

**Draft Submittal**  
(Pink Paper)

1. **Operating Test Simulator Scenarios**

**SURRY EXAM 2002-301**

**50-280, 281/2002-301**  
**MARCH 18 - 28, 2002**

# Draft Submittal

(Pink Paper)

1. Scenario Outline (ES-D-1) and Simulator Scenario Operator Actions (ES-D-2)
2. Draft Operating Test Simulator Scenarios
  - A. ES-D-1
  - B. ES-D-2

**SURRY EXAM 2002-301**

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Appendix D Scenario Outline Form ES-D-1 (R8, S1)

Facility: Surry Scenario No.: 1 Op-Test No.: 1  
 Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Initial Conditions:  
 100% Rx Power  
 Known Leakage in 1A S/G  
 Very high grid demand  
 (Note: FC 1113 can be input early)  
 Turnover:  
 Inservice surveillance 1-PT-18.6I on PORV Block valves  
**1C Steam line rad monitor out of service for calibration**

Event No.	Malf. No.	Event Type*	Event Description
1	TBD	N(BOP, SRO)	Inservice valve stroke test surveillance (PORV Block valves strokes closed and will not reopen Tech Spec 3.1.6 (Block valve for PCV-1456)) Team will prebrief evolution prior to entering Simulator, but while sequestered.
2	MMS-08	C(BOP)	Steam Generator 1C (CH 4 selected to control) Steam flow transmitter fails low (ARP 1F-G6, 1F-D, ) slowly enough for Operators to diagnose. Operator will take manual control of "C" MFRV and control "C" SG level. Time compression will take place to correct channel failure and allow "C" MFRV auto control
3	MTU-14	C(BOP)	Loop seal failure causing degrading condenser vacuum (ARP 1 (1F-B6). Crew performs AP-14 Loss of Condenser Vacuum). After 10% load reduction, vacuum loss cause can be found and corrected.
4		R(RO)	Power Reduction due to degrading vacuum. Slowly enough to let ramp stabilize vacuum after about 10% ramp.
5	MCH-26	C(RO)	FC 1113 fails high (ARP 1D-A5), requiring an alternate boration method. This failure takes place during the 10% ramp.
6	MRC-48	C(RO)	PZR Pressure Controller (PC-444A) fails high (ARP 1C-A8 ) slowly enough to take manual control without tripping.
7	MRM-02	I(??)	Steam Generator Tube Leak increasing to setpoint of Condenser Air Ejector Rad Monitor w/ auto actions of Rad Monitor not occurring.  Note: Malfunction may need tweaking to make rad monitor respond to Tube leak ramp in and fail to reposition TV-SV-102 and 103
8	MRC-24	M(All)	S/G Tube rupture
9	MEL-01	M(All)	LOSP (after cooldown completed and prior to pressure reduction)
10	??	M(All)	PORV 1455 fails to open when demanded

\* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor





Event Description: Loop seal failure causing degrading condenser vacuum (ARP 1 (1F-B6). Crew performs AP-14 Loss of Condenser Vacuum). After 10% load reduction, vacuum loss cause can be found and corrected.

T i m e	Position	Applicant's Actions or Behavior
	BOP	BOP diagnoses degraded vacuum  Alarms: TURB LO VAC (1F-B6) Indications: Decreasing trend as indicated on CN-PR-101A or CN-PR-101B Decreasing trend as indicated on P-250 points P2500A or P2510A Decreasing MW output due to degrading vacuum
	SRO	Implements AP-14, LOSS OF MAIN CONDENSER VACUUM
	BOP	Checks turbine power > 30%  Monitors condenser vacuum and reports to SRO if vacuum decreases to a value > 24.5 IN-HG
	SRO/BOP	Dispatches operator to check air ejector operation and place hoppers in service IAW Attachment 1, AP-14 (hoppers effective only when vacuum <26.5 IN-HG
	SRO	Direct turbine ramp IAW Attachment 2, AP 14 Utilize conservative decision making during load reductions Control RCS Tav <= 577 degrees F and RCS pressure >= 2205 psig
		Directs investigation of source of air inleakage IAW Attachment 4, AP 14
		Contacts OMOC with status





