

2/27/98, 1997

Mr. Howard Bundy, Chief Examiner
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

To: Mr. Howard Bundy

Subject: South Texas Project Initial License Examination Scheduled for June 1, 1998

This letter is accompanying the Draft Examination Materials for the South Texas Project Senior Reactor Upgrade Examination scheduled for June 01, 1998.

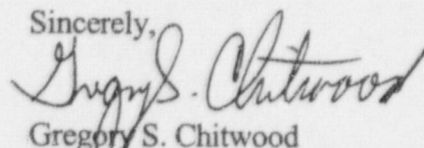
Two copies of all the examination materials are provided. One copy is for the public document room and the other copy is for your review purposes. The review copy also includes the necessary reference materials to facilitate your exam review.

Additionally the updated examination outline materials necessary to respond to previous outline comments are included.

None of these materials are to go to the public records until after the examination has been completed.

Please call me at (512)972-7241 or at gschitwood@stpegs.com if you have any questions.

Sincerely,



Gregory S. Chitwood
Examination Lead
South Texas Project
Nuclear Training Department

NRC EXAM SCHEDULE - SCUTH TEXAS UPGRADE EXAMS, 6/1/98

DAY/EVENTS	TIME	CANDIDATES	EVALUATORS	VALIDATED TIMES
MONDAY 6/1 Briefing Badging Plant Tour	N/A	N/A	N/A	N/A
TUESDAY 6/2 Simulator JPMS (2) Admin JPMS (3)	0700 - 1000	Mike Schaefer ----- Kelly Teague	Howard Bundy Evaluator 2	JPM 1 - 55 min*** JPM 2 - 50 min***
	1000 - 1300	Pete Lara ----- Lu DeLaGarza	Howard Bundy Evaluator 2	JPM A1 - 15 min JPM A2 - 15 min JPM A3 - 10 min
	1400 - 1700	David Klaus ----- Bill Morris	Howard Bundy Evaluator 2	Total - 2hr 25min
WEDNESDAY 6/3 In-Plant JPMS (3) Admin JPMS (2)	0700 - 1000	Mike Schaefer (Unit 1) ----- Kelly Teague (Unit 2)	Howard Bundy Evaluator 2	JPM 4* - 40 min*** JPM 3* - 45 min***
	1000 - 1300	Pete Lara (Unit 1) ----- Lu DeLaGarza (Unit 2)	Howard Bundy Evaluator 2	JPM 5* - 45 min*** JPM A4 - 10 min JPM A5 - 10 min
	1400 - 1700	David Klaus (Unit 1) ----- Bill Morris (Unit 2)	Howard Bundy Evaluator 2	Total - 2hr 30min
THURSDAY 6/4 Dynamic Scenarios Exit Meeting @1800	0700 - 1230	Mike Schaefer ----- Kelly Teague ----- Pete Lara	Howard Bundy Evaluator 2 Howard Bundy	Scen 1 - 1hr 50min** Scen 2 - 1hr 50min** Scen 3 - 1hr 50min**
	1230 - 1800	Lu DeLaGarza ----- David Klaus ----- Bill Morris	Evaluator 2 Howard Bundy Evaluator 2	Total - 5hr 30min

Notes:

* In-plant JPMS to be performed in the order listed. To avoid overlap while performing In-plant JPMS one candidate will perform JPMS in Unit one and the other in Unit 2.

** Each simulator time includes 15 minutes turnover time, 10 minutes machine setup time, and approximately 10 minutes conservatism.

***Each system related JPM time includes 30 minutes for associated questions

**South Texas Upgrade Exam 6/1/98
Outline Comments and Resolutions**

Issued 12/30/97

CHIEF EXAMINER OUTLINE COMMENTS - SOUTH TEXAS 6/1/98**WRITTEN**

- How does KA 000076AK3.05 relate to 10CFR55.43(b)(6)?
- How do KAs 000055EK3.02, 000056AK3.02, and 000009EK3.21 relate to 10CFR55.43(b)(2)? They appear to involve EOPs, not Technical Specifications.

ADMINISTRATIVE TOPIC OUTLINE

- Replace JPM A4 for the following reasons: 1) The SRO can not authorize the release; therefore this JPM does not have a high enough importance rating. 2) Because it was used on the last exam, it would not be unexpected for the applicants to prepare for this task.

WALKTHROUGH OUTLINE

- Which one of the Subcategory B.1 tasks involves an engineered safety feature? At least one of these tasks must relate to an ESF and should be so designated on the outline.
- For JPM 4, Question "a," avoid Technical Specifications questions which do not test system knowledge.
- As described, it appears that JPM 5 applies to Safety Function 1. This would result in JPMs 4 and 5 applying to the same safety function. Each task must apply to a unique safety function. Question "a" is not appropriate for a systems task. For Question "b" avoid Technical Specifications questions which do not test system knowledge.

SCENARIOS**GENERAL**

- Complete Forms ES-301-5 and ES-301-6 for applicants only in SRO position. An examiner will not be assigned to specific applicants in the RO/BOP positions. However, where there are actions for the RO/BOP, they should be covered in detail on Form ES-D-2 to assist in performing a top level evaluation.
- We recommend validation of timing for specific malfunctions to assist in estimating an overall time line for each scenario.
- It will be necessary to develop a backup scenario.

South Texas Project Outline Changes and Comment Resolutions Summary

Written

- K/A 00076AK3.05 10CFR55.43(b) designator changed from (6) to (2).
- The 10CFR55.43 designators for K/A 000055EK3.02, 000056AK3.02, and 000009EK3.21 changed from (2) to (5).
- Changed K/A W/E12 EK2.2 changed to EK3.1. Also added a 10CFR55.43(b) designator of (6) for EK3.1.

Administrative Topic Outline

- JPM A4 - In accordance with procedure PSP07-WL-0005, Liquid Waste Batch Tank Release step 5.2.53 the Shift Supervisor does approve liquid radwaste releases. This is also a task performed by the Senior Reactor Operator in accordance with our current task list. It was planned to revise the JPM to incorporate errors of a different nature than those on the last exam however, based on the second comment the JPM was removed from the outline. This JPM was replaced with a new JPM titled "Determine Unit Vent Radiation Monitor Operability Requirements".

Walkthrough Outline

- JPM 3 "Place a Class 1E 125 VDC Battery Charger in Service" and JPM 4 "Restore Power to an Accumulator Isolation Valve" apply to ESF Systems. While not required as a type code in accordance with form ES-301-2 an ESF type code has been added to the Walkthrough Test Outline. JPM 3 and JPM 4 identified as ESF System related on the outline.
- JPM 4 was replaced, thus new question K/As were required. The replacement K/As do not involve Technical Specifications.
- To ensure Safety Functions are not repeated JPM 4 was replaced with a JPM titled "Restore Power to Accumulator Isolation Valves" which is an ECCS System and applies to Safety Function II. Feedback was received after the outline was initially approved indicating that there is no overlap allowed from previous examinations in the area of operating JPMs. Based on this feedback, JPM 5 replaced with a new JPM titled "Add Chemicals to the Reactor Coolant System. This JPM falls under safety function I as did the previous JPM. JPM 5 question "a" and "b" K/As revised to reflect system related K/As.

Scenarios

- Form ES-301-6 revised to reflect event numbers only for those scenarios in which the candidate is in the SRO position. A revision of form ES-301-5 was not required. The information on form ES-301-5 is applicable as submitted since the event numbers still apply when considering the candidate only in the SRO position. When submitted as part of the draft examination materials the ES-D-2 forms will reflect the actions for all control room positions.
- A table describing the timing for specific malfunctions has been added to the simulator scenario documents based on operator response times recorded during scenario validations.
- A backup scenario has been developed as requested.

Changes made based on utility identified items identified while developing examination materials.

Written Examination Outline

ES-401-3

Revised Tier 1/Group 1 K2 and K3 category totals to reflect actual totals.

Changed Tier 2/Group 1, 004 Chemical and Volume Control System second entry K/A from "K/O oper implications of O2 control and CVCS" to "K/O effects of CVCS malfunctions on RCPs". Also changed from category K5 to K3 and updated respective column totals for columns K3 and K5 and updated the cover page.

Changed Tier 1/Group 1, 003 Dropped Control Rod K/A from A201 to A105. Updated the totals for this column on this page and on the cover page.

Made the following corrections to the 10 CFR 55.43 designations:

Tier 1/Group 1

Added reference (5) to 00024
Changed reference (6) to reference (5) on 00040
Added reference (5) to 00062
Added reference (5) to 00068

Tier 1/Group 2

Added reference (5) to 00061

Tier 2/Group 1

Added reference (5) to 001 K5.04
Added reference (4) to 068 Generic

Tier 2/Group 2

Added reference (5) to 033
Added reference (7) to 034

Written Examination Outline (continued)

ES-401-5

K/A# 2.1.33 topic verbiage revised to correct grammatical error.

Made the following corrections to the 10 CFR 55.43 designations:

Conduct of Ops - deleted 10 CFR 55.43 designation on 2.1.13

Radiation Control - deleted 10CFR 55.43 designation on 2.3.9

Emergency Procedures and E-Plan - added 10 CFR 55.43 reference (5) to 2.4.18 and reference (1) to 2.4.26

The following materials to support the resolutions described above are attached:

- Form ES-401-3, Revision 1 (all pages)
- Form ES-401-5, Revision 1
- Form ES-301-1, Revision 1
- Form ES-301-2, Revision 1
- Form ES-301-6, Revision 1
- Backup Scenario Outline, Revision 0
- Pages 17 and 37 of procedure OPSP07-WL-0005, Liquid Waste Tank Batch Effluent Release

ES-401

PWR SRO Examination Outline Form

ES-401-3

Facility: South Texas Project Date of Exam: 6/1/98 Exam Level: SRO													
Tier	Group	K/A Category Points											Point Total
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	
1. Emergency & Abnormal Plant Evolutions	1	3	2	10				4	4			1	24
	2	1	3	3				2	6			1	16
	3	1	0	2				0	0			0	3
	Tier Totals	5	5	15				5	11			2	43
2. Plant Systems	1	2	1	2	1	3	1	4	2	1	1	1	19
	2	1	0	1	4	2	1	1	3	0	3	1	17
	3	2	0	1	0	0	0	0	1	0	0	0	4
	Tier Totals	5	1	3	5	6	2	5	6	1	4	2	40
3. Generic Knowledge and Abilities					Cat 1		Cat 2		Cat 3		Cat 4		17
					5		4		3		5		
<p>Note: ● Attempt to distribute topics among all K/A categories; select at least one topic from every K/A category within each tier.</p> <p>● Actual point totals must match those specified in the table.</p> <p>● Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.</p> <p>● Systems/evolutions within each group are identified on the associated outline.</p> <p>● The shaded areas are not applicable to the category/tier.</p>													

