Facility:	VC SUMMER		Scenario No.:1 Op-Test No.: _99-1
Examin		PER	Operators:
		LLEN KES	
Objecti	ves:	/	
Initial C BEEN I HEAVY Turnov	onditions: _PLAN SOLATED DUE E THUNDERSTOF er: PCV-444B HA	T OPERATI XTERNAL MS IN THE	ING AT 90% POWER. 'B' TRAIN EQUIPMENT IN SERVICE. PCV-445A HAS LEAKAGE. 'C' ACCUM PRESS HI/LO ANNUNCIATOR JUST ALARMED. E AREA. SEAT LEAKAGE. 'A' TRAIN COMPONENT COOLING PUMP OOS SERVICE
FOR M	AINTENANCE (C	LEARING T	TAGS). 30 GPD LEAKAGE ON 'A S/G.
Event No.	Malf. No.	Event Type*	Event Description
1		N-RO	RAISE 'C' ACCUMULATOR PRESSURE
2 ·	PRS-001A PRS-004B	I-RO	PZR PRESSURE CONTROL CHANNEL PT-444 FAILS HI (SEVERITY=2500, RAMP=15) PCV-444B STICKS OPEN (SEVERITY=50%, RAMP=5, DELAY=5, TRICCEP= IMI PRS14)
3	MSS-009E	I-BOP	'C' STEAMLINE FLOW XMITTER FT-494 FAILS LO (SEVERITY=0, RAMP=10)
4	CCW-007B	C-BOP	LOSS OF OPERATING COMPONENT COOLING WATER TRAIN
5a		N-RO	REALIGN LETDOWN TO DEMINERALIZERS
6		C-RO	RCP 'A' #1 SEAL FAILURE (SEVERITY =7.5, RAMP=120)
7		R-ALL	SRO DIRECTS POWER REDUCTION TO <38% @ 3%/MINUTE
•	CVC-004A RCS-006A	M-ALL	RCP 'A' #1 SEAL FAILURE (SEVERITY 100, RAMP=30) RCP SEAL LOCA (SEVERITY=300, RAMP=180, DELAY=60)
8			'B' TRAIN EQUIPMENT FAILS TO AUTO SI. MANUALLY ACTUATE 'B' TRAIN ECCS EQUIPMENT (SELECT=OPEN, TRIGGER=JPPLSI(1))
8	LOA-EPS-138	1	
8	LOA-EPS-138 PMP-CS004S		'A' CHARGING PUMP SHEARED SHAFT

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Op-Test No.:       99-1       Scenario No.:       1       Event No.:       1       Page       1       of       1         Event Description:       Raise 'C' Safety Injection Accumulator Pressure       Image: Comparison of the second				
	······			
Time	Position	Applicants Actions or Behavior		
	RO	Ensure the Accumulator Nitrogen Vent, HCV-936, is closed.		
		Open Nitrogen Supply, PVT-8880.		
		Open Nitrogen Supply to 'C' Accumulator, PVT-8875C.		
		Monitor Accumulator 'C' Pressure Indication.		
		When Accumulator Pressure is between 600 PSIG and 656 PSIG, close Nitrogen Supply to 'C' Accumulator, PVT-8875C.		
		Place Control Switch for PVT-8880 to CLOSE/AUTO to close PVT- 8880.		
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**Operator Actions** 

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Form ES-D-2

Event D	escription: <u>P</u> P	ressurizer Pressure Control Channel PT-444 Fails High ressurizer PORV, PCV-444B, Sticks Open
Time	Position	Applicants Actions or Behavior
1439	RO	Operator verifies failed Control Channel
<u> </u>		PI-444 indicates HI
		PZR CNTRL PRESS HI Annunciator
<u></u>		PZR PRESS HI/LO Annunciator
		PZR PRESS HI Annunciator
		Checks position of Pressurizer PORV's and places PCV-444B contro switch to CLOSE.
. <u>.</u>		Chute Value MVG 2000B Block Value for PCV-444B
		Compare Control Channel Indications to Protection Channel PI-455,
		456, and 457. This may have been done in Step 1.
	<u> </u>	Close the Pressurizer Spray Valves PCV-444C and PCV-444D.
	<u> </u>	Control the PZR PRESS Master Control in Manual.
	/	Operate Pressurizer Heaters and Spray Valves in Manual to control Repressure between 2220 PSIG and 2250 PSIG.
		Verify PI-445, CNTRL CHAN PRESS PSIG, Indication is Normal.
		Ensure Rod CNTRL BANK SEL Switch is in AUTO.
		Maintain RCS Pressure between 2220 PSIG and 2250 PSIG.
	- <u></u>	

Op-Test Event D	t No.: <u>99-1</u> Description: <u>'C</u>	Scenario No.: 1 Event No.: 3 Page 1 of 1 Steamline Flow Transmitter FT-494 Fails Low
Time	Position	Applicants Actions or Behavior
1400	BOP	Operator recognizes indications for failed FT-494
-		FI-494 indicates LOW
		SG C FWF > STF Mismatch Annunciator
		Takes Manual Control of FCV-498, 'C' Feed Control Valve.
		Operator adjusts FCV-498 so Feedflow > Steamflow on FI-495.
		Operator selects operable Steam Flow Channel FY495A.
		Operator selects matching Feed Flow Channel FY496A.
		Operator controls FCV-498 to restore 'C' Steam Generator level to ≈61%.
		Operator verifies Feedwater Speed Control is operating properly.
		Operator verifies all Steam Generator water levels are normal.
		Operator places FCV-498 Control in AUTO.