Event Description: **Pressurizer Pressure Controller fails high slowly enough for crew to take manual control prior to trip**

Time	Position	Applicant's Actions or Behavior
	RO	<p>Diagnoses high failure of either PZR Pressure Transmitter PT 444 or Master Controller</p> <p>Alarms:                      PRZR PRESS CONTR HI (1C-A8)                      PRZR LO PRESS (1C-B8)                      PRZR SFTY VV PWR RELIEF VV OPEN (1D-H4)                      PRZR LO LVL                      PRZR PWR RELIEF LINE HI TEMP (1C-D7)                      PRZR RELIEF TK HI PRESS                      OVTEMP DELTA T TURB RNBK &amp; ROD STOP (1G-F3,F4)</p> <p>Indications:                      MCB meter for PT 444 reads maximum pressure                      PRZR Master Controller goes to maximum output                      PRZR Spray valves go full open</p>
		<p>Takes action IAW ARP 1C-A8 (Note: actions taken for any other ARP will delay actions necessary to avoid a Rx Trip or SI)</p> <p>Place Master Controller in MANUAL and decrease output.</p> <p>Verify closed or close 1-RC-PCV-1455C</p>
	SRO	<p>Directs RO to control pressure IAW 1-AP-31.00. Should note that 1-RC-PCV-1455C is inoperable while control is in manual. This makes BOTH PORV's inoperable. SRO should re-review TS 3.1.6</p>
	RO	<p>Maintains RCS pressure IAW 1-AP-31.00 (see attached)</p>
	SRO	<p>Provide notifications:                      OMO</p>

Op-Test No.: <u>1</u> Scenario No.: <u>1</u> Event No.: <u>7</u> Page <u>   </u> of <u>   </u>		
Event Description: <b>Steam Generator Tube Leak increasing to setpoint of Condenser Air Ejector Rad Monitor w/ auto actions of Rad Monitor not occurring. Steam generator 1A rad monitor fails as is at this point</b>		
T i m e	Position	Applicant's Actions or Behavior
	BOP	<p>Diagnose worsened Steam Generator Tube leak as evidenced by Condenser Air Ejector alarm.</p> <p>Alarms: CONDENSER AIR EJECTOR ALERT/FAILURE (1-RM-G8)</p> <p>Indications: Upscale on 1-SV-RI-111</p>
		Verifies alarm reading greater than background or radiation level has trended up by reading 1-SV-RI-111 or 1-RM-RR-150B Pen 4
		<p>Checks ERFCS points using Group 80 Review:</p> <p>R1RM204C, MS-RI-124 R1RM205C, MS-RI-125</p>
		<p>Monitor SG Blowdown Monitors:</p> <p>1-SS-RI-112</p>
	SRO	<p>Directs verification of automatic actions associated with Condenser Air Ejector alarm.</p> <p>Note: Could not determine how transition to ARP attachment 1 was achieved when the alarm is valid and auto actions do not occur.</p>
		Directs compensatory actions or physical positioning of TV-SV-102 and TV-SV-103 per ARP 1-RM-G8 Attachment 1

	RO	<p>Checks RCS leakrate</p> <p>PRZR level decreasing (slight) Ann 1D-E5 LIT (CHG PP TO REGEN HX HI-LO FLOW) A discernable negative change in VCT level trend has developed.</p> <p>Note: At this point, these indications will be inconclusive due to small magnitude of leak. Also if previous failure of controller 1113 overly complicates controlling primary inventory, we can let I&amp;C repair it before</p>
	SRO	<p>Initiates 0-OSP-RC-002, STEAM GENERATOR PRIMARY TO SECONDARY LEAKAGE MONITORING</p> <p>Directs Performance of RCS leak rate IAW 1-OPT-RC-10.0, REACTOR COOLANT LEAKAGE - COMPUTER CALCULATED</p> <p>Note: May not be sufficiently stable to meet initial conditions of the leakrate</p>
		<p>Directs Air Ejector flow rate measuring device to be verified OPERABLE.</p>
		<p>Notifies OMO and STA</p>