ES-401		PWR SRO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1							Form ES-401-3	
E/APE # / Name / Safety Function	10CFR 55.43 (b)	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Pts
000001 Continuous Rod Withdrawal / I		A22						K/O oper implications of continuous rod withdrawal and Delta Flux	3.6	
000003 Dropped Control Rod / I					A05			Monitor the following as they apply to dropped control rod: Rx power - Turbine power	4.1	
000005 Inoperable/Stuck Control Rod / I	(2)			A04				K/O reason for Tech Spec limits for inoperable rods	4.1	
000005 Inoperable/Stuck Control Rod / I				A06				K/O reason for actions contained in EOP for inoperable/stuck control rod	4.2	
000011 Large Break LOCA / III				E12				K/O reason for actions contained in EOP for emergency LOCA (large break)	4.6	
000011 Large Break LOCA / III	(5)				E11			Operate/monitor the long term cooling of the core following a large break LOCA	4.2	
W/E04 LOCA Outside Containment / III			E1					K/O interrelationships between LOCA outside containment and components, functions of control and safety systems, instrumentation, signals, interlocks, auto/manual features	3.9	
W/E02 SI Termination / III		E2						K/O oper implications of normal, abnormal and emerg procedures associated w/SI termination	3.9	
000015/17 RCP Malfunctions / IV						A10		Determine/interpret when to secure RCPs on loss of cooling or seal injection	3.7	
BW/E09; CE/A13; W/E09&[E10] Natural Circ. / IV					E3			Operate/monitor for desired results during natural circ with steam void in vessel	3.7	
000024 Emergency Boration / I	(5)			A02				K/O the reasons for actions contained in EOP for emergency boration	4.4	
000026 Loss of Component Cooling Water / VIII				A03				K/O oper implications of guidance actions contained in EOP for loss of CCW	4.2	
000029 Anticipated Transient w/o Scram / I				E12				K/O the reasons for actions contained in EOP for ATWS	4.7	
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / IV	(5)			E1				K/O the reasons for facility operating characteristics including reactivity changes and operating limitations as applied to Uncontrolled Depressurization at S/G.	3.9	
CE/A11; W/E08 RCS Overcooling - PTS / IV				E2				K/O the reasons for normal, abnormal and emerg procedures associated with PTS	4.0	
000051 Loss of Condenser Vacuum / IV						A02		Determine/interpret conditions requiring reactor/turbine trip on loss of condenser vacuum	4.1	
000055 Station Blackout / VI	(5)			E02				K/O the reasons for actions contained in EOP for loss of offsite and onsite power	4.6	
000057 Loss of Vital AC Elec. Inst. Bus / VI					A06			Operate/monitor man control when auto control is lost after loss of vital AC instrument bus	3.5	
000062 Loss of Nuclear Service Water / IV	(5)					A02		Determine/interpret the cause of possible CCW loss	3.6	
000067 Plant Fire On-site / IX		A01						K/O oper implication of fire classification as applied to plant fire on site	3.9	
000067 Plant Fire On-site / IX						A16		Determine/interpret vital equip and control systems to be maintained/oper during a fire	4.0	
000068 (BW/A06) Control Room Evac. / VIII	(5)						X	2.4.40: K/O SRO's responsibilities in emergency plan implementation	4.0	
000074 (W/E06&E07) Inad. Core Cooling / IV			E04					K/O interrelationships between HHSI pumps and inadequate core cooling	4.1	
000076 High Reactor Coolant Activity / IX	(2)			A05				K/O the reasons for corrective actions as a result of high fission product activity in RCS	3.6	
K/A Category Totals:		3 (2A) (1E)	2 (2E)	10 (5A) (5E)	4 (2A) (2E)	4 (4A)	1	Group Point Total:		24

ES-401		PWR SRO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 2							Form ES-401-3	
E/APE # / Name / Safety Function	10CFR 55.43 (b)	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Pts
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / I	(5)					E02		Determine/interpret the proper actions to be taken if the automatic safety functions have not taken place	4.6	
000008 Pressurizer Vapor Space Accident / III						A12		Determine/interpret PZR level indicators as they apply to a PZR vapor space accident	3.7	
000009 Small Break LOCA / III	(5)			E21				K/O the reasons for the actions contained in EOP for small break LOCA/leak	4.5	
BW/E08; W/E03 LOCA Cooldown - Depress. / IV		E2						K/O oper implications of normal, abnormal, emergency procedures associated w/LOCA cooldown and depressurization	4.1	
W/E11 Loss of Emergency Coolant Recirc. / IV			E1					K/O interrelations between Loss of emerg coolant recirc and comp, functions of control and safety systems, instru, signals, interlocks, and auto/manual features	3.9	
000022 Loss of Reactor Coolant Makeup / II						A02		Determine/interpret charging pump problems as they apply to loss of reactor coolant makeup	3.7	
000025 Loss of RHR System / IV					AC9			Operate/monitor LHSI pump switches, ammeter, disch press and flow indications	3.1	
000032 Loss of Source Range NI / VII						A04		Determine/interpret satisfactory source-range/intermediate range overlap as it applies to loss of source range nuclear instrumentation	3.5	
000038 Steam Generator Tube Rupture / III						E15		Determine/interpret the press at which to maintain RCS during S/G C/D following a SGTR	4.4	
000054 (CE/E06) Loss of Main Feedwater / IV						A04		Determine/interpret proper oper of AFW pumps and valves following a loss of MFW	4.3	
BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / IV			E2					K/O interrelations between Loss of secondary heat sink and primary coolant, emerg coolant, decay heat removal systems, and the proper oper of these systems	4.2	
000058 Loss of DC Power / VI				A01				K/O the reasons for use of DC control power by D/Gs as it applies to a loss of DC power	3.7	
000060 Accidental Gaseous Radwaste Rel. / IX			A02					K/O of interrelations between Aux Bldg ventilation system and accidental gaseous radwaste release	3.1	
000061 ARM System Alarms / VII	(5)			A02				K/O the reasons for guidance contained in alarm response for ARM system	3.6	
W/E16 High Containment Radiation / IX					E3			Operate/monitor desired results during abnormal/emerg situations for high containment radiation	3.3	
000065 Loss of Instrument Air / VIII							X	2.1.23: Perform specific system and integrated plant procedures during all modes of plant operation	4.0	
K/A Category Point Totals:		1 (1E)	3 (1A) (2E)	3 (2A) (1E)	2 (1A) (1E)	6 (4A) (2E)	1	Group Point Total:		16

Revision 1

ES-401		PWR SHO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 3										Form ES-401-3
E/APE # / Name / Safety Function	10CFR 55.43 (b)	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Pts		
000028 Pressurizer Level Malfunction / II												
000036 (RW/AGB) Fuel Handling Accident / VIII	(7)			A03				K/O the reasons for guidance contained in EOP for fuel handling incident	4.1			
000056 Loss of Off-site Power / VI	(5)			A02				K/O the reasons for actions contained in EOP for loss of offsite power	4.7			
BW/E13&E14 EOP Rules and Enclosures												
BW/A05 Emergency Diesel Actuation / VI												
BW/A07 Flooding / VIII												
CE/A16 Excess HCS Leakage / II												
W/E13 Steam Generator Over-pressure / IV		E2						K/O oper implications of normal, abnormal and emerg procedures as they apply to S/G overpressure	3.3			
W/E15 Core Flooding / V												
K/A Category Point Totals:		1 (1E)	0	2 (2A)	0	0	0	Group Point Total:		3		

Revision 1

ES-401		PWR SRO Examination Outline Plant Systems - Tier 2/Group 1											Form ES-401-3		
System # / Name	10CER 55.43 (b)	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Pts
001 Control Rod Drive	(5)					04		02					K/O oper implication of rod ins limits and CRDS	4.7	
001 Control Rod Drive													Predict/monitor changes in Tref associated with operating CRDS	3.4	
003 Reactor Coolant Pump	(5)						04						K/O loss/malf of cont isol vlv on RCP operation	3.1	
003 Reactor Coolant Pump									01				Predict/mitigate RCP seal leak-off problems	3.9	
004 Chemical and Volume Control		06											K/O physical connections, cause/effect between CVCS and makeup sys to VCT	3.1	
004 Chemical and Volume Control				04						02			K/O effects of CVCS malfunctions on RCPs	3.3	
013 Engineered Safety Features Actuation													Monitor auto oper of ESFAS actuated equipment	4.2	
014 Rod Position Indicator								02					Predict/monitor rod position indications	3.6	
015 Nuclear Instrumentation								05					Predict/monitor axial imbalance to prevent exceeding design limits	3.9	
017 In-core Temperature Monitor						03							K/O oper implications of superheating and CET system	4.1	
022 Containment Cooling				01							01		K/O effect a loss of CCS has on cont equip	3.2*	
026 Containment Spray													Operate/monitor CSS controls	4.3	
056 Condensate						03							K/O oper implication water hammer/prevention	2.6*	
059 Main Feedwater		04											K/O relationship between MFW and SGWLCS	3.4	
061 Auxiliary/Emergency Feedwater									08				Predict/mitigate expected flow rates of AFW valve combinations	2.9*	
063 DC Electrical Distribution			01										K/O power supplies to major DC loads	3.1*	
068 Liquid Radwaste	(4)											X	2.1.32: Explain/apply sys limits/precautions	3.8	
071 Waste Gas Disposal					04								K/O design/interlocks for isol of waste gas tanks	3.4	
072 Area Radiation Monitoring								01					Predict/monitor radiation levels to prevent exceeding design limits	3.6	
K/A Category Point Totals:															19
Group Point Total:															19

