raise Power to 100% With Recirc.**

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ If Reactor Engineer is contacted, inform crew to continue raising power with recirc flow. RE will review paperwork later this shift. |
| | <ul style="list-style-type: none"> ■ Respond to other requests for assistance as appropriate. |

EVENT 2: "A" RPV Pressure Transmitter (RPS) Fails Upscale

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ Activate Trigger #1 after the crew takes the shift <u>and</u> when prompted by the evaluator. Ensure timer times out correctly. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted, wait 5 minutes and report back that RPS trip unit (PIS-1N678A) is tripped and appears due to being bumped by an I&C technician performing housekeeping duties. |
| | <ul style="list-style-type: none"> ■ Recommend that the trip unit be reset. |
| | <ul style="list-style-type: none"> ■ If requested to reset trip unit, report back that trip unit (PIS-1N678A) is reset. |
| | <ul style="list-style-type: none"> ■ If I&C / WWM contacted, report that failure will be investigated promptly. |

EVENT 3: RECW Valve to RWCU Non-Regen Heat Exchanger Closes / RWCU Outboard Isolation Valve Does Not Isolate on High Demin Inlet Temp

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ Ensure RECW valve closure trigger timer activates appropriately. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted, wait 8 minutes and report that nothing appears to be unusual at this time. Will continue to investigate. |
| | <ul style="list-style-type: none"> ■ If I&C / WWM contacted, report that failure will be investigated promptly. |

EVENT 4: "1B" Recirc Pump Trips

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ Ensure recirc pump "1B" trip trigger timer activates appropriately. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted, wait 5 minutes and report to the crew that the cause of the "1B" recirc pump trip cannot be determined at this time. Will continue to investigate. |
| | <ul style="list-style-type: none"> ■ If I&C / WWM contacted, report that failure will be investigated promptly. |

EVENT 5: "1A" Recirc Pump Trips / ATWS – "B" RPS Fails to Trip, Both RRCS Channels Fail to Initiate ARI.

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ Activate trigger 2 when prompted by evaluator. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted, wait 5 minutes and report to the crew that the cause of the "1A" recirc pump trip cannot be determined at this time. |
| | <ul style="list-style-type: none"> ■ If I&C / WWM contacted, report that failure will be investigated promptly. |
| | <ul style="list-style-type: none"> ■ If requested to perform T-215, remove malfunction MRP029D after the first "terminate and prevent" with Reactor level stable <u>AND</u> prompt from evaluator. |
| | <ul style="list-style-type: none"> ■ If requested to perform T-216, wait 6 minutes and report back to the crew that the air valve is stuck closed. |
| | <ul style="list-style-type: none"> ■ If requested to perform T-270, load appropriate training scenario with seven minute time delay. When timers time out, report back that T-270 is complete in the AER. |
| | <ul style="list-style-type: none"> ■ If requested to perform T-221, wait 11 minutes, load appropriate training scenario and report back that T-221 is complete. |
| | <ul style="list-style-type: none"> ■ If requested to perform T-251, wait 6 minutes, call the MCR to verify that HV-55-1F006 is closed, load appropriate training scenario and report back that T-251 is complete. |
| | <ul style="list-style-type: none"> ■ Respond to other requests for assistance as appropriate. |

EVENT 6: SLC Pipe Rupture In Drywell

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted, respond in 10 minutes that there is no evidence of a SLC rupture in the Unit 1 Reactor Enclosure. ■ If requested to perform T-209, reply that the MCR will be notified when the field portion of T-209 is complete. ■ If I&C / WWM contacted, report that failure will be investigated promptly. |

EVENT 7: Main Turbine Bypass Valves Fail Closed / EHC Load Set Runs Back to Minimum

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted, respond in 10 minutes that there is no evidence of an EHC leak or any other problem that would cause the BPV's to close or load set to runback in the Unit 1 Turbine Enclosure or AER. ■ If I&C / WWM contacted, report that failure will be investigated promptly. |