Op-Test No.: <u>1</u> Scenario No.: <u>1</u> Event No.: <u>4</u>		Page ___ of ___
Event Description: Significant ramp up of S/G leak leads to S/G Tube rupture in 1A SG		
T i m e	Position	Applicant's Actions or Behavior
	All	<p>Diagnose requirement to trip Rx and SI</p> <p>Alarms:  PRZR Lo Press  PRZR Lo Level  STM GEN 1A LVL ERROR  CHRG PP TO REGEN HX HI-LO FLOW</p> <p>Indications: (pre trip)  PRZR pressure and level decreasing  Tavg stable  Charging line flow increasing  Decreasing feed flow to 1A SG</p> <p>Indications: (post trip)  Rx trips on OTDT or Low PRZR Pressure  Turbine trip by Rx Trip  Rx trip and bypass breakers open  Rod bottom lights are lit  Generator trip 30 seconds after Rx trip  All AFW pumps start  HP &amp; LP Heater Drain pumps trip</p>
	SRO	<p>Directs Rx Trip and Safety Injection</p> <p>Note manual Rx Trip and SI are functions of how rapidly plant conditions deteriorate and the crew reacts. Would like for transient to be slow enough for crew to manually trip, then manually SI upon evaluation of E-0, step 4</p>
	RO	Verifies Rx tripped
	BOP	Verifies Turbine tripped
		Verifies both AC emergency buses energized
	RO/BOP	Checks SI initiated
	SRO	<p>If SI not automatically initiated, directs manual initiation of SI</p> <p>Note: If crew goes to ES-0.1, see attached</p>

BOP	Verify feedwater isolation MFP discharge valves closed MFP tripped Feed Reg & bypass valves closed
	Verify CTMT isolation Phase I Phase I TV's closed 1-CH-MOV-1381 closed 1-SV-TV102A closed PAM Isolation valves closed 1-DA-TV-103A
	Verify AFW pumps running: MD AFW pumps (Time delayed)
RO	Verify SI Pumps running: CHG pumps
	Check CHG pump auxiliaries: CHG pump CC pump
BOP	Check intake canal level >24 ft and being maintained
	Check Main Steam Isolation required:  1E-F10 – Off 1B-C4 – Off
RO	Check if CTMT Spray required:
	Verify SI flow: 1-SI-FI-1961 1-SI-FI-1962 1-SI-FI-1963 1-SI-FI-1943 or 1943A
	Check THREE charging pumps running
	Reset SI
	Stop one charging pump and place in AUTO
	Check RCS pressure > 185
	Verify SI reset
	Stop one LHSI pump and place in AUTO
BOP	Verify AFW flow > 350 GPM
	Check AFW MOV's open
	Verify SI alignment Note: See attached E-0, page 9 of 18

	Verify ventilation alignment and AC power alignment IAW Attachment 2 Note: See attached E-0, attachment 2
RO	Check RCS Average Temperature stable at or trending toward 547 degrees F If greater than 547, then dump steam through Steam Dumps or Atmospheric. If less than 547, then secure dumping steam and reduce AFW if SG levels
	Check PRZR PORV and Spray Valve status: PORV - closed Spray valves - closed
	Check RCP trip and miniflow recirc criteria HHSI flow > 0 RCS subcooling > 30 degrees F RCS pressure > 1275
BOP	Check SG's NOT faulted: Pressure in all SG's stable or increasing
	Check SG tubes ruptured: Condenser air ejector radiation > normal SG radiation > normal SG MS radiation > normal TDAFW pump exhaust radiation > normal (if running)
SRO	Directs transition to E-3
RO	Check RCP trip and miniflow recirc criteria HHSI flow > 0 RCS subcooling > 30 degrees F
Crew	Identifies ruptured 1A SG Level rise SG MS line monitor high
BOP	Isolates 1A SG Adjusts SG PORV controller to 1035 Verifies 1A SG PORV closed Verifies 1A SG blowdown TV's closed
	Isolates 1A SG MSTV
BOP	Checks ruptured SG level > 11%
	Checks status of PRZR PORV's and block valves Power to block valves (Note power should NOT be available for Block valve for PCV-1456 PORV's closed At least ONE block valve open