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Event D	Description: Lo	Dess of Operating Component Cooling Water Train
Time	Position	Applicants Actions or Behavior
154	BOP	Operator recognizes indications for a trip of 'B' CCW Pump
<u></u>	<u> </u>	CCP B/C Trip Fail Annunciator
		'B' CCW Pump Amps reading 0
		CCW Loop B PP DISCH PRESS LO Annunciator
<u></u>		Within one minute the operator should
		Start 'C' CCW Pump on 'A' Train
	- 7	Start 'A' Charging Pump
		Stop 'B' Charging Pump
		isoluted lettown?
		Operator should establish 'A' CCW Train and the Active Train
		• Start MVB-9503A, CC to RHR HX A, stroking in the
		Closed direction
		• when flow on FI-7054 is between 5000 GI W and 4000 GPM rapidly
		Open_MVB-9687A/9525A
		- Open MVB-9524A/9526A
		- Close MVB-9524B/9526B
		- Close MVB-9687B/9525B
		- Open MVB-9503B
. <u></u>	· · · · · · · · · · · · · · · · · · ·	Have Auxiliary Building operator verify sample flow to
		RML2A is greater than one GPM
		Ensure the following Valves have not closed on High Flow
		- MVG-9625
<u> </u>		– MVG-9626
		– MVG-9583



**Operator Actions** 

Form ES-D-2

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Op-Test No.:       99-1       Scenario No.:       1       Event No.:       4       Page       2       of       2         Event Description:       Loss of Operating Component Cooling Water Train			
Time	Position	Applicants Actions or Behavior	
		<ul> <li>Ensure 'B' CCW Pump Switch is in NORMAL-AFTER- STOP or PTL</li> </ul>	
		• If 'B' Charging Pump Switch is not placed in PTL, the pump will restart on a Safety Injection signal and must be secured.	
		<ul> <li>Operator may notify CRS that the LCO for two trains of CCW is not met.</li> </ul>	
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**Operator Actions** 

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Time	Position	Applicants Actions or Behavior
	RO	<ul> <li>Operator verifies conditions are met to restore Letdown Demin Flow</li> <li>Annunciator XCP-613 (1-2), DEMIN FLO DIVERT TEM HI, clear</li> </ul>
		Letdown temperature on TI-143 less than 135°F
		Operator places TCV-143, LTDN TO VCT OR DEMIN, in DEMIN/AUTO.
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**Operator Actions** 

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Op-Test Event D	No.: <u>99-1</u> escription: <u>Re</u>	Scenario No.: <u>1</u> Event No.: <u>6</u> Page <u>1</u> of <u>1</u> eactor Coolant Pump 'A' Number One Seal Failure
Time	Position	Applicants Actions or Behavior
1529	RO	Operator recognizes indications of abnormal leakoff from 'A' RCP #1 Seal • RCP A #1 SL LKOFF FLO HI/LO Annunciator
		Operator breaks out ARP XCP-617 (2-1) and monitors Seal Leakoff Flow on FR-154B.
		Operator ensures Seal Injection Flow to 'A' RCP is greater than 8 GPM on FI-130A.
		Operator ensures CCW Flow to 'A' RCP Thermal Barrier is between 35 GPM and 60 GPM on FM-7138.
		Operator monitors lower Seal Water Bearing temperature on T0417A.
		Operator monitors #1 Seal Leakoff temperature on T0181A.
		Operator determines that #1 Seal Leakoff Flow is greater than 6 GPM by monitoring FR-154A, RCP SL LKOFF HI RANGE.
		Commence plant power reduction to allow securing 'A' RCP within 8 hours.
		After the subsequent Safety Injection, the operator should secure 'A' RCP.
		Within three to five minutes after 'A' RCP is secured, close RCP 'A' Seal Leakoff PVT-8141A.



Op-Test Event D	Op-Test No.:       99-1       Scenario No.:       1       Event No.:       7       Page       1       of       1         Event Description:       Power Reduction to < 38% @ 3%/Min.       3%/Min.       1       1       1		
Time	Position	Applicants Actions or Behavior	
	SRO	CRS directs power reduction at 3%/min.	
	BOP	Reduces Turbine Load	
		Deenergizes LOAD LMT circuit	
		Energizes DEC LOAD RATE circuit	
···		<ul> <li>Selects 3%/min. on LOAD RATE LMT - %</li> </ul>	
		<ul> <li>Depress DECREASE pushbutton to reduce LOAD SET to value directed by CRS</li> </ul>	
	RO	Monitors control rods to ensure $T_{AVE}$ is decreasing with automatic inward rod motion.	
	RO	Opens MVG-8104 as necessary to minimize $T_{AVE} - T_{REF}$ mismatch.	
	ВОР	Secure one MFP per SOP-210 when directed by CRS	
		Open MFP Turbine Drain Valve MOV-1-5	
	-	Place MFP recirculation in Manual	
		<ul> <li>Decrease MFP speed controller output to 0</li> <li>Trip the MFP using the FWP PP TRIP/RESET switch at the MCB</li> </ul>	
- <u></u>		Dispatches operator to verify HP & LP Stop Valves have closed	
		• Ensures MFP turbine is on turning gear when speed is 0.	
	BOP	Secures one MFBP when directed by CRS.	