Op-Test No. ILT05-1Scenario No. 2Event No.: 1Event Description: Raise Power to 100% With Recirc Flow

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | CRS | Direct PRO to raise Reactor power to 100% IAW GP-5 utilizing recirc flow. |
| | PRO | Raise power to 100% with recirc flow. |
| | RO | Monitor core performance by running period P-1 edits. |

Op-Test No. ILT05-1Scenario No. 2Event No.: 2Event Description: "A" RPS Pressure Transmitter (RPS) Fails High

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | RO | Reference ARC for annunciator 107 REACTOR G-1, REACTOR HI PRESS TRIP |
| | RO | Reference ARC for annunciator 108 REACTOR B-1, AUTO SCRAM CHANNEL A1 |
| | RO | Recognize that the Reactor high pressure trip signal has resulted in an "A" RPS half scram. |
| | RO | Attempt to reset the RPS half scram. |
| | CRS | Direct dispatching EO / Floor Supervisor to investigate RPS high Reactor pressure trip units in Unit 1 AER. |
| | RO / PRO | Dispatch EO / Floor Supv to AER to investigate RPS high reactor pressure trip units. |
| | CRS | When trip unit PIS-1N678A is reset in the AER, direct reset of the half scram. |
| | RO | Reset the half scram. |

Op-Test No. ILT05-1Scenario No. 2Event No.: 3

Event Description: RECW Valve to RWCU Non-Regen Heat Exchanger Closes / RWCU Outboard Isolation Valve Does Not Isolate on High Demin Inlet Temp

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | PRO | Reference ARC for annunciator 112 CLEANUP H3, RWCU FILTER INLET HIGH TEMP |
| | CRS | Direct PRO to monitor inlet temperature to the RWCU demins (non-regen heat exchanger outlet temp). |
| | PRO | Select non-regen heat exchanger outlet temp using the RWCU temperature selector switch and report that the temperature is rising to the CRS. |
| | PRO | Recognize that the HV44-1F004, RWCU Outboard Isolation Valve, did not isolate automatically at 140 degrees F and report the failure to the CRS. |
| | CRS | Direct the PRO to attempt to close HV44-1F004 with the handswitch. |
| | PRO | Take the handswitch for HV44-1F004 to close and report to the CRS that HV44-1F004 has closed. |
| | PRO | Remove RWCU from service IAW S44.2.A, REACTOR WATER CLEANUP SHUTDOWN |
| | CRS | Reference T.S. LCO 3.6.3 for the failure of the RWCU PCIV to isolate. |

Op-Test No. ILT05-1Scenario No. 2Event No.: 4

Event Description: "1B" Recirc Pump Trips (TS)

| Time | Position | Applicant's Actions or Behavior |
|------|----------|--|
| | PRO | Reference ARC for annunciator 112 CLEANUP E-1, 1B RECIRC M-G DRIVE MOTOR LOCKOUT TRIP |
| | PRO | Recognize the "1B" recirc pump has tripped and report the trip to the CRS. |
| | CRS | Enter OT-112, RECIRCULATION PUMP TRIP |
| | CRS | Recognize in the Restricted Region of the Power / Flow map. |
| | CRS | Direct RO to insert control rods IAW RMSI to exit the Restricted Region of the Power / Flow map. |
| | RO | Insert control rods IAW RMSI. |
| | CRS | Direct PRO to close the "1B" recirc pump discharge valve for 5 minutes. |
| | PRO | Close the "1B" recirc pump discharge valve for 5 minutes and then reopen the valve. |
| | PRO | Reopen the "1B" recirc pump discharge valve 5 minutes after it was closed. |
| | CRS | Direct dispatching EO / Floor Supervisor to investigate "1B" recirc pump trip. |
| | PRO | Dispatch EO / Floor Supervisor to investigate "1B" recirc pump trip. |
| | CRS | Reference T.S. LCO 3.4.1.1 for Recirc Pump trip. |