Revision 1

PWR SRO Examination Outline Plant Systems - Tier 2/Group 2													Form ES-401-3			
ES-401	System # / Name	10CFR 55.43 (b)	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Pts
	002 Reactor Coolant										03			Operate/monitor RCS to recognize/correct saturated conditions	4.4	
	006 Emergency Core Cooling					05								K/O design/interlocks for HHSI/LHSI autostart	4.4	
	010 Pressurizer Pressure Control											02		Operate/monitor pressurizer heaters	3.4	
	011 Pressurizer Level Control						03							K/O relationship between PZR level and heater controls	3.3	
	012 Reactor Protection					02								K/O design/interlocks/basis for auto Rx trip for each RPS function	4.3	
	028 Hydrogen Recombiner and Purge Control	(5)					03							K/O oper implications of sources of H2 in RCB	3.6*	
	029 Containment Purge		01											K/O connections/cause-effects relationships between Cont Purge and gas radiation release monitors	3.7	
	033 Spent Fuel Pool Cooling	(5)							01					Predict/monitor SFP water level to prevent exceeding design limits	3.3	
	034 Fuel Handling Equipment	(7)				02								K/O design/interlocks for fuel movement	3.3	
	035 Steam Generator										06			Operate/monitor S/G isol on steam leak or tube rupture	4.6	
	039 Main and Reheat Steam						08							K/O oper implications of effect of steam removal on reactivity	3.5	
	062 AC Electrical Distribution					03								K/O design/interlocks between auto bus transfer and breakers	3.1	
	064 Emergency Diesel Generator								02					Predict/mitigate malof load, VARS, air press, speed droop, freq, volt, fuel, temperatures	2.9	
	073 Process Radiation Monitoring			01										K/O effect of loss of PRM system has on radioactive effluent releases	4.2	
	075 Circulating Water								02					Predict/mitigate loss of circulating water pumps	2.7	
	086 Fire Protection												X	2.4.25: K/O fire protection procedures	3.4	
	103 Containment	(4)							05					Predict/mitigate emergency containment entry	3.9	
	K/A Category Point Totals:													17		
	Group Point Total:													17		

Revision 1

ES 401	PWR SRO Examination Outline Plant Systems - Tier 2/Group 3													Form ES 401-3		
System # / Name	10CFR 55.43 (b)	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Pts	
005 Residual Heat Removal		06											K/O connections/cause-effect relationships between RHRS and ECCS	3.6		
007 Pressurizer Relief/Quench Tank				01									K/O effect of loss of PRTS on containment	3.6		
008 Component Cooling Water	(5)								01				Predict/mitigate loss of CCW pump	3.6		
041 Steam Dump/Turbine Bypass Control																
045 Main Turbine Generator																
076 Service Water		01											K/O connections/cause-effect relationships between SWS and CCW system	3.3		
078 Instrument Air																
K/A Category Point Totals:		2	0	1	0	0	0	0	1	0	0	0		Group Point Total:		4

ES-401

Generic Knowledge and Abilities Outline (Tier 3)

Form ES-401-5

Facility:		South Texas Project		Date of Exam:	6/1/98	Exam Level:	SRO
Category	K/A #	10CFR 55.43 (b)	Topic	Imp.	Pts		
Conduct of Operations	2.1.10	(1)	K/O conditions/limitations in the facility license	3.9			
	2.1.11	(2)	K/O <1 hour T.S. action statements	3.8			
	2.1.13		K/O facility req. for controlling vital/controlled access	2.9			
	2.1.29		K/O how to conduct/verify valve lineups	3.3			
	2.1.33	(2)	Ability to recognize entry level conditions to T.S.	4.0			
	Total						5
Equipment Control	2.2.7	(3)	K/O process for conducting test/experiment not described in FSAR	3.2			
	2.2.13		K/O tagging and clearance procedures	3.8			
	2.2.22	(2)	K/O LCOs and safety limits	4.1			
	2.2.31	(7)	K/O SRO fuel handling responsibilities	3.8			
	Total						4
Radiation Control	2.3.1	(4)	K/O 10CFR20 and facility radiation control requirements	3.0			
	2.3.2	(4)	K/O facility ALARA program	2.9			
	2.3.9		K/O process for performing a containment purge	3.4			
	Total						3
Emergency Procedures and Plan	2.4.18	(5)	K/O specific bases for EOPs	3.6			
	2.4.21	(5)	K/O parameters/logics used to assess the status of safety functions	4.3			
	2.4.26	(1)	K/O facility protection req. including fire brigade and fire fighting equipment usage	3.3			
	2.4.40	(5)	K/O SRO's responsibility in emergency plan implementation	4.0			
	2.4.44	(5)	K/O emergency plan protective action recommendations	4.0			
	Total						5
Tier 3 Target Point Total (SRO)						17	

Facility: South Texas Project		Date of Examination: 06/01/98
Examination Level: SRO		Operating Test Number: 1
Administrative Topic/Subject Description		Describe method of evaluation: ONE Administrative JPM
A.1	Conduct of Operations	K/A: 2.1.3[3.4] K/O Shift turnover practices JPM TITLE: Review Control Room Logs (JPM A1)
	Conduct of Operations	K/A: 2.1.33[4.0] Ability to recognize indications for system operating parameters which are entry level conditions for Tech Specs. JPM TITLE: Review ES Power Availability Surveillance Results (JPM A2)
A.2	Equipment Control	K/A: 2.2.13[3.8] K/O tagging and clearance procedures
		JPM TITLE: Review a Faulted Tagout (JPM A3)
A.3	Radiation Control	K/A: 2.3.11[3.2] Ability to Control Radiation Releases
		JPM TITLE: Determine Unit Vent Radiation Monitor Operability Requirements (JPM A4)
A.4	Emergency Plan	K/A: 2.4.44[4.0] K/O E-Plan protective action recommendations
		JPM TITLE: Determine Emergency Action Levels (JPM A5)

Rev 1

Facility: South Texas Project Exam Level: SRO(U)		Date of Examination: 06/01/98 Operating Test No.: 1	
System / JPM Title / Type Codes*	Safety Function	Planned Follow-up Questions: K/A/G - Importance - Description	
1. Residual Heat Removal. Shift RHR Trains. (S)(M)(A)(L)	IV	a. APE 025AA101 [3.7] Ability to monitor heatup rates during loss of RHR.	
		b. 004000A413 [2.9] Ability to monitor VCT level control.	
2. PZR Relief Tank. Feed and Bleed the Pressurizer Relief Tank. (S)(D)	V	a. 026000K408 [4.3] Knowledge of interlocks which provide auto swapover for recirc phase.	
		b. 028000A201 [3.6] Ability to monitor changes in parameters including H2 Recombiner power setting.	
3. Electrical, 125 VDC Class 1E. Place a Class 1E 125 VDC Battery Charger in Service. (P)(N)(E)	VI	a. 062000K405 [3.2] Knowledge of AC distribution system interlocks which provide for paralleling of AC sources.	
		b. 063000K302 [3.7] Knowledge of effects of a loss of DC on components using DC power.	
4. Emergency Core Cooling System Restore Power to Accumulator Isolation Valves. (P)(D)(A)(L)(E)	II	a. 006000K409 [4.2] Knowledge of ECCS interlocks which provide for valve positioning on SI signal.	
		b. 006000A113 [3.7] Ability to predict and monitor changes in accumulator parameters to prevent exceeding limits.	
5. Chemical Volume Control System. Add Chemicals to the RCS. (P)(N)(R)	I	a. 004000A208 [3.7] Ability to predict impacts of loss of heat tracing.	
		b. 004000A407 [3.7] Ability to monitor boration.	
* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (P)lant, (R)CA (E)SF			

Rev 1

South Texas Project Exam 6/01/98

Competencies	Applicant #U1/U4 SRO-U				Applicant #U2/U5 SRO-U				Applicant #U3/U6 SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4
Understand and Interpret Annunciators and Alarms	2					2					2	
Diagnose Events and Conditions	4					2					3	
Understand Plant and System Response	3					3					3	
Comply With and Use Procedures (1)	1					1					1	
Operate Control Boards (2)												
Communicate and Interact With the Crew	5					3					4	
Demonstrate Supervisory Ability (3)	4					5					4	
Comply With and Use Tech. Specs. (3)	2					2					2	

Notes:

- (1) Includes Technical Specification compliance for an RO.
- (2) Optional for an SRO-U.
- (3) Only applicable to SROs.

Rev 1

Instructions:

Circle the applicant's license type and enter the event numbers that test the competency for each scenario in the set.

Author: Gregory S. Chitwood 1/7/98

Chief Examiner: _____

Facility: South Texas Project

Scenario No.: Backup Scenario

Op-Test No.: N/A

Objectives: Provide a backup scenario to be used as necessary to evaluate performance in the event competency areas or event types are not adequately addressed during the performance of scheduled scenario sessions. The crew's ability to diagnose RCS leakage rates and take appropriate actions based on the leakrate will be evaluated. The crew's ability to monitor the operation of plant systems and take necessary corrective actions will be evaluated during a failure of an ECW pump to start and during a failure of Source Range NIs to energize.

Initial Conditions: 100% power, 8,000 MWD/MTU

Turnover: The Unit is at 100% power. Upon taking the shift the crew is to start Centrifugal Charging Pump 1B and Secure Centrifugal Charging Pump 1B and secure Centrifugal Charging Pump 1A to allow Engineering to take vibration measurements on Centrifugal Charging Pump 1B.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N	Shift Operating Centrifugal Charging Pumps.
2	2-18-1	I	Pressurizer Level Control fails high when CVCS parameters have stabilized after CCP swap.
3	4-1-2	C	CCW Pump 1B trips after the crew has addressed Tech Specs for the level control failure.
4	2-4-1	M	Small Break LOCA on the Rx Vessel Head Vent. Escalating to 210 gpm over a 7 minute period after CCW parameters have stabilized.
5	4-9-3	C	Train C ECW Pump fails to start on Safety Injection signal.
	1-35-2	C	Intermediate Range Nuclear Instrument Channel 36 is undercompensated.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor. All event types apply only to the SRO position.

Rev 0

Liquid Waste Tank Batch Effluent Release

- * 5.2.48 Divide the Monitor Background recorded in Step 5.2.46 by the Conversion Factor recorded in Step 5.2.47. Record the result in cpm on Release Data Sheet.