	<p>Check if SGs are not faulted:  Pressure stable or increasing in ALL SG's</p>
	<p>Check intact SG level:  Any narrow range level &gt; 11%  Check BOTH emergency busses energized  Control feed flow to maintaining narrow range level between 17% and 50%.</p>
RO	Reset BOTH trains of SI
BOP	<p>Verify Instrument Air available  Annunciator 1B-E6 not lit  Check at least ONE CTMT Instrument Air compressor running  Verify 1-IA-TV-100 - OPEN</p>
*	<p>Align Condenser Air Ejector to CTMT:  Verify 1-SV-TV-102 - OPEN  1-SV-TV-103 - CLOSED  OPEN:  1-SV-TV-102A (NOTE: Will this valve close on LOOP?)</p>
BOP/RO	Verify ALL AC busses - Energized by Offsite power
RO	<p>Check is LHSI pumps should be stopped:  RCS pressure &gt; 250 psig  Stop LHSI pumps and put in AUTO</p>
BOP	<p>Check 1A SG isolated from 1B or 1C SG's  1A SG MSTV or NRV - CLOSED  Check 1A SG pressure &gt; 350 psig</p>
Operator Notes	<p>Flow from each stream line should be maintained &lt; 1E6 PPH to prevent Main Steam line isolation during cooldown.</p> <p>Low PRZR pressure SI signal should be blocked when PRZR pressure decreases to less than 2000 psig</p> <p>HI stm flow SI signal should be blocked when Tave &lt; 543 degrees</p> <p>RCP trip criteria DOES NOT APPLY after initiation of an operator controlled cooldown.</p>
BOP	<p>Initiate RCS Cooldown  Determine required core exit temperature from table  Place Steam Dump Mode Select switch in Steam Pressure Mode  Dump steam to the condenser at the maximum rate from 1B and 1C SG's  Check CETC - Less that required temperature (from table)  Stop RCS cooldown</p>
	Check 1A SG pressure stable or increasing

RO	Check subcooling > 50 degrees F
	DEPRESSURIZE RCS TO MINIMIZE BREAK FLOW AND REFILL PRZR Check normal spray available Spray valves available AND RCP's A and C running
ALL	LOSP occurs

Op-Test No.: <u>1</u> Scenario No.: <u>1</u> Event No.: <u>9</u>		Page ___ of ___
Event Description: Loss of Offsite Power for both units, all EDG's start and load per design and all equipment starts and runs per design		
T i m e	Position	Applicant's Actions or Behavior
*	All	Diagnose that an LOOP has occurred. Significant alarms: Steam Dump valves trip open (Do these valves really open?) Main transformer trouble 4 KV EMERG BUS TIE STUB BUS BKER TRIP 4 KV RES SUP BKR OPEN CC PPS DISCH HDR LO PRESS DIESEL FIRE PUMP AUTO START  Significant indications: Breakers 15A1, 15B1, 15C1, 15D1, 15E1, 15F1, 15A2, 15B2 and 15C2 - OPEN EDG's 1 & 3 auto start and energize the emergency busses. Emergency stub bus breakers open All station service loads are deenergized. RCP's trip CC pumps trip
	SRO	Directs entry to 1-AP-10.07, Loss of Unit 1 Power
	BOP	Checks that Transfer buses D and F are DEENERGIZED AND
		Verify 4160V Emergency buses are BOTH ENERGIZED
		Secure AAC DG unless required by Unit 2
		Check Emergence bus 1J voltage > 4280V
		Verify AFW pumps running MD AFW TD AFW, if necessary
*	RO	Check charging pumps running (??)
	BOP	Check Charging pump auxiliaries running CHG pump CC Pump
	SRO	Initiate attachment 3
	BOP	Verify communications capability:

SRO	Restore Instrument Air CLOSE 1-SA-SOV-175 Initiate Attachment 4
BOP	Restore emergency stub bus CC PUMP control switches in PTL RHR PUMP control switches in PTL Direct local closing of Stub Bus feeder breakers on energized Emergency
RO	Verify at least one CC pump running
	Check either SFP pump running
BOP	Verify Intake Canal Level – stable or increasing
	Check CHG pump auxiliaries: CHG pump CC pump – running CHG pump SW pump - running
	Check Semi-Vital Bus – Power has been interrupted
SRO	Direct performance of 1-AP-10.7, Attachment 3
BOP	Verify 1A System Annunciators- Not Lit 1B-E6, IA 36 HDR –PRESS/IACOMPR 1 TRBL 1B-G5, INST AIR DRYER TRBL 1B-E5, SA COMPR TRBL 1B-F5, CTMT INST AIR COMPR TRBL
RO	Verify Unit Conditions PRZR level - STABLE PRZR pressure –STABLE
* SRO	Direct return to 1-E-3, step18
RO	DEPRESSURIZE RCS TO MINIMIZE BREAK FLOW AND REFILL PRZR Check normal spray available Spray valves available AND RCP's A and C running
	DEPRESSURIZE RCS USING PRZR PORV TO MINIMIZE BREAK FLOW AND REFILL PRZR
	Open 1-PCV-1455 (only PORV available)
	1-PCV-1455 fails to open
SRO	Directs entry to 1-ECA-3.3

Event Description: Only available PORV, 1-PCV-1455, fails to open, sending crew to 1-ECA-3.3

T i m e	Position	Applicant's Actions or Behavior
*	All	Diagnose that all pressure control is lost, requiring entry to 1-ECA-3.3.
	SRO	Directs entry to 1-ECA-3.3
	BOP	Check 1A SG narrow range level < 75% Note: If 1A SG level > 75%, skip down to step that determines if SI can be terminated
*		If crew attempts to open block valve for PCV 1456, delay restoring power to force continuation of ECA 3.3
		Check 1B and 1C SG levels Either above 11% Check emergency busses energized Control feed flow to maintain narrow range level between 17% and 50%
	RO	Check PRZR level > 22% NOTE: If condition not met, return to step that checks 1A SG level and cycle back through to this step.
		Check if SI can be terminated: Check RCS subcooling based on CETCs >30 degrees F Check secondary heat sink AFW>350 gpm OR either 1B or 1C SG > 11%
		Stop all but one chg pump and put in auto
	RO	Isolate HHSI to Cold Legs Verify: Charging pump suction from the RWST- OPEN- 1-CH-MOV-1115B 1-CH-MOV-1115D Charging pump miniflow recirc valves OPEN 1-CH-MOV-1275A 1-CH-MOV-1275B 1-CH-MOV-1275C 1-CH-MOV-1373 Close HHSI to Cold Leg 1-SI-MOV-1867C

	<p>Establish Charging Flow</p> <p>Close CHG flow control: 1-CH-MOV-1122</p> <p>Verify CHG line isolation – OPEN 1-CH-HCV-1310A</p> <p>Open CHG line isolation MOV's 1-CH-MOV-1289A 1-CH-MOV-1289B</p> <p>Establish at least 40 gpm charging flow using CHG flow control</p>
	<p>Verify SI flow not required: RCS subcooling based on CETC's &gt; 30 degrees F Check RVLIS indication &gt; 63% , full range channel</p>
	<p>Check CC system Status SW to RS HX's – ISOLATED SW to CC HX's – IN SERVICE CC pumps – AT LEAST ONE RUNNING</p>
	<p>Check RCP Cooling: NOTE: RCP's not running</p>
	<p>Check if Letdown can be established Put PRZR heaters in PTL</p>
SRO	<p>Direct OUTPUT fuses be removed: 1-RP-CAB-7, LC -1- 460C 1-RP-CAB-21, LC-1-459C</p>
RO	<p>Establish letdown Adjust charging line flow &gt; 40 gpm Open letdown line pressure control valve 1-CH-PCV-1145 Close or verify closed letdown orifice isolation valves 1-CH-HCV-1200A 1-CH-HCV-1200B 1-CH-HCV-1200C Open letdown isolation valves 1-CH-TV-1204A 1-CH-TV-1204B 1-CH-LCV-1460A 1-CH-LCV-1460B Open letdown orifice isolation valve(s) Adjust 1-CH-PCV-1145 to maintain letdown pressure Adjust NRHX outlet temperature control valve to control letdown temperature, 1-CC-TCV-103 Check VCT Makeup controls: Verify on BATP operating and aligned to Unit 1</p>