| Time | Position | Applicant's Actions or Behavior |
|--|----------|--|
| Op-Test No. <u>ILT05-1</u> Scenario No. <u>2</u> Event No.: <u>5</u> | | |
| Event Description: "1A" Recirc Pump Trips / ATWS – "B" RPS Fails to Trip, Both RRCS Channels Fail to Initiate ARI. | | |
| | PRO | Recognize the "1A" Recirc Pump has tripped and report the failure to the CRS. |
| | PRO | Reference ARC for annunciator 111 RECIRC E-1, 1A RECIRC M-G DRIVE MOTOR LOCKOUT TRIP |
| | CRS | Direct the RO to manually scram the Reactor. |
| | RO | Scram the Reactor and place mode switch in shutdown. |
| | RO | Recognize "B" RPS failed to de-energize. |
| | RO | Report to crew that the Reactor has failed to scram. |
| | CRS | Enter T-101 for scram condition with power greater than 4%. |
| | RO | Manually initiate RRCS / ARI. |
| | RO | Recognize and report that control rods did not insert after initiating RRCS. |
| | RO | Insert SRM's and IRM's. |
| | CRS | Direct RO to manually insert control rods and bypass the RWM as necessary. |
| CT | RO | Insert control rods with RWM bypassed. |
| | CRS | Direct performance of T-215, DE-ENERGIZATION OF SCRAM SOLENOIDS. |
| | RO/PRO | Contact EO / Floor Supv to perform T-215. |
| | CRS | Direct performance of T-216, MANUAL ISOLATION AND VENT OF SCRAM AIR HEADER. |
| | RO/PRO | Contact EO / Floor Supv to perform T-216. |
| | CRS | Enter T-117, LEVEL / POWER CONTROL. |
| | CRS | Direct PRO to inhibit auto ADS. |
| CT | PRO | Inhibit both divisions of auto ADS. |
| | CRS | Direct performance of T-221 to maintain MSIV's open. |

Op-Test No. ILT05-1Scenario No. 2Event No.: 5

Event Description: "1A" Recirc Pump Trips / ATWS – "B" RPS Fails to Trip, Both RRCS Channels Fail to Initiate ARI.

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | RO/PRO | Contact EO / Floor Supv to perform T-221. |
| | CRS | Direct performance of T-270 to terminate and prevent injection to the RPV to reduce RPV level to below –50" (with the exception of SLC, CRD, and RCIC). |
| | PRO | Perform T-270 to terminate and prevent HPCI injection: <ul style="list-style-type: none"> ○ Shutdown the HPCI turbine by simultaneously depressing the HPCI turbine trip pushbutton and closing HV-55-1F003 (outboard PCIV). ○ Verify HV-55-1F003 is closed and release the turbine trip pushbutton. |
| | PRO | Contact EO / Floor Supervisor to perform T-270 in the AER to terminate and prevent low pressure ECCS injection. |
| CT | RO | Perform T-270 to terminate and prevent condensate and feedwater injection: <ul style="list-style-type: none"> ○ Ensure HV-06-138A, RFP BPV, is closed. ○ Ensure LIC-06-138, startup level controller, is in manual with output set at 0%. ○ Ensure the LIC-06-120, RFP bypass controller, is in manual. ○ Ensure the speed controller for A,B,C RFPT's in manual for all three pumps. ○ Depress Emergency Stop for all three RFP's. ○ When the Emergency Stop light goes out, depress Auto Start for all three pumps. ○ Close the HV-06-108 A,B,C (RFP discharge valves) one at a time UNTIL the desired valves are closed and re-injection to the RPV is necessary. |
| | CRS | Provide direction to the RO to re-inject as necessary to maintain RPV level in a band that is above –129" and at or below –50". |
| | RO | Re-inject with condensate / feedwater as necessary to maintain RPV level in the band directed by the CRS. |

Op-Test No. ILT05-1Scenario No. 2Event No.: 5

Event Description: "1A" Recirc Pump Trips / ATWS – "B" RPS Fails to Trip, Both RRCS Channels Fail to Initiate ARI.