CAUTION

RM-11 keyboard response is slow. ENSURE correct values are entered. (SPR-0310)

- * 5.2.49 IF at any time all RM-11 printers are inoperable, write the appropriate "changed to" values in the remarks section of Release Data Sheet vice attaching printouts to the package.
 - * 5.2.50 Change the channel items, as necessary, to the values specified in Step 5.2.39 and the background value calculated in 5.2.48 using Addendum 2 for guidance as necessary. Alert and High Alarm Setpoints (items 9 and 10) are set to the same values in each channel. Obtain a printout of the channel-items and verify only the desired setpoint values were changed. Label the printout "changed to" and include it with the package. Record initials and date/time on Release Data Sheet. (SPR 92-0310)
 - * 5.2.51 Independently verify setpoints, conversion factor, and background values are correct. Independent Verification may be performed by reviewing the attached printout of the "changed to" Channel Items or Alarm Histories. Record initial and date/time on Release Data Sheet. (SPR 92-0191)
 - * 5.2.52 The CTS **SHALL** review and sign the Prerelease Permit. ENSURE Chemistry Division Manager permission is obtained prior to release of WMT/TDS Tank to the OC system if the CW system is **NOT** operating (in the affected unit). Record the date/time and initials on the Release Data Sheet.
 - * 5.2.53 Route the Package to the Shift Supervisor for approval of discharge and that RT-8038 status verified operable, or if RT-8038 verified inoperable that Steps 5.2.41.1 through 5.2.41.3 have been completed. The Shift Supervisor (upon approval) **SHALL** record the date/time and initials on the Release Data Sheet.
 - 5.2.54 Route the Release Package to Operations.
- 5.3 Operations **SHALL** perform the following.
- * 5.3.1 After receiving the release package, verify CW or OC flow meets or exceeds the flow rate recorded in Step 5.2.21 and record date/time and initials on Release Data Sheet.

South Texas Project 6/01/98 Exam
OPERATING TEST NO.: 1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1				
	Normal	1				
	Instrument	2				
	Component	2				
	Major	1				
As RO	Reactivity	1				
	Normal	0				
	Instrument	1				
	Component	1				
	Major	1				
SRO-I	Reactivity	0				
	Normal	1				
	Instrument	1				
	Component	1				
	Major	1				
As SRO	Reactivity	0				
	Normal	1				
	Instrument	1				
	Component	1				
	Major	1				
SRO-U	Reactivity	0				
	Normal	1	1	1	1	
	Instrument	1	2	2.5	2	
	Component	1	3, 4, 5	3, 6	3, 4, 6	
	Major	1	4	4	5	

Instructions: (1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.
(2) Reactivity manipulations must be significant as defined in Appendix D.

Rev 0

Author: Margy S. Chitwood 12/22/97
Chief Examiner: _____

South Texas Project Exam 6/01/98

Competencies	Applicant #U1/U4 SRO-U				Applicant #U2/U5 SRO-U				Applicant #U3/U6 SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4
Understand and Interpret Annunciators and Alarms	2					2					2	
Diagnose Events and Conditions	4					2					3	
Understand Plant and System Response	3					3					3	
Comply With and Use Procedures (1)	1					1					1	
Operate Control Boards (2)												
Communicate and Interact With the Crew	5					3					4	
Demonstrate Supervisory Ability (3)	4					5					4	
Comply With and Use Tech. Specs. (3)	2					2					2	
Notes:												
(1) Includes Technical Specification compliance for an RO.												
(2) Optional for an SRO-U.												
(3) Only applicable to SROs.												

Rev 1

Instructions:

Circle the applicant's license type and enter the event numbers that test the competency for each scenario in the set.

Author: Gregory S. Chitwood 1/7/98

Chief Examiner: _____

INITIAL LICENSE EXAM
OPERATING TEST 1
SCENARIO 1

JUNE 1, 1998

Revision 0

SCENARIO OUTLINE

Facility: South Texas Project **Scenario No.:** 1 **Op-Test No.:** 1

Session 1 Examiners: E1 evaluating Mike Schaefer Operators: SRO-Mike Schaefer
RO-Kelly Teague
BOP-Pete Lara

Session 2 Examiners: E2 evaluating Lu DeLaGarza Operators: SRO-Lu DeLaGarza
RO-David Klaus
BOP-Bill Morris

Objectives: Evaluate the Unit Supervisor's decision making ability during escalating steam generator tube leakage. The crew's ability to protect plant personnel and the public during a release of radioactive materials due to a ruptured and faulted steam generator will also be evaluated. Familiarity with the EOPs including the User's Guide will also be evaluated due to the procedural transition demands during a ruptured and faulted steam generator. This scenario is designed to evaluate the crew's ability to respond to a Steam Generator Tube Rupture with a containment bypass due to the safety leaking by since this event is the top ranking core damage sequence in accordance with the site specific Probabilistic Risk Assessment.

Initial Conditions: 25% power, 8,000 MWD/MTU

Turnover: The Unit is at 25% power, POP03-ZG-0005 step 7.11.8, starting up shortly after an unplanned trip, maintaining power until chemistry levels are acceptable for power increase. Start CCW Pump 1A and secure CCW Pump 1B to allow vibration checks to be performed. Essential Cooling Water Pump 1B should remain in service. Bank 1 Steam Dump Valve PV-7493 has been manually isolated due to excessive seat leakage.

Event No.	Malf. No. & (Value)	Event Type*	Event Description & Timing
1	N/A	N	Shift Operating CCW Pumps.
2	1-38-2 (True)	I	Power Range NI-42 fails low after CCW Pump 1A secured or after 11 minutes.
3	8-23-2 (True)	C	Condensate Pump #12 trips after I&C contacted to trip bistables based on NI failure or after 13 minutes.
4	5-3-2 (0 to .35) 7 min ramp then (.9)	M	Steam Generator B tube leakage escalating value to Safety Injection required leak rate after the Steam Generator Feed Pump Seal Water DP alarms clear or after 8 minutes. Design Basis Accident leakage rate immediately after the reactor is tripped.
5	5-4-2 (.05)	C	Safety on ruptured SG B leakage after the Rx is tripped.
6	Rose BMP001 CV-25 (1.0)	C	Charging line OCIV fails to close upon receipt of a Safety Injection signal. The scenario is terminated after the crew has commenced the RCS cooldown in EO30.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor. All event types apply only to the SRO position.

SCENARIO MISCELLANEOUS INFORMATION

SIMULATOR BOOTH NOTES:

SIMULATOR SETUP

1. Reset to IC #4 and go to run.
2. Trigger Lesson Plan #11 under Lesson Plan Group NRC2
3. Hang a caution tag on Bank 1 Steam Dump Valve PV-7493 and slightly rotate the indicating lights so that the lights deenergize to identifying that it has been manually isolated due to excessive seat leakage.
4. Ensure breaker flags reflect current breaker alignment on CP-10 and CP-3.

EXPECTED BOOTH OPERATIONS

1. Autograph file "/cae/agraph/data/jody/critscen1.agb.2" should load with lesson plan. At the conclusion of the scenario print out the critical parameter trends from the autograph file.
2. Locally close CV-MOV-25 when dispatched to close locally by deleting the valve opening malfunction "BM-XCV-0025".

EXPECTED BOOTH COMMUNICATIONS

1. When Reactor Engineering contacted, report that flux maps can be performed.
2. When asked to check Condensate Pump #12, report that no apparent signs of damage at the pump, however there is an overcurrent flag at the pump.
2. Seven minutes after the reactor is tripped, report to the Control Room that steam is issuing from the B Train IVC cubicle.

SCENARIO MISCELLANEOUS INFORMATION

SCENARIO TIME SUMMARY:

EVENT	VALIDATION TIME	FINAL TIME
Shift Operating CCW Pumps.	11 min	11 min
Power Range NI-42 Fails Low.	10 min (+3)	13 min
Condensate Pump #12 Trips.	6 min (+2)	8 min
Steam Generator B tube leakage escalating value to Safety Injection required leak rate. Design Basis Accident leakage rate immediately after the reactor is tripped. The safety on ruptured Steam Generator B leakage and the charging line OCIV fails to close included in this event time.	48 min	47 min
TOTAL TIME		1 hr 19 min

Notes: VALIDATION TIME reflects the actual event run time based on a "minimally adequate crew". The numbers in parenthesis indicate a time cushion that is added to the validation time, where appropriate, to determine the FINAL TIME. This time cushion is added to ensure the crew has an opportunity to reach the desired point in the event. Malfunctions will be placed in pending and triggered at the times listed in the FINAL TIME column or at the discretion of the lead examiner.

CRITICAL PARAMETERS:

The following parameters may be of value in evaluating crew performance and should be placed in an Autograph file for recall when the scenario is completed:

- Pressurizer Level, LT455
- Core Exit Thermocouple temperature
- AFW flow Train B
- SG B Narrow Range Level
- Wide Range RCS Pressure
- Reactor Power

OPERATOR ACTIONS TABLE NOTES:

1. Critical Tasks are indicated by "C" in the position column and indicated in bold type.
2. Actions required throughout the event are indicated as "(continuous)" in the position column.
3. Procedural entry points are indicated by shaded cells.

OPERATOR ACTIONS

Op-Test No.: 1 Scenario No.: 1 Event No.: 1			
Event Description: Shift Operating CCW Pumps. The primary operator will start CCW pump 1A and secure 1B.			
Time	Position	Applicant's Actions or Behavior	Notés
	SRO	Directs the RO to start CCW pump 1A and secure 1B per POP02-CC-0001, Component Cooling Water operating procedure.	
	SRO (continuous)	Maintains cognizance of CCW pump evolution while maintaining big picture of plant status.	
	RO	Ensures that the CCW system is prepared for CCW pump start. <ul style="list-style-type: none"> - Ensure CCW train A has been filled and vented - Ensure CCW rad monitor aligned to only one CCW train - Ensure CCW Pump 1A Supplementary Cooler is in auto - Ensure ECW pump 1A is running - Ensure all three CCW/ECW mode selector switches are in OFF - Dispatches an operator to locally verify CCW pump 1A ready for start 	
	RO	Announces the start of CCW Pump 1A over the plant paging system.	
	RO	Starts CCW Pump 1A.	
	RO	Ensures the CCW train A header isolation valves automatically open.	
	RO	Verifies CCW parameters after pump start. <ul style="list-style-type: none"> - Check header pressure > 80 psig - Check flow between 7,500 and 15,000 gpm 	
	RO	Ensures that the CCW system is aligned to support CCW pump stop. <ul style="list-style-type: none"> - RHR equipment cooling not required - Ensure CCW rad monitor aligned to operating CCW train - Ensure all three CCW/ECW mode selector switches are in OFF - Ensures flow and cooling requirements will be met when pump is secured 	