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Op-Test Event D	Op-Test No.:       99-1       Scenario No.:       1       Event No.:       8       Page       1       of       3         Event Description:       RCP Seal LOCA       'B' Train ESFLS Failure, 'A' Charging Pump Broken Gear Box Bank 1         Steam Dump Fails Open				
Time	Position	Applicants Actions or Behavior			
		Recognizes increase in 'A' RCP #1 Seal Failure/Seal LOCA			
1539		BCP Seal Bearing temperature increasing			
[		P7R level decreasing			
		Charging flow increasing			
	RO/BOP	Trips the reactor when directed by CRS or when SOP-101 RCP trip criteria are met.			
	20/202	Auto			
1840	RO/BOP .	Manually SI's when directed by CKS of after automatic SI.			
	<u> </u>	Secure (A) BCB after the reaster trip			
	KO	Secures A KCP alter the reactor up.			
		Performs Immediate Actions of EOP-1.0			
<b> </b> ≚		Verifies reactor trip			
	·				
	BOP	Performs Immediate Actions of EOP-1.0			
	•	Verifies turbine trip			
	ļ	Verifies ESF buses energized			
	вор	Recognizes failure of 'B' Train ESFLS to sequence and informs RO/CRS			
1541	RO	Recognizes 'A' Charging Pump low amps and informs CRS. Calls AB operator to investigate.			
	$\frown$				
	RO/	Closes PVT-8141A, 3-5 minutes after securing 'A' RCP. pohe			
	RO	Directs TB operator to rack up 'C' Charging Pump on 'A' Train and rack down 'A' Charging Pump.			

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Op-Test Event D	Op-Test No.:       99-1       Scenario No.:       1       Event No.:       8       Page       2       of       3         Event Description:       RCP Seal LOCA       'B' Train ESFLS Failure, 'A' Charging Pump Broken Gear Box Bank 1         Steam Dump Fails Open				
Time	/Position	Applicants Actions or Behavior			
Record	ROBOP	Crew should NOT secure 'B' & 'C' RCPs when RCS pressure decreases < 1400 psig until SI flow is established from 'C' Charging Pump.			
┣━━━━	RO	During initial check after Immediate Actions:			
		Recognizes 'B' RHR failed to start and manually starts it			
		Recognizes one 'B' Train RBCU failed to start and manually     starts it			
		• Recognizes 'B' SWBP did not start and manually starts it.			
	ВОР	Performs Attachment 3 of EOP-1.0 to verify proper operation of all ESF equipment (If not already performed by the NROATC).			
		<ul> <li>Recognizes 'B' RHR failed to start and manually starts it.</li> </ul>			
		<ul> <li>Recognizes one 'B' Train RBCU did not start and manually starts it</li> </ul>			
		• Recognizes 'B' SWBP did not start and manually starts it.			
	BOP/RO	Recognizes failure of one Bank 1 Steam Dump and attempts to manually close with the steam dump controller			
	BOP/RO	Dispatches an operator to locally close or isolate the failed open steam dump.			
	SRO	Transitions to EOP-2.0, Loss of Reactor on Secondary Coolant.			
	RO	Resets SI, Phase A Isolation, Phase B Isolation.			
	/				
	BOP	Resets ESF Loading Sequencers.			



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Op-Test	No.: <u>99-1</u>	Scenario No.: 1 Event No.: 8 Page 3 of 3			
Event D	Event Description: RCP Seal LUCA				
	B' Train ESFLS Failure, 'A' Charging Pump Broken Gear Box Bank I				
	50	eam Dump Fails Open			
Time	Position	Applicants Actions or Behavior			
	RO	Establishes Instrument Air to RB			
		Opens PVA-2659			
		Opens PVT-2660			
		Directs TB AO to reset 'A' IA Compressor			
	RO	Secures RHR Pumps when directed by CRS.			
	SRO	Transitions to EOP-2.1, Post-LOCA Cooldown and Depressurization.			
	BOP	Initiates RCS Cooldown			
	BOP	<ul> <li>Places both STM DUMP INTERLOCK switches to BYP INTLK</li> </ul>			
	RO	Places both STMLN SI TRAIN switches to BLOCK			
	BOP	Places Steam Dumps in STM PRESS mode			
	BOP	<ul> <li>Adjusts Steam Dump controller to establish cooldown rate &lt; 100°F/hr.</li> </ul>			
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