| Time | Position | Applicant's Actions or Behavior |
|------|----------|--|
| | RO | Recognize that T-215 was successful and all control rods have fully inserted. Report all rods in to CRS. |
| | CRS | Exit T-117 and enter T-101. |
| | CRS | Direct RO to maintain a new RPV level band of 12.5 to 54 inches. |
| | RO | Re-inject to the RPV to a level band of 12.5 to 54 inches. |

Op-Test No. ILT05-1Scenario No. 2Event No.: 6Event Description: SLC Pipe Rupture In Drywell

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | RO | Manually start or verify automatic start of the SLC pumps, and recognize discharge pressure is significantly below RPV pressure. Report the failure to the CRS. |
| | CRS | Direct the RO to secure the SLC pumps to save boron inventory. |
| | RO | Secure the 3 SLC pumps. |
| | CRS | Direct performance of T-209. |
| | RO/PRO | Contact EO / Floor Supv to perform T-209. |

Op-Test No. ILT05-1Scenario No. 2Event No.: 7Event Description: Main Turbine Bypass Valves Fail Closed / EHC Load Set Runs Back to Minimum

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | RO | Recognize that RPV pressure is going up and report to the CRS. |
| | RO/PRO | Recognize BPV's failing closed and report to the CRS. |
| | RO/PRO | Recognize that the Main Turbine has tripped. |
| | CRS | Direct PRO to control RPV pressure using SRV's with a pressure band of 990 to 1096 psig. |
| | PRO | Operate SRV's as necessary to maintain an RPV pressure band of 990 to 1096 psig. |
| | PRO | Monitor Suppression Pool temperature and report to CRS when temperature exceeds 95 degrees F. |
| | CRS | Enter T-102, Primary Containment Control, when Suppression Pool temperature exceeds 95 degrees F. |

TERMINATION POINT

The scenario will be terminated when the following criteria are met:

1. T-215 is performed to de-energize RPS resulting in a full Reactor scram.
2. Reactor level is stabilized between 12.5 and 54”.

SCENARIO #2

INITIAL CONDITIONS

- Unit 1 is at 95% power.

INOP / OUT OF SERVICE EQUIPMENT

- No inoperable equipment.

PLANNED EVOLUTIONS

- Raise power to 100% using GP-5, Appendix 2, and OP-AB-300-1003 without a Reactor Engineer present.

SCENARIO #3**I. SIMULATOR OPERATOR INSTRUCTIONS****A. INITIAL SIMULATOR SETUP**

| ✓ | ITEM / MALFUNCTION / REMOTE FUNCTION / CONDITION |
|---|---|
| | <ul style="list-style-type: none"> ■ Prepare simulator per TQ-AA-106-0301, Simulator Training Practices Job Aid |
| | <ul style="list-style-type: none"> ■ Reset Simulator to IC-42 <ul style="list-style-type: none"> - 5% Power |
| | <ul style="list-style-type: none"> ■ Place an information tag on the "1A" SRM bypass joystick. |
| | <ul style="list-style-type: none"> ■ Take out of FREEZE and ensure the following: <ul style="list-style-type: none"> - 5% Power - "1A" SRM is bypassed |
| | <p>If not embedded in IC-42, load Scenario "ILT NRC Scenario #3" from floppy disk labeled "2006 NRC EXAM" using A: drive. Ensure the following malfunctions are loaded:</p> <ul style="list-style-type: none"> - MSR214F, active 1 minute after Trigger 1 is activated. - E51-S37-PB, active 10 minutes after IRM channel F fails upscale (Trigger 1). - VIC114A, active 15 minutes after RCIC initiates (Trigger 1). - MRR441, trigger 2 manually activated when 1B CRD pump is placed in service AND when prompted by evaluator. - MMS067, trigger 3 active when drywell pressure exceeds 1.2 psig. - MRP029C, active immediately. - MRH171A, active immediately. - MRH574A, active immediately. - MRH171B, trigger 4 manually activated when operator opens HV-51-1F016B, "B" RHR Containment Spray valve. |