	RO	Secures CCW Pump 1B.	
	RO	Verifies CCW parameters after pump stop. -Check header pressure > 80 psig -Check flow between 7,500 and 15,000 gpm	
	RO	Places running CCW pumps mode selector switch in OFF or RUN and asks SRO if a non-running pump should be placed in STANDBY.	
	US	Directs the positioning of the non-running CCW pump's mode selector switch.	
	RO	Positions the non-running CCW pump's mode selector switch based on SRO direction.	
	RO	Secure CCW Pump 1B Supplementary Cooler	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 1 Event No.: 2			
Event Description: Power Range NI-42 Fails Low.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO	Acknowledges and reports annunciator 5M03-E2, PR HI VOLT FAIL and references annunciator response procedure POP09-AN-05M3.	
	RO/BOP	Accurately reports which power range channel has failed.	
	RO	Ensures immediate action of POP04-NI-0001, Nuclear Instrument Malfunction are completed by verifying the following: -Control rods are in manual - Low Power Feed Reg Valves not in service	
	SRO	Enters procedure 0POP04-NI-0001, and ensures the immediate actions of POP04-NI-0001, Nuclear Instrument Malfunction have been completed.	
	SRO (continuous)	Directs the actions of POP04-NI-0001, Nuclear Instrument Malfunction Addendum 3.	
	RO/BOP (continuous)	Maintains average coolant temperature at reference temperature $\pm 1^{\circ}\text{F}$ using manual control rod motion.	
	RO	Ensures BOP is aware of responsibility to monitor the plant while RO and SRO bypassing channel at CP011.	
	SRO/RO C	PERFORMS ACTIONS OF 0POP04-NI-0001 TO BYPASS THE FAILED CHANNEL	
	ALL	Continue with the actions of POP04-NI-0001, Nuclear Instrument Malfunction Addendum 3. - Verify permissives in the proper state - Select an operable power range channel on NI recorder - Contact Rx Engineering to perform flux maps	
	SRO	Initiate Tech Spec 3.3.1 Table 3.3-1 Action 2.a required actions by ensuring I&C contacted to trip bistables within 6 hours.	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 1 Event No.: 3			
Event Description: Condensate Pump #12 Trips.			
Time	Position	Applicant's Actions or Behavior	Notes
	BOP	Acknowledges and announces annunciator 9M01-A1, COND PMP TRIP.	
	BOP	Reports that condensate pump #12 has tripped.	
	BOP	Pulls out and reviews steps in OPOP09-AN-09M1, Annunciator Lampbox 9M01 Response Instructions.	
	BOP	Recommends that an alternate condensate pump be started.	
	SRO	Determines that an additional condensate pump is required based on current plant conditions and directs the BOP to start an alternate condensate pump.	
	RO/BOP	Dependent on plant conditions may make a plant announcement based on condensate pump start.	
	BOP	Starts an alternate condensate pump and opens the respective condensate pump discharge valve.	
	BOP (continuous)	Monitors the condensate system to ensure parameters return to normal. <ul style="list-style-type: none"> - Condensate pump recirc valve closes - Deaerator and hotwell levels return to normal values - Condensate flow returns to normal - Low Pressure Heater Drip Pumps 	
	SRO/BOP	Ensures a Plant Operator is dispatched to determine the cause of the condensate pump trip.	

OPERATOR ACTIONS (Cont')

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

Event Description: Steam Generator B tube leakage escalating value to Safety Injection required leak rate. Design Basis Accident leakage rate immediately after the reactor is tripped.

Time	Position	Applicant's Actions or Behavior	Notes
	RO/BOP	Acknowledges and announces radiation monitoring alarms and begins an investigation into possible tube leak.	<i>There is an approximately 2 minute delay from malfunction trigger until radiation monitor alarm comes in.</i>
	SRO	Enters POP04-RA-0001 based on radiation monitoring alarms.	
	SRO	Begins investigation of SG tube leakage by directing RO/BOP to monitor RCS leakage and identify the affected SG.	
	RO/BOP	Identifies the affected SG.	
	SRO (continuous)	Directs/ensures operator actions of OPOP04-RC-0004, Steam Generator Tube Leakage.	
	SRO/BOP C	ENSURES BLOWDOWN IS ISOLATED FROM SG B	
	RO	Control and monitor CVCS charging and letdown to maintain VCT level greater than 15% and pressurizer level greater than 17%	
	SRO	Ensures that BOP/RO monitor and report status of pressurizer level, VCT level and SG B feed flow steam flow mismatch.	
	SRO	Direct performance of POP03-ZG-0006, Plant Shutdown From 100% to Hot Standby, at greater than or equal to .5%/min concurrently with tube leak procedure.	
	SRO	Ensures Chem Analysis, HP, and Chem Operations notified to carry out procedural actions.	
	ALL	Makes a plant announcement concerning tube leakage on SG B.	

	ALL C	MANUALLY INITIATES SI WHEN DIRECTED OR PRIOR TO PRESSURIZER LEVEL DECREASING TO < 17%.	
	SRO	Ensures that the crew enters OPOP05-EO-EO00, Reactor Trip or Safety Injection.	
	RO/BOP	Completes immediate actions of EO00, Reactor Trip/SI.	
	SRO	Directs/ensures the immediate actions of EO00, Reactor Trip/SI have been completed.	
	ALL	Ensures RCPs are tripped if RCS pressure drops to less than 1495 psig.	
	SRO/BOP C (continuous)	ENSURES THAT AFW FLOW REMAINS ISOLATED TO B SG WHILE SG LEVEL > 14% NR.	
	SRO/BOP	May initiate a Main Steam Line Isolation dependent on the value and trend of SG pressures approaching 735 psig.	
	ALL	Completes the actions of EO00 up to the EO20, Faulted SG Isolation transition point.	<i>see event #6 for Charging OCIV failure.</i>
	ALL (continuous)	Monitors Critical Safety Functions upon exiting EO00.	
	SRO	Transitions to EO20, Faulted SG Isolation and directs RO/BOP actions.	<i>see event #5 for actions on failed open SG safety.</i>
	SRO	Transitions to EO30, SGTR based on SG radiation abnormal.	<i>Actions continued from event #5.</i>
	BOP	Identifies Ruptured SG as SG B.	
	SRO C	DIRECTS/ENSURES THE FLOW FROM SG B IS ISOLATED. - Adjusts SG PORV setpoint to 1260 - 1265 - Verifies blowdown isolated - Closes SG MSIVs	
	BOP	When directed in EO30, adjusts SG B PORV setpoint to 1260 to 1265 psig and places the PORV in auto.	
	RO	When directed restores instrument air to containment.	

	SRO	Verifies ruptured SG pressure is >426 psig and continues with EO30.	
	BOP	Blocks the LOW STEAMLIN PRESSURE SI when RCS < 1985 psig.	
	ALL C	INITIATES RCS COOLDOWN TO TEMPERATURE CORRESPONDING TO RUPTURED SG PRESSURE.	
	SRO/BOP	<p>Initiate a cooldown at maximum rate.</p> <ul style="list-style-type: none"> - Target core exit temp determined by table corresponding to ruptured SG pressure. - Steaming rate should be maximum available while avoiding a main steam isolation. - If steam dumps used to perform cooldown, an unaffected SG PORV should be fully opened to substitute for the inoperable steam dump. 	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 1 Event No.: 5			
Event Description: Safety leakage on ruptured Steam Generator 1B after the reactor is tripped.			
Time	Position	Applicant's Actions or Behavior	Notes
	BOP	Determines SG B is faulted based on the following: - SG B pressure decreasing - ERFDADs indication of Safety open	
	SRO	Transitions to EO20, Faulted SG Isolation, and directs RO/BOP actions.	
	ALL	Monitors the status of Critical Safety Functions when the crew transitions to OPOP05-EO-EO20.	
	SRO/BOP	Ensures that the AFW flow to SG B is isolated.	
	BOP/RO	When directed, resets SI, SG LO-LO level AFW actuation, SG blowdown and sample isolation.	
	SRO	Notifies Chemical Analysis to sample all SGs for activity.	<i>Operator actions continue at event #4.</i>

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 1 Event No.: 6			
Event Description: Charging line OCIV fails to close upon receipt of a Safety Injection signal.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO	Report that the charging OCIV did not close upon receipt of a Containment Isolation signal based on "Fail to Actuate" light.	
	SRO/RO	Directs the RO to attempt to close the charging OCIV using the control room handswitch.	
	SRO/RO	Ensures a plant operator is dispatched to manually close the charging OCIV.	
	SRO	Continues with the actions of EO00.	<i>Continued under event #4</i>

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
SRO/RO C	PERFORMS ACTIONS OF 0POP04-NI-0001 TO BYPASS THE FAILED CHANNEL	ACTIONS AT CP011 LISTED IN ADDENDUM 3 OF POP04-NI-0001 TO BYPASS NI CHANNEL 41 ARE COMPLETED.	
SRO/BOP C	ENSURES BLOWDOWN IS ISOLATED FROM SG B	ENSURES BLOWDOWN IS ISOLATED FROM SG B PRIOR TO EXITING EO30.	
ALL C	MANUALLY INITIATES SI WHEN DIRECTED OR PRIOR TO PRESSURIZER LEVEL DECREASING TO < 17%.	AN AUTOMATIC SI SIGNAL IS NOT RECEIVED.	
SRO/BOP C	ENSURES THAT AFW FLOW REMAINS ISOLATED TO B SG WHILE SG LEVEL > 14% NR.	ENSURE AFW FLOW IS ISOLATED TO SG B PRIOR TO EXITING EO30.	
SRO C	DIRECTS/ENSURES THE FLOW FROM SG B IS ISOLATED.	ENSURES FLOW FROM SG B IS ISOLATED PRIOR TO EXITING EO30 BY PERFORMING THE FOLLOWING ACTIONS: - ADJUSTS SG PORV SETPOINT TO 1260 - 1265 - VERIFIES BLOWDOWN ISOLATED ON SG B - CLOSES SG B MSIV	
ALL C	INITIATES RCS COOLDOWN TO TEMPERATURE CORRESPONDING TO RUPTURED SG PRESSURE.	INITIATES COOLDOWN OF THE RCS AT MAXIMUM RATE WHEN DIRECTED IN EO30.	

TURNOVER INFORMATION

25% Power, 8,000 MWD/MTU

Plant Startup in progress after an unplanned trip three days ago. Startup procedure POP03-ZG-0005 Step 7.11.8 in progress. Maintaining the current power level until chemistry levels are acceptable for continued power increase.

Bank 1 Steam Dump Valve PV-7493 has been manually isolated due to excessive seat leakage.