	<p>Align CHG pump suction to VCT  Verify VCT level &gt; 27%  Open CHG pump suction from VCT MOV's  1-CH-MOV-1115C  1-CH-MOV-1115E  Close CHG pump suction from RWST MOV:  1-CH-MOV-1115B  1-CH-MOV-1115D  Check RWST crosstie valves – CLOSED  1-SI-TV-102A</p>
	<p>Check if CS should be Stopped</p>
*	<p>TRY (???) to establish auxiliary spray:  Verify normal letdown – IN SERVICE  Establish auxiliary spray flow:  Close normal PRZR spray  Open HCV-1311, CHG AUX Spray Valve</p>
RO	<p>Depressurize RCS to Minimize Break Flow and Refill PRZR:  Spray PRZR with maximum available spray until any of the following are satisfied:</p> <p>PRZR level &gt;68%  OR  RCS subcooling based on CETC's &lt;30 degree's F  OR  BOTH of the following exist:  RCS pressure &lt; 1A SG pressure  PRZR level &gt; 22%</p>
SRO	<p>GO TO 1-E-3, STEAM GENERATOR TUBE RUPTURE, STEP 32</p>
	<p>FREEZE</p>

Facility: Surry                      Scenario No.: 2                      Op-test No.: \_\_\_\_\_

Examiners: \_\_\_\_\_                      Operators: \_\_\_\_\_

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**Initial Conditions:** Ramping up with power at 50% just after placing second feed pump in service. PT-446 selected for control

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**Turnover:** Ramping to 100%, leak in 1A SG, high grid demand.

Event No.	Malf. No.	Event Type*	Event Description
1	MMS-14	RO(I)	PT-446 fails low (selected channel)
2	MBC-01	BOP(C)	Bearing cooling water pump trips and standby pump fails to auto start.
3	MMC-04	RO(C)	Loss of CC to NRHX requiring normal letdown to be secured.
4	<u>RO</u> ?	BOP(N)	Place excess letdown in service <u>WHO WILL DO THIS ?</u>
5	MTU-09	BOP(C)	Main Turbine Governor valve goes shut (Max rate)
6	MTU-02	RO&BOP (R)	Main Turbine vibration requiring rampdown
7	MMS-03	M(ALL)	Major SG fault on 1B SG (Max rate)
8	MEL-01	M(ALL)	Loss of offsite power (approximately 90 seconds after SI)
			<b>Post major event failures</b>
	MEL-11		#1EDG fails to start
			1B Containment Spray pump fails to auto start
			Note: The turbine vibration should force a ramp down and ultimately require a manual Rx Trip. The LOSP should occur after the SI in such a way as to remove power from AFW MOV's 151 A,C and E after they have stroked open, requiring the crew to manually isolate the flow path during the E-2 procedure.

\* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Op-Test No.: _____ Scenario No.: 2 Event No.: 1		Page ___ of ___
Event Description: PT 446 FAILURE LOW		
Time	Position	Applicant's Actions or Behavior
	RO/BOP	DIAGNOSIS OF PT 446 FAILURE HA -4 TAVE TREF DEVIATION HG-5, 6, AND 7, STEAM GENERATOR LEVEL ERRORS (PROGRAMMED LEVEL HAS DECREASED TO 33 %) H H -7, STEAM DUMP VV TRIP OPEN. G C 4, UPPER ION CHAMBER DEVIATION OR AUTO DEFEAT < %50
	RO	RO TAKES RODS TO MANUAL  Performs actions of 1-OP-RP-001 to place all instruments in the Channel IV position. (This may take too long to do.)
	SRO	SRO DIRECTS PLACE RODS IN MANUAL ALSO DIRECTS TO PERFORM 1OPT-RP-001 and  ON PAGE 9 WILL CHECK P-7 ON PAGE
		REVIEWS TS 3.7 TABLE 3.7.1 1HOUR VERIFICATION OF PERMISSIVES  AND TABLE 3.7.2 SAFE GUARDS 72 HOUR TS
		OP-RP 1, utility states the brief will take long to do it.
	BOP	MAY TAKE SG FRVS TO MANUAL TO REDUCE LEVEL TO 33 %