B. INSTRUCTIONS FOR SIMULATOR OPERATOR

EVENT 1: Start the 1C Condensate Pump For PMT

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|---|
| | <ul style="list-style-type: none"> ■ If Equipment Operator is contacted, report that the "1C" Condensate Pump is ready to start. |
| | <ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate. |

EVENT 2: Continue to Withdraw Control Rods

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|---|
| | <ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate. |

EVENT 3: IRM Channel "F" Fails Upscale

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|---|
| | <ul style="list-style-type: none"> ■ Activate Trigger #1 after crew continues with the startup <u>and</u> when prompted by evaluator. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted, wait 5 minutes and report back that IRM Channel "F" indicates failed upscale with no apparent reason. |
| | <ul style="list-style-type: none"> ■ If I&C / WWM contacted, report that failure will be investigated as soon as possible. |

EVENT 4: RCIC Inadvertent Initiation and RPV Injection

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ Ensure RCIC initiation trigger timer activates appropriately. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted, report that the RCIC start will be investigated immediately. |
| | <ul style="list-style-type: none"> ■ If I&C / WWM contacted, report that RCIC start will be investigated as soon as possible. |
| | <ul style="list-style-type: none"> ■ Respond to other requests for assistance as appropriate. |

EVENT 5: "1A" CRD Pump High Vibration

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|---|
| | <ul style="list-style-type: none"> ■ Ensure CRD pump high vibration trigger timer activates appropriately. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted to investigate the high vibration, wait 5 minutes and report back that the outboard pump bearing is red hot and the pump is visibly shaking. |
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted to prepare to start the "1B" CRD pump, wait 5 minutes and report back that the "1B" CRD pump is ready to start. |
| | <ul style="list-style-type: none"> ■ After the "1B" CRD pump is running, toggle "B" CRD pump discharge valve open. |

EVENT 6,7: Coolant Leakage in Drywell / Large Steam Leak in Drywell

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|--|
| | <ul style="list-style-type: none"> ■ Trigger 2 is activated after the "1B" CRD pump is started AND prompt from evaluator. |
| | <ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate. |
| | <ul style="list-style-type: none"> ■ Ensure Trigger 3 activates when drywell pressure goes above 1.2 psig. |
| | <ul style="list-style-type: none"> ■ Respond to request for assistance as appropriate. |
| | <ul style="list-style-type: none"> ■ If requested, perform the field actions of SE-10. <ul style="list-style-type: none"> -Reset RHRSW Rad Monitor -Reset RE ARM's -Reset shunt trips -Perform running checks on the diesel generators |

EVENT 8: "1A" RHR Pump Trips on Start Signal

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|---|
| | <ul style="list-style-type: none"> ■ If Equipment Operator / Floor Supervisor contacted to investigate the "1A" RHR pump trip, wait 5 minutes and report back that an overcurrent relay is tripped on the pump breaker on bus D11. |
| | <ul style="list-style-type: none"> ■ If I&C / WWM contacted, report that the "1A" RHR pump trip will be investigated promptly. |
| | <ul style="list-style-type: none"> ■ Respond to other requests for assistance as appropriate. |

EVENT 9: "1B" RHR Pump Trips When Initiating "B" RHR Containment Spray

| ✓ | MALFUNCTION / REMOTE FUNCTION / REPORT |
|---|---|
| | ■ If Equipment Operator / Floor Supervisor contacted to investigate the "1B" RHR pump trip, report that the trip will be investigated promptly. |
| | ■ If I&C / WWM contacted, report that the "1B" RHR pump will be investigated as soon as possible. |
| | ■ Respond to other requests for assistance as appropriate. |

Op-Test No. ILT05-1Scenario No. 3Event No.: 1Event Description: Start the "1C" Condensate Pump for PMT