Component Cooling Water Pump 1B is to be started and Component Cooling Water Pump 1A is to be secured. This will allow performance Technicians to perform vibration checks on Component Cooling Water Pump 1B later in the shift. Places Excess Letdown in service.

INITIAL LICENSE EXAM
OPERATING TEST 1
SCENARIO 2

JUNE 1, 1998

Revision 0

SCENARIO OUTLINE

Facility: South Texas Project **Scenario No.:** 2 **Op-Test No.:** 1

Session 1 Examiners: E2 evaluating Kelly Teague Operators: SRO-Kelly Teague
RO-Pete Lara
BOP-Mike Schaefer

Session 2 Examiners: E1 evaluating David Klaus Operators: SRO-David Klaus
RO-Bill Morris
BOP-Lu DeLaGarza

Objectives: The Unit Supervisor's ability to protect plant personnel and the public is evaluated during a failure of the Containment Ventilation Isolation signal to isolate the Containment Supplemental Purge in progress. The ability to diagnose events is evaluated during a loss of a 4.16 KV ESF Bus which results in a loss of letdown. Familiarity with procedural immediate actions and the ability to take timely actions to mitigate events is evaluated during a Tcold instrument failure which will result in an unexpected rod insertion.

Initial Conditions: 100% Power, 8,000 MWD/MTU

Turnover: Secure Closed Loop Auxiliary Cooling Water Pump #12 due to high vibration. Supplemental Containment Purge is in progress.

Event No.	Malf. No. & (Value)	Event Type*	Event Description & Timing
1	N/A	N	Shift operating Closed Loop Auxiliary Cooling Water pumps.
2	2-25-2 (1.0)	I	Reactor Coolant System temperature instrument Loop 1 Tcold fails high after Closed Loop Cooling Water Pump #11 is secured or after 10 min.
3	10-11-3 (T)	C	Loss of 4.16 KV ESF Bus EIC due to overcurrent lockout after the crew has addressed Tech Specs for the Tcold failure or after 12 min.
4	2-1-1 (1.0)	M	Large Break LOCA Reactor Coolant System Loop 1A after the crew places excess letdown in service or after 15 min.
5	Rose Schematics	I	Failure of Containment Ventilation Isolation dampers MOV-003 and FV-9776 to close.
6	4-16-2 (T)	C	Containment Spray Pump 1B Trips after checked in EO00. The scenario is terminated when the crew completes actions in ES13.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor. All event types apply only to the SRO position.

SCENARIO MISCELLANEOUS INFORMATION

SIMULATOR BOOTH NOTES:

SIMULATOR SETUP

1. Reset to IC #1 and go to run.
2. Trigger Lesson Plan #12 under Lesson Plan Group NRC2.
3. Ensure control rods are in auto.
4. Place Supplemental Purge in service.

EXPECTED BOOTH OPERATIONS

1. When directed to take actions to close the Supplemental Purge Damper FV-9776 or MOV-003, delete the open override to allow damper to shut. FV-9776 is the OCIV and can be closed locally at the valve. MOV-003 is the ICIV and can be closed by manipulating the breaker at the MCC if requested. This should be allowed to happen shortly after requested to ensure containment pressure is not allowed to decrease any more than necessary. This will help to ensure the crew transitions to FRZ1 later in the scenario.
2. Autograph file "/cae/agraph/data/jody/critscen2.agb.2" should load with lesson plan. At the conclusion of the scenario print out the critical parameter trends from the autograph file.
3. If asked to cross-connect AFW to feed SG 1C due to loss of associated AFW Pump, use AFW System remotes.
4. If asked to close the VCT Outlet Valve CV-112C, use CVCS System remotes to close.

EXPECTED BOOTH COMMUNICATIONS

1. If asked the discharge pressure of the operating Closed Loop ACW Pump, report 100 psig.
2. If asked to check Instrument air compressor status, report that Instrument Air compressor #12 is running.
3. If asked if any battery banks have any jumpered cells, report none jumpered.
4. If asked to investigate the breaker for CTMT Spray Pump 1B, report that an overcurrent flag dropped.

SCENARIO MISCELLANEOUS INFORMATION

SCENARIO TIME SUMMARY:

EVENT	VALIDATION TIME	FINAL TIME
Shift operating Closed Loop Auxiliary Cooling Water Pumps.	9 min	9 min
Reactor Coolant System temperature instrument Loop 1 Tcold fails high.	8 min (+3)	11 min
Loss of 4.16 KV ESF Bus E1C due to overcurrent lockout.	14 min	14 min
Large Break LOCA Reactor Coolant System Loop 1A. Failure of Containment Ventilation Isolation dampers MOV-003 and FV-9776 to close as well as CTMT Spray Pump 1B Trip included in event time.	40 min	40 min
TOTAL TIME		1 hr 14 min

Notes: VALIDATION TIME reflects the actual event run time based on a "minimally adequate crew". The numbers in parenthesis indicate a time cushion that is added to the validation time, where appropriate, to determine the FINAL TIME. This time cushion is added to ensure the crew has an opportunity to reach the desired point in the event. Malfunctions will be placed in pending and triggered at the times listed in the FINAL TIME column or at the discretion of the lead examiner.

CRITICAL PARAMETERS:

The following parameters may be of value in evaluating crew performance and should be placed in an Autograph file for recall when the scenario is completed:

- RWST Level
- Pressurizer Level, PT-456
- Wide Range RCS Pressure
- Reactor Power

OPERATOR ACTIONS TABLE NOTES:

1. Critical Tasks are indicated by "C" in the position column and indicated in bold type.
2. Actions required throughout the event are indicated as "(continuous)" in the position column.
3. Procedural entry points are indicated by shaded cells.

OPERATOR ACTIONS

Op-Test No.: 1 Scenario No.: 2 Event No.: 1			
Event Description: Shift operating Closed Loop Auxiliary Cooling Water Pumps.			
Time	Position	Applicant's Actions or Behavior	Notes
	SRO	Directs start of standby Closed Loop ACW pump and securing of #12 Closed Loop ACW pump per POP02-AC-0001.	
	BOP	Starts a standby Closed Loop ACW pump.	
	BOP	Secures #12 Closed Loop ACW pump after Closed Loop ACW pressure begins to increase.	
	BOP	Places a Closed Loop ACW pump in standby.	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 2 Event No.: 2			
Event Description: Reactor Coolant System temperature instrument Loop 1 Tcold fails high.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO	Responds to annunciators: - AUCT TAVG HI - TREF/AUCT TAVG DEV - DT/AUCT DT DEV - TAVG/AUCT TAVG DEV - PRZR LEVEL DEV LO	
	RO	Ensures rod control in manual.	
	SRO (continuous)	Directs the actions of OPOP04-RP-0004, Failure of RCS Loop RTD Protection Channel.	
	RO	Identifies the failed channel as 410B and informs the SRO.	
	RO/BOP	Controls charging flow as necessary to maintain the programmed pressurizer level value $\pm 5\%$.	
	RO	Ensures Tave maintained within 1.5 degrees of Tref.	
	RO	Defeats the failed RTD channel.	
	SRO	Refers to Technical Specifications 3.3.1 and 3.3.2 to determine applicability and the action required.	
	SRO	Notifies I&C to trip associated bistables within one hour.	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 2 Event No.: 3			
Event Description: Loss of 4.16 KV ESF Bus E1C due to overcurrent lockout.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO/BOP	Reports that E1C has an overcurrent lockout and cannot be reenergized.	
	SRO C	ENSURES STANDBY DIESEL GENERATOR 13 IS REMOVED FROM SERVICE.	
	SRO	Ensures an operator is dispatched to investigate the loss of E1C.	
	RO	Reports that CCP 1A has tripped and letdown has isolated.	
	SRO	Ensures the following actions taken based on CCP 1A trip per POP09-AN-04M8: - FCV-0205 is closed - CCP 1B placed in service	
	SRO	Enters either POP04-AE-0001, Loss of any 13.8 or 4.16 KV Bus or POP04-CV-0004, Loss of Normal Letdown and direct operator actions.	<i>The SRO may enter POP04-AE-0001, Loss of any 13.8 or 4.16 KV Bus or POP04-CV-0004, Loss of Normal Letdown and direct operator actions since entry conditions for both are met. The operator actions below are listed as described in the applicable procedure to make it easier to follow however, the crew may perform actions described in both procedures simultaneously.</i>
	SRO	Enters POP04-AE-0001, Loss of Any 13.8 KV or 4.16 KV ESF Bus and direct operator actions.	
	RO	Ensures Standby DG #13 is secured since 4.16 KV ESF Bus E1C is not energized.	

	RO/BOP	Places equipment on 4.16 KV ESF Bus E1C in Pull to Lock.	
	BOP	Places SG C PORV in manual.	
	RO	Ensures no RCS dilution in progress from the following sources: -Boron Thermal Regeneration System -Reactor Makeup System -Letdown Demineralizers	
	SRO/BOP	Verifies offsite power is available to 13.8 KV Switchgear	
	BOP	Verifies that an instrument air compressor is running and that cooling is available.	
	SRO	Determine that reenergization of 4.16 KV ESF Bus E1C should not be attempted due to a bus fault based on an overcurrent lockout condition.	
	SRO	Directs the RO to place Excess Letdown in service per POP02-CV-0004 based on loss of normal letdown.	
	RO	Monitors the increase in pressurizer level while leidown is not available and reduces seal injection flow rate to minimum to minimize pressurizer level rise.	
	RO	Places Excess Letdown in service. Monitors the following parameters to ensure limits are not exceeded during system startup: - Heat exchanger temperature - Heat exchanger pressure	
	SRO	Enters POP04-CV-0004, Loss of Normal Letdown and direct operator actions.	
	SRO/RO	Verifies letdown alignment.	
	SRO	Ensures maintenance is contacted to investigate the loss of E1C.	
	SRO	Directs the RO to place Excess Letdown in service per POP02-CV-0004 based on loss of normal letdown.	
	RO	Monitors the increase in pressurizer level while letdown is not available and reduces seal injection flow rate to minimum to minimize pressurizer level rise.	