Op-Test No.: \_\_\_\_\_ Scenario No.: 2 Event No.: 1

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Event Description: PT 446 FAILURE LOW

Time	Position	Applicant's Actions or Behavior
	SRO	REPORTS TO OMO SS I&C
	TEAM	The team SHOULD DETERMINE THAT 6 MINUTES AFTER THE FAILURE THAT AMSAC OPERATIONAL BY PASS STATUS LIGHT k-2 WILL ILLUMINATE. SHOULD ADDRESS THAT AMSAC IS NO LONGER OPERATIONAL. (NOTHING CAN BE DONE)

Op-Test No.: \_\_\_\_\_ Scenario No.: 2 Event No.: 2 Page \_\_\_ of \_\_\_  
 Event Description: B S/G PORV controller Fails HIGH.

Time	Position	Applicant's Actions or Behavior
	BOP	Diagnosis of PORV failure open.  Identify by observation of :  As indicated by red light comes on and controller output in high demand.  Observe power increase by about 3%.  Report to SRO  Take manual control of the S/G PORV Shift from automatic to manual and depress the down arrow to close the valve.
	SRO	SRO directs closure of the B S/G PORV. (No procedural guidance)
		Notify the SS to report to OMOC
		I&C will be notified by the SS.
	RO	Maintains primary plant

Op-Test No.: \_\_\_\_\_ Scenario No.: 2 Event No.: 2

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Event Description: B S/G PORV controller Fails HIGH.

Time	Position	Applicant's Actions or Behavior

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Op-Test No.: _____ Scenario No.: 2 Event No.: 3		Page ___ of ___
Event Description: Loss of CC to NRHX requiring normal letdown to be secured.		
Time	Position	Applicant's Actions or Behavior
	RO	Report that:  DG3, Demin In Divert Hi Temp.
	SRO/BOP	Reads the procedure to the crew.  ADD STEPS FROM THE ARP TO THIS EVENT.  Will not go to AP15. Not a loss of component cooling but a loss of CC to one component.
		Directs the isolation of Letdown and place excess letdown in service.
	SRO	Dispatch Aux bldg operator will check the valve closed.
	BOP	BOP NEEDS TO DO THE EVOLUTION in order to get his required malfunctions.
		Add Steps for Excess letdown IAW, OP CH 006 SHIFTING LETDOWN SECTION 5, ADD STEPS FROM PAGES 6 THUR PAGE 10 RESTORATION OF LETDOWN.
	SRO	Contacts SS to notify individuals

Op-Test No.: _____ Scenario No.: 2 Event No.: 4		Page ___ of ___
Event Description: Trip of the C Condensate Pump with failure of the A Condensate pump to start automatically (component failure for BOP)		
Time	Position	Applicant's Actions or Behavior
	BOP	Identify the failure of the C Condensate pump  Observe K D 4 annunciator, check out the breaker and then do appropriate actions.  Also J G -4, CN PPS disch Hdr lo Press.
		Manually starts the A Condensate Pump.
	SRO	Directs operators to look at the ARP Also Directs the BOP to manually start the A Condensate pump
		Notify the SS, OMOG etc.
		allowable to start the condensate pump in accordance with ops standards.
	RO	RO assists as necessary
		NO procedure guidance

Op-Test No.: \_\_\_\_\_ Scenario No.: 2 Event No.: 4

Page \_\_\_ of \_\_\_

Event Description: Trip of the C Condensate Pump with failure of the A Condensate pump to start automatically (component failure for BOP)

Time	Position	Applicant's Actions or Behavior

Op-Test No.: \_\_\_\_\_ Scenario No.: 2 Event No.: 5 Page \_\_\_ of \_\_\_

Event Description: Main Turbine vibration requiring ramp down.