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | CRS | Direct PRO to start the "1C" condensate pump. |
| | PRO | Start the "1C" condensate pump IAW S05.1.B: <ul style="list-style-type: none"> ○ Open HV-005-101C, condensate pump suction valve. ○ Ensure HV-005-102C, condensate pump discharge valve, is closed. ○ Ensure all local checks are complete at the pump. ○ Adjust FV-C-005-103, recirculation valve controller, is adjusted to 7500 gpm. ○ Start the "1C" condensate pump. ○ When starting current has decayed, open HV-005-102C, condensate pump discharge valve. ○ Ensure all running checks are complete, including performance of S05.9.A, Routine Inspection of Condensate System. |

Op-Test No. ILT05-1Scenario No. 3Event No.: 2Event Description: Continue to Withdraw Control Rods

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | CRS | Direct RO to continue the Reactor startup IAW GP-2. |
| | RO | Resume control rod withdrawal IAW GP-2. |

Op-Test No. ILT05-1Scenario No. 3Event No.: 3Event Description: IRM Channel "F" Fails Upscale

| Time | Position | Applicant's Actions or Behavior |
|------|----------|--|
| | RO | Recognize that IRM channel "F" has failed upscale resulting in a half scram and report the failure to the CRS. |
| | CRS | Direct RO to stop rod withdrawal. |
| | RO | Reference ARC for annunciator 107 Reactor H-3, IRM UPSCALE / INOPERABLE. |
| | CRS | Direct RO to bypass the "F" IRM and reset the half scram. |
| | RO | Bypass the "F" IRM. |
| | RO | Reset the half scram. |
| | CRS | Reference Tech Spec 3.3.1 and 3.3.6 for the failed instrument. |

Op-Test No. ILT05-1Scenario No. 3Event No.: 4Event Description: RCIC Inadvertent Initiation and RPV Injection

| Time | Position | Applicant's Actions or Behavior |
|------|----------|--|
| | PRO | Recognize that RCIC has started and report to CRS. |
| | CRS | Direct the PRO to secure RCIC. |
| | RO | Recognize Reactor power goes up slightly and returns to pre-injection power level. |
| | PRO | <p>Trip RCIC and prevent another unplanned injection by securing IAW S49.2.A, RCIC SHUTDOWN FROM AUTOMATIC OR MANUAL INITIATION:</p> <ul style="list-style-type: none"> ○ Ensure RCIC barometric condenser vacuum pump is operating. ○ Depress and release the RCIC turbine trip pushbutton. ○ Verify the RCIC turbine comes to rest. ○ Place the RCIC flow controller (FIC-49-1R600) in manual and set to 0%. ○ Place HV-50-112, RCIC trip throttle valve, to close. |
| | CRS | Reference OT-104 for unexpected reactivity addition. |
| | CRS | Reference T.S. LCO 3.7.3 for RCIC out of service. |

Op-Test No. ILT05-1Scenario No. 3Event No.: 5Event Description: "1A" CRD Pump High Vibration

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | RO | Reference ARC for annunciator 107 REACTOR I-3, VIBRATION ALARM DANGER |
| | PRO | Investigate high vibration on VMS computer. |
| | PRO | Recognize that the "1A" CRD pump is indicating high vibration. |
| | CRS | Direct dispatching the EO / Floor Supervisor to check on the high vibration condition of the "1A" CRD pump. |
| | RO / PRO | Dispatch the EO / Floor Supervisor to investigate the high vibration on the "1A" CRD pump. |
| | CRS | When report comes back from the EO stating that the "1A" CRD pump has a hot bearing and is shaking, direct the RO trip the "1A" CRD pump and start the "1B" CRD pump. |
| | CRS | Enter ON-107, CONTROL ROD DRIVE SYSTEM PROBLEMS. |
| | RO / PRO | Direct the EO to perform startup checks on the "1B" CRD pump. |
| | RO | Start the "1B" CRD Pump. |
| | RO | Direct EO/ Floor Supervisor to open "1B" CRD discharge valve. |

Op-Test No. ILT05-1Scenario No. 3Event No.: 6,7Event Description: Coolant Leakage in Drywell / Large Steam Leak in Drywell