	RO	Places Excess Letdown in service. Monitors the following parameters to ensure limits are not exceeded during system startup: <ul style="list-style-type: none">- Heat exchanger temperature- Heat exchanger pressure	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 2 Event No.: 4			
Event Description: Large Break LOCA Reactor Coolant System Loop 1A.			
Time	Position	Applicant's Actions or Behavior	Notes
	ALL	Recognizes that an automatic reactor trip and SI have occurred	
	RO/BOP	Completes immediate actions of EO00, Reactor Trip/SI.	
	SRO	Directs/ensures immediate actions of EO00, Reactor Trip/SI are completed.	
	ALL C (continuous)	TRIPS RCPs AFTER CONTAINMENT SPRAY IS ACTUATED.	
	BOP (continuous)	MAINTAINS TOTAL AFW FLOW \geq 576 GPM WHEN NR LEVEL IN ALL SGs IS LESS THAN 14% (34% ADVERSE CONTAINMENT).	
	ALL (continuous)	Monitor CTMT pressure and shift to adverse containment values when containment pressure exceeds 5 psig.	
	RO	Reports failure of CVI on Train A based on ESF Status Monitoring indications.	<i>Actions for a failure of CVI components are described under event #5.</i>
	RO	Identifies that Containment Spray Pump 1B tripped.	<i>Actions for a Containment Spray Pump 1A trip are described under event #6.</i>
	ALL	Complete actions of EO00 up to the transition to EO10.	
	ALL (continuous)	Monitors Critical Safety Functions upon exiting EO00.	
	SRO	Transitions to FRP1, Response to Imminent Pressurized Thermal Shock Condition due to RCS temperature decrease.	

	SRO/RO	Exits FRP1, Response to Imminent Pressurized Thermal Shock Condition at the first step based on LHSI flow greater than 500 gpm.	
	SRO	Transitions to FRZ1, Response to Containment High Pressure and directs operator actions.	
	RO	Places containment hydrogen monitoring system in service.	
	SRO	Transitions to EO10, Loss of Reactor or Secondary Coolant and directs operator actions.	
	SRO	Conducts a crew briefing to cover the following areas upon exiting FRZ1: <ul style="list-style-type: none"> - Previous events - Plant status - Future plans 	
	RO	When directed, resets SI, ESF Load Sequencers, Phase A and B.	
	BOP	When directed, resets SG LO-LO level AFW actuations, SG blowdown and sample isolation.	
	SRO	Directs Chemical Analysis to sample all SGs for activity.	
	RO	When directed, restores instrument air to containment.	
	SRO (continuous)	Transitions to ES13, when RWST level decreases to less than 75,000 gallons.	
	SRO	Directs RO to align injection flowpaths for cold leg recirculation and transfer to cold leg recirculation.	
	SRO/RO C	ALIGNS INJECTION FLOWPATHS FOR COLD LEG RECIRCULATION AND TRANSFERS TO COLD LEG RECIRCULATION, WHEN DIRECTED.	
	RO	When directed, establishes charging flow.	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 2 Event No.: 5			
Event Description: Failure of Containment Ventilation Isolation Signal Train A.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO	Reports failure of CVI to close HC-MOV-003 and HC-FV-9776 based on ESF Status Monitoring indications and control board position indicating lights.	
	SRO/RO C	ENSURES THE FOLLOWING ACTIONS ARE TAKEN: - STOPS SUPPLEMENTARY PURGE SUPPLY AND EXHAUST FANS - ATTEMPTS TO CLOSE PURGE DAMPERS - DISPATCHES AN OPERATOR TO CLOSE ISOLATION DAMPER(S) LOCALLY	
	SRO	Continues with the actions of EO00.	<i>Continued under event #4</i>

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 2 Event No.: 6			
Event Description: Containment Spray Pump 1B Trips after checked in EO00			
Time	Position	Applicant's Actions or Behavior	Notes
	RO	Identifies that Containment Spray Pump 1B tripped.	
	SRO	Directs/ensures the RO attempts to manually start Containment Spray Pump 1B OR places handswitch in PTL per OPOP09.	
	RO	Attempts to manually start Containment Spray Pump 1B or place handswitch in PTL if directed.	
	SRO	Ensures an operator is dispatched to investigate the cause of Containment Spray Pump 1B trip.	
	SRO	Ensures maintenance is contacted to investigate cause of Containment Spray Pump 1B trip.	<i>Continued under event #4</i>

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
SRO C	ENSURES STANDBY DIESEL GENERATOR 13 IS REMOVED FROM SERVICE.	SECURE STANDBY DIESEL GENERATOR #13 PRIOR TO STANDBY DIESEL GENERATOR TRIPPING OR PRIOR TO EXITING EO00.	
ALL C	TRIPS RCPs AFTER CONTAINMENT SPRAY IS ACTUATED.	RCPs ARE TRIPPED PRIOR TO EXITING EO00.	
BOP C	MAINTAINS TOTAL AFW FLOW ≥ 576 GPM WHEN NR LEVEL IN ALL SGs IS LESS THAN 14% (34% ADVERSE CONTAINMENT).	AFW FLOW IS MAINTAINED ≥ 576 GPM UNTIL AT LEAST ONE SG NARROW RANGE LEVEL IS $> 14\%$ NORMAL OR 34% ADVERSE CONTAINMENT.	
SRO/RO C	ALIGNS INJECTION FLOWPATHS FOR COLD LEG RECIRCULATION AND TRANSFERS TO COLD LEG RECIRCULATION, WHEN DIRECTED.	ENSURES RWST ISOLATIONS ARE MANUALLY CLOSED FOR SI TRAINS A AND B PRIOR TO 28,000 GALLONS IN THE RWST.	
SRO/RO C	ENSURES THE FOLLOWING ACTIONS ARE TAKEN: - STOPS SUPPLEMENTARY PURGE SUPPLY AND EXHAUST FANS - ATTEMPTS TO CLOSE PURGE DAMPERS - DISPATCHES AN OPERATOR TO CLOSE ISOLATION DAMPER(S) LOCALLY	ENSURES THE FOLLOWING ACTIONS ARE TAKEN PRIOR TO EXITING EO00: - STOPS SUPPLEMENTARY PURGE SUPPLY AND EXHAUST FANS - DISPATCHES AN OPERATOR TO CLOSE ISOLATION DAMPER(S) LOCALLY	

NOTE: Acceptance Criteria MUST be evaluated as Satisfactory (S) or Unsatisfactory (U).

TURNOVER INFORMATION

100% Power, 8,000 MWD/MTU

All equipment is operable

Supplemental Containment Purge is in progress to reduce radiation levels in preparation for a planned containment entry.

Secure Closed Loop Auxiliary Cooling Water Pump #12 due to high vibration. The pump can be left in automatic if desired after shutdown.

INITIAL LICENSE EXAM
OPERATING TEST 1
SCENARIO 3

JUNE 1, 1998

Revision 0

SCENARIO OUTLINE

Facility: South Texas Project	Scenario No.: 3	Op-Test No.: 1
Session 1	Examiners: E1 evaluating Pete Lara	Operators: SRO-Pete Lara RO-Mike Schaefer BOP-Kelly Teague
Session 2	Examiners: E2 evaluating Bill Morris	Operators: SRO-Bill Morris RO-Lu DeLaGarza BOP-David Klaus
<p>Objectives: Evaluate the crew's ability to diagnose plant events as well as protect plant personnel and the public during a radioactive leak in the Auxiliary Building. Evaluate the Unit Supervisor's ability to direct appropriate actions to control the plant and minimize transients during a loss of vacuum with power above the turbine trip/reactor trip setpoint. Evaluate the crew's ability to diagnose events and take required actions during a slowly increasing steam break inside the reactor containment building. Evaluate the crew's ability to initiate contingency actions as directed in the EOPs based on a failure of an MSIV to close.</p> <p>Initial Conditions: 75% Power, 8,000 MWD/MTU, fuel pre-conditioning limits have been met, power increase in progress.</p> <p>Turnover: A power increase is in progress per POP03-ZG-0005 step 7.23.6, fuel pre-conditioning limits have been met. The 85 gpm letdown orifice is to be placed in service and the 120 gpm letdown orifice is to be secured to allow flow verification for the 85 gpm orifice.</p>		

Event No.	Malf. No. & (Value)	Event Type*	Event Description & Timing
1	N/A	N	Swap letdown orifices.
2	2-19-3 (.01)	I	Pressurizer pressure instrument PT-457 fails low after letdown parameters stabilize or after 8 min.
3	3-12-1 (.5)	C	20 gpm letdown line leak outside containment after the crew has addressed Tech Specs based on the PT-457 failure or after 15 min.
4	7-2-1 (0 to .5) 7 min ramp	C	Slowly escalating condenser air inleakage after actions taken to isolate the letdown line leak or after 12 min.
5	5-2-3 (0 to .5) 7 min ramp	M	Slowly increasing fault on SG 1C inside the Reactor Containment Building after the reactor and/or turbine is tripped.
6	5-7-3	C	Main Steam Isolation Valve 1C fails to close until local actions taken to close. The scenario is terminated after the actions of EO20 have been completed

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor. All event types apply only to the SRO position.

SCENARIO MISCELLANEOUS INFORMATION

SIMULATOR BOOTH NOTES:

SIMULATOR SETUP

1. Restore to IC#2 storepoint and go to run.
2. Trigger Lesson Plan #13 under Lesson Plan Group NRC2.

EXPECTED BOOTH OPERATIONS

1. Delete the MSIV Fails Open malfunction when asked to locally close MSIV C.
2. Autograph file "/cae/agraph/data/jody/critscen3.agb.1" should load with lesson plan. At the conclusion of the scenario print out the critical parameter trends from the autograph file.

EXPECTED BOOTH COMMUNICATIONS

1. When asked to investigate lowering condenser vacuum report all parameters as normal with the exception of the sound of inrushing air near the exhaust hood for Low Pressure Turbine #12.

SCENARIO MISCELLANEOUS INFORMATION

SCENARIO TIME SUMMARY:

EVENT	VALIDATION TIME	FINAL TIME
Swap letdown orifices.	8 min	8 min
Pressurizer pressure instrument PT-455 fails low.	12 min (+3)	15 min
20 gpm letdown line leak outside containment.	9 min (+3)	12 min
Slowly escalating condenser air inleakage.	7 min	7 min
Slowly increasing fault on SG 1C inside the Reactor Containment Building. Main Steam Isolation Valve 1C fails to close until local actions taken to close.	33 min	33 min
TOTAL TIME		1 hr 15 min

Notes: VALIDATION TIME reflects the actual event run time based on a "minimally adequate crew". The numbers in parenthesis indicate a time cushion that is added to the validation time, where appropriate, to determine the FINAL TIME. This time cushion is added to ensure the crew has an opportunity to reach the desired point in the event. Malfunctions will be placed in pending and triggered at the times listed in the FINAL TIME column or at the discretion of the lead examiner.