Time	Position	Applicant's Actions or Behavior
	BOP	OBSERVE: Annunciators:
		J-E5 ARP.
	RO	RO reads P 250 CRT to determine turbine status.
	SRO	Direct rods to be placed in manual
		Directs J-E5 Turbine greater than 1800 Bearing Vibration greater than  bearing metal temperatures  bearing vibration less than 10 mils, it is greater. It is 10.9  Attempt to adjust turbine load to reduce vibration.  ADD ACTIONS FROM J E5 to this point.
		Reduce power at 1 % power.
		op tm 005, procedure ramp rate, or AP 23. Reduce power  Report to SS
	SS (CUE)	USE AP 23, will have to e borate with mov 350 , for 30 seconds will have to increase charging to 100 gpm, don't forget that the plant is on excess letdown.



Op-Test No.: \_\_\_\_\_ Scenario No.: 2 Event No.: 7 Page \_\_\_ of \_\_\_

Event Description: Major fault on 1 B S/G AT MAX RATE (INSIDE CONTAINMENT) WITH A LOSS OF OFFSITE POWER At 20 psi trigger. AFW MOVs will be open during the loss of offsite power.

Identify that 1 B containment spray pump did not start. The 1 A pump is not available due to the loss of power.

Time	Position	Applicant's Actions or Behavior
	TEAM	OBSERVE/REPORT :  STEAM FLOW CHANNEL 1-MS-FI-1484 AND 1485 READING LOWER THAN A AND C.  ANNUNCIATOR  B A-7 CONTAINMENT PART PRESSURE + .1 PSI B B-7 CONTAINMENT PART PRESSURE + .1 PSI B C-6/7 H G-6, Stm Gen Lvl Error H C-4 Stem Gen B Lo Level B A-3, Cnt Sump hi level. FIRST OUT: CONTAINMENT HI PRESSURE E B-9 SI annunciators 1 B DG trip.
	SRO	DIRECT A REACTOR TRIP AND ENTER E-0
		manual SI
	RO/BOP	DIAGNOSIS PLANT PARAMETERS FAULTED 'B' S/G.
		Perform immediate actions of E-0
	BOP	AP-10.07, Loss of power AP-17.04 # 2 DG running
		perform actions of E-2

Event Description: Major fault on 1 B S/G AT MAX RATE (INSIDE CONTAINMENT) WITH A LOSS OF OFFSITE POWER At 20 psi trigger. AFW MOVs will be open during the loss of offsite power.

Identify that 1 B containment spray pump did not start. The 1 A pump is not available due to the loss of power.

Time	Position	Applicant's Actions or Behavior
		Then perform actions of E-1.
		AP-1201, CW water pumps not running. Level is going down. Need to prioritize this procedure.
		E-2 entry conditions
		pressurizer master pressure controller has to be reset.
		PORV will cycle.
		1FW-57, inside service aux building operator to close, 1 MS-120 shut.
		transition to E-1 to terminate SI.
		will ultimately have to go to excess letdown op ch 006 . Again as we did it before. OP CH 006 requires normal plant operations will need to have the CC restored to the excess heat exh back in service. EOP directs at step 14 RNO, ES-1.1 to place excess letdown in service however, OPCH 006 does not tell you to get that flow back in service. Procedural problem that needs to be addressed.

Event Description: Major fault on 1 B S/G AT MAX RATE (INSIDE CONTAINMENT) WITH A LOSS OF OFFSITE POWER At 20 psi trigger. AFW MOVs will be open during the loss of offsite power.

Identify that 1 B containment spray pump did not start. The 1 A pump is not available due to the loss of power.

Time	Position	Applicant's Actions or Behavior
		No guidance, shut and isolate excess open 1381  no CC to containment Have to decide what they need to do.



Op-Test No.: \_\_\_\_\_ Scenario No.: 2 Event No.:

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Event Description:

Time	Position	Applicant's Actions or Behavior

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