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | PRO | Reference ARC for annunciator 115 COOL B B-5, DRYWELL COOLER DRAIN FLOW HIGH |
| | RO | Reference ARC for annunciator 107 REACTOR F-2, DRYWELL HI / LOW PRESS |
| | CRS | Enter OT-101, High Drywell Pressure. |
| | CRS | Direct PRO to maximize Drywell cooling and terminate Primary Containment inerting |
| | PRO | Verify Drywell cooling maximized and Primary Containment inerting is not in progress |
| | CRS | Direct PRO to isolate RWCU IAW OT-101. |
| | PRO | Isolate RWCU. |
| | RO | Recognize failure of RPS to automatically scram Reactor and report to CRS. |
| | RO | Insert a manual Reactor scram. |
| | RO | Recognize manual scram failure and report to CRS. |
| | CRS | Enter T-101 for failure to scram and high drywell pressure. |
| | CRS | Enter T-102 for high drywell pressure. |
| | CRS | Direct RO to manually initiate RRCS / ARI. |
| CT | RO | Arm and depress both divisions of RRCS initiation pushbuttons. |
| | RO | Recognize that all rods inserted and inform the CRS. |
| | CRS | Direct the crew to control RPV injection from ECCS and low pressure systems to prevent uncontrolled RPV flood up. |
| | PRO | Control injection into the RPV from ECCS that started. |
| | CRS | Enter SE-10 for the LOCA signal. |
| | PRO | Re-energize busses in MCR per SE-10. |
| | RO / PRO | Dispatch EO / Floor Supervisor to perform SE-10 actions in the field. |
| | PRO | Secure the "1A" and "1B" recirc pumps due to loss of cooling water. |

Op-Test No. ILT05-1Scenario No. 3Event No.: 6,7Event Description: Coolant Leakage in Drywell / Large Steam Leak in Drywell

| Time | Position | Applicant's Actions or Behavior |
|------|----------|--|
| | CRS | Direct PRO to spray the Suppression Pool per T-225 using RHR before Suppression Pool pressure reaches 7.5 psig (see Event #8 for failure of the "1A" RHR pump and thermal overload trip of HV-51-1F024B) |
| | PRO | Spray the Suppression Pool per T-225: <ul style="list-style-type: none"> ○ Ensure the "1B" RHR pump suction valve open (HV-51-1F004B). ○ Ensure the following RHR valves are closed: HV-51-1F006B, 1F015B, 1F016B, and 1F017B. ○ Ensure "1B" RHR pump is running. ○ Ensure the following RHR valves are open: HV-51-1F047B, 1F003B and 1F048B. ○ Open HV-51-1F024B to establish 8000 to 8500 gpm flow. ○ Open HV-51-1F027B to establish suppression pool spray. ○ Place RHRSW in service per S12.1.A. ○ Close HV-51-1F048B, heat exchanger bypass. |
| | CRS | Direct PRO to bypass and restore drywell cooling when drywell air temperature reaches 145 degrees F. |
| | PRO | Bypass and restore drywell cooling. |
| | CRS | Enter T-112 when safe side of T-102 curve PC/P-3 cannot be maintained. |
| | CRS | Direct RO / PRO to open 5 ADS valves. |
| CT | RO / PRO | Open 5 ADS valves. |
| | CRS | Direct PRO to spray the Drywell per T-225. |
| | PRO | Spray the Drywell per T-225: <ul style="list-style-type: none"> ○ Ensure the "1B" RHR pump suction valve open (HV-51-1F004B). ○ Ensure the following RHR valves are closed: HV-51-1F006B, 1F015B, 1F016B, and 1F017B. ○ Ensure "1B" RHR pump is running. |

Op-Test No. ILT05-1Scenario No. 3Event No.: 6,7Event Description: Coolant Leakage in Drywell / Large Steam Leak in Drywell

| Time | Position | Applicant's Actions or Behavior |
|------|----------|--|
| | | <ul style="list-style-type: none">○ Ensure the following RHR valves are open: HV-51-1F047B and 1F003B.○ Trip the reactor recirculation pumps.○ Remove the drywell cooling fans from service.○ Close HV-51-1F027B to secure suppression pool spray.○ Throttle HV-51-1F024B to a flow of 9,250 to 10,500 gpm.○ Open HV-51-1F021B, inboard containment spray valve.○ Request CRS verify on the SAFE side of Drywell Spray Initiation Limit Curve per T-102.○ Throttle open HV-51-1F016B, outboard containment spray valve. |

Op-Test No. ILT05-1Scenario No. 3Event No.: 8

Event Description: "1A" RHR Pump Trips on Start Signal / Thermal Overload on RHR Valve HV-51-1F024B

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | PRO | Recognize that the "1A" RHR pump tripped on overload and report failure to CRS. |
| | CRS | Direct the PRO to use "1B" RHR for suppression pool spray. |
| | PRO | Recognize that HV-51-1F024B failed to open on thermal overload. |
| | CRS | Direct the PRO to attempt to override HV-51-1F024B open. |
| | PRO | Recognize that HV-51-1F024B has opened and report to CRS. |
| | PRO | Continue placing suppression pool spray in service using "B" RHR. |

Op-Test No. ILT05-1Scenario No. 3Event No.: 9Event Description: "1B" RHR Pump Trips When Initiating "B" RHR Containment Spray

| Time | Position | Applicant's Actions or Behavior |
|------|----------|---|
| | PRO | Recognize that the "1B" RHR Pump has tripped and report failure to CRS. |
| | PRO | Report to CRS that drywell spray was not successful with "B" RHR and an alternate method must be used. |
| | CRS | Direct the PRO to spray the drywell utilizing RHRSW IAW T-225. |
| CT | PRO | Spray the drywell IAW T-225 using RHRSW: <ul style="list-style-type: none"> ○ Ensure the "1B" RHR pump is not running. ○ Ensure the following RHR valves are closed: HV-51-1F004B, 1F006B, 1F015B, 1F016B, 1F017B, 1F024B, 1F027B, 1F047B, 1F048B, and 051-1F098. ○ Place HSS-012-002B, B/D RHRSW Hi Rad bypass switch, to "BYPASS". ○ Open the RHRSW to RHR emergency crosstie valves. ○ Open HV-51-1F021B, inboard containment spray valve.. ○ Request CRS verify on the SAFE side of Drywell Spray Initiation Limit Curve per T-102. ○ Simultaneously perform the following to maintain RHRSW discharge pressure 75 to 120 psig. ○ Throttle fully closed HV-51-1F068B, heat exchanger RHRSW outlet valve. ○ Throttle fully open HV-51-1F016B, outboard containment spray valve. |
| | RO | Assist the PRO in initiating drywell spray with RHRSW. |
| | RO/PRO | Monitor drywell pressure. |

TERMINATION POINT

The scenario will be terminated when the following criteria are met:

1. Drywell spray is in progress utilizing RHRSW and drywell pressure is lowering.

SCENARIO #3

Turnover Sheet

INITIAL CONDITIONS

- Unit 1 is at 5% power with a startup in progress after a refueling outage.
- Reactor pressure is 390 psig with 2½ BPV's open (pressure set in control)
- "1A" and "1B" RFP are in standby with the LIC-006-120 controller in AUTO
- "1A" and "1B" condensate pumps are running
- "1B" and "1C" circulating water pumps are running
- Main Turbine is in shell warming
- "1A" and "1B" recirculation pumps are at 28% speed
- "1A" RWCU pump is in service
- "1A" SJAE in service with vacuum at 29" Hg
- Drywell closure is complete
- ST-6-092-313-1 has been completed up to and including step 4.12.3.

INOP / OUT OF SERVICE EQUIPMENT

- 1A SRM is inoperable and bypassed, with repairs in progress.

PLANNED EVOLUTIONS

- Continue with the startup / heatup at step 3.3.29 of GP-2.
- Start the "1C" Condensate Pump for PMT IAW S05.1.B step 4.7.
- Control rod withdrawal will continue with rod 18-59 (00 to 12).