CRITICAL PARAMETERS:

The following parameters may be of value in evaluating crew performance and should be placed in an Autograph file for recall when the scenario is completed:

- SG C AFW flow
- SG A Pressure
- Pressurizer Level, PT-466
- Pressurizer Pressure, PT-456
- CTMT Wide Range Pressure
- Reactor Power

OPERATOR ACTIONS TABLE NOTES:

1. Critical Tasks are indicated by "C" in the position column and indicated in bold type.
2. Actions required throughout the event are indicated as "(continuous)" in the position column.
3. Procedural entry points are indicated by shaded cells.

OPERATOR ACTIONS

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

Event Description: Swap letdown orifices from the 120 gpm orifice to the 85 gpm orifice.

Time	Position	Applicant's Actions or Behavior	Notes
	SRO	Directs the RO to swap letdown orifices in accordance with POP02-CV-0004, CVCS Operations.	
	SRO (continuous)	Maintains cognizance of orifice swap while maintaining the big picture of plant status.	
	RO	Enters OPOP02-CV-0004. Ensures CVCS Demins bypassed - if not, bypasses demins.	
	RO	Takes manual control of PCV-0135, Letdown Pressure Control Valve, and adjusts pressure as necessary. Monitors for low pressure, which could result in flashing, and high pressure, which could result in a letdown relief actuation.	
	RO	Places selected orifice in operation and removes orifice to be secured from service.	
	RO	Adjusts letdown pressure to between 350-380 PSIG and place PCV-0135, Letdown Pressure Control Valve, in AUTO.	
	RO	Adjusts Charging Flow on PCV-0135 as needed to match charging and letdown flows.	
	RO	Places demins back in service if necessary. (as directed by SRO)	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 3 Event No.: 2			
Event Description: Pressurizer pressure instrument PT-457 fails low.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO	Acknowledges and Reports annunciators on Control board CP004 are indicative of a pressurizer pressure instrument failure.	
	RO	Reports that pressurizer pressure channel PT-0457 has failed low.	
	SRO (continuous)	Directs/ensures the actions of OPOP04-RP-0001, Loss of Automatic Pressurizer Pressure Control, are taken.	
	RO	Places Pressurizer Master Pressure Controller RC-PK-0655A in MANUAL	
	SRO/RO C	REMOVES THE FAILED PRESSURE CHANNEL FROM SERVICE BY PLACING THE PRESSURIZER PRESSURE CONTROL SELECTOR SWITCH TO THE P455/456 POSITION.	
	RO	Returns Pressurizer Master Controller to AUTO and verifies proper operation: <ul style="list-style-type: none"> - Pressurizer Pressure maintaining between 2220 and 2250 psig. - Pressurizer PORVS closed. - Auxiliary spray valve closed. - Normal spray valve closed. - Variable Pressurizer Heaters deenergized. - Backup heaters cycling AS REQUIRED between 2210 and 2220 psig. 	
	SRO	Initiates actions per Technical Specification 3.3.1 Table 3.3-3 Action 1e. (Associated bistables must be tripped within 1 hour.)	

	SRO	Notifies I&C maintenance to trip appropriate channel 1 bistables per Addendum 1 of OPOP04-RP-0001.	
	SRO/RO	Verifies permissives in correct state for current plant conditions.	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 3 Event No.: 3			
Event Description: 20 gpm letdown line leak outside containment.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO/BOP	Acknowledges and reports radiation monitoring alarm in MAB.	
	SRO	Enters POP04-RA-0001 based on radiation monitoring alarm.	
	RO/BOP	Report indications of excessive RCS leakage based on the following indications: -Decreasing RCS pressure -Decreasing pressurizer level -Charging and letdown flow imbalance -MAB radiation monitors in alarm	
	SRO (continuous)	Enters POP04-RC-0003, Excessive RCS Leakage and directs operator actions.	
	RO (continuous)	Control charging and letdown to maintain pressurizer level > 17% and VCT level greater than 15%.	
	ALL	Follow the procedure diagnostic order to determine the leakage is from the MAB. -SG tube leakage -Leakage to the RCDT -Leakage through Incore Instrumentation -Leakage to Containment -Leakage to the PRT -Leakage to CCW -Leakage to the MAB	
	SRO/RO	Determine leakage is from the MAB based on: -MAB radiation abnormal -Letdown flow and pressure changes	
	SRO	Transition to Addendum 6 and directs actions to identify and isolate the leakage.	
	SRO/RO C	DIRECTS/ENSURES RCS LEAKAGE ISOLATED BY REMOVING NORMAL LETDOWN FROM SERVICE.	
	SRO	Directs the RO to place excess letdown in service per POP02-CV-0004 to control RCS inventory based on loss of normal letdown.	

	RO	Monitors the increase in pressurizer level while letdown is not available and reduces seal injection flow rate to minimum value to minimize RCS level rise.	
	RO	Initiates actions to place Excess Letdown in service. Monitors the following parameters to ensure limits are not exceeded during system startup: -Heat exchanger temperature -Heat exchanger pressure	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 3 Event No.: 4			
Event Descriptor: Slowly escalating condenser air inleakage.			
Time	Position	Applicant's Actions or Behavior	Notes
	BOI'	Reports lowering condenser vacuum based on the following indications: -Lowering vacuum -Lowering turbine load -Condenser vacuum low alarm	
	BOP	Reviews and takes the actions of POP09-AN-07M3 Annunciator Response Procedure if the Main Condenser Vacuum Low alarm is received.	
	SRO (continuous)	Enters POP04-CR-0001, Loss of Condenser Vacuum and directs operator actions.	
	BOP (continuous)	Monitors condenser vacuum and verifies required automatic actions: -Rx/Turbine trip @ 22"Hg	
	SRO	Coordinates a reduction in turbine load to increase the value of condenser vacuum. The following information should be discussed: -Turbine ramp rate -Method of power decrease (i.e. rods and/or boration) -Value at which a manual reactor and/or turbine trip will be performed	
	SRO	Directs efforts to determine and eliminate the reason for lowering vacuum.	
	SRO	Directs a manual reactor trip prior to receiving an automatic trip based on lowering condenser vacuum.	
	SRO	Transitions to POP05-EO-EO00, Reactor Trip procedure and ensures the immediate actions of POP05-EO-EO00 are performed.	
	RO/BOP	Perform the immediate actions of EO00.	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: 3 Event No.: 5			
Event Description: Slowly increasing fault on SG 1C inside the Reactor Containment Building.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO/BOP	Recommends a manual safety injection signal based on the following: -Increasing Containment pressure -Decreasing RCS pressure	
	SRO	Directs PO/SO to manually initiate SI and/or ensures that SI actuates when required.	
	RO/BOP	Manually initiates SI when directed by the SRO.	
	SRO (continuous)	Directs the actions of EO00 up until the EO20, Faulted SG Isolation transition point.	
	RO/BOP (continuous)	Completes immediate actions of EO00 and continue with EO00 supplementary actions.	
	SRO/BOP C	DIRECTS/ENSURES ISOLATION OF FAULTED SG C BY PERFORMING THE FOLLOWING: - ISOLATING SG C FROM THE MAIN STEAM HEADER - ISOLATING AFW FLOW TO SG C	<i>See event #6</i>
	SRO/BOP C	DIRECTS/ENSURES RCPs ARE TRIPPED FOLLOWING THE PHASE B ISOLATION SIGNAL.	
	SRO/BOP C	MAINTAINS TOTAL AFW FLOW \geq 576 GPM WHILE NR LEVEL IN ALL INTACT SGs IS LESS THAN 14% (34% ADVERSE CONTAINMENT)	
	SRO	Transitions to EO20, Faulted SG Isolation.	
	ALL (continuous)	Monitors Critical Safety Functions upon exiting EO00.	
	SRO	Conducts a crew briefing upon exiting EO00 to cover the following areas: -Previous events -Plant status -Future plans	

	SRO (continuous)	Ensures the crew enters FRZ1, Response to Containment High Pressure if containment pressure is above setpoint after exiting EO00	
	SRO	Transitions to EO10, Loss of Reactor or Secondary Coolant.	
		This event would be classified as an <u>Unusual Event</u> based on an RCS cooldown due to an uncontrolled secondary depressurization.	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 of		Scenario No.: 3	Event No.: 6	Page
Event Description: Main Steam Isolation Valve 1C fails to close until local actions taken to close.				
Time	Position	Applicant's Actions or Behavior	Notes	
	BOP	Reports that the Main Steam isolation Valve C will not close using the control room handswitch.		
	SRO/BOP	Directs/Ensures an operator is dispatched to manually close Main Steam isolation Valve C.	<i>The operator actions for the remainder of the scenario recommence under event #5.</i>	

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
SRO/RO C	REMOVES THE FAILED PRESSURE CHANNEL FROM SERVICE BY PLACING THE PRESSURIZER PRESSURE CONTROL SELECTOR SWITCH TO THE P455/456 POSITION.	THE RX DOES NOT TRIP BASED ON A PT-457 FAILURE.	
SRO/RO C	DIRECTS/ENSURES RCS LEAKAGE ISOLATED BY REMOVING NORMAL LETDOWN FROM SERVICE.	RCS LEAKAGE IS ISOLATED PRIOR TO REQUIRING A SAFETY INJECTION BASED ON PRESSURIZER LEVEL.	
SRO/BOP C	DIRECTS/ENSURES ISOLATION OF FAULTED SG C BY PERFORMING THE FOLLOWING: - ISOLATING SG C FROM THE MAIN STEAM HEADER - ISOLATING AFW FLOW TO SG C	SG C IS ISOLATED AND/OR OPERATOR DISPATCHED TO PERFORM LOCAL ACTIONS TO ISOLATE PRIOR TO EXITING EO20.	
SRO/BOP C	DIRECTS/ENSURES RCPS ARE TRIPPED FOLLOWING THE PHASE B ISOLATION SIGNAL.	RCPS ARE TRIPPED PRIOR TO EXITING EO00 IF A PHASE B ISOLATION HAS OCCURRED.	
SRO/BOP C	MAINTAINS TOTAL AFW FLOW ≥ 576 GPM WHILE NR LEVEL IN ALL INTACT SGs IS LESS THAN 14% (34% ADVERSE CONTAINMENT)	MAINTAINS TOTAL AFW FLOW ≥ 576 GPM WHILE NR LEVEL IN ALL INTACT SGs IS LESS THAN 14% (34% ADVERSE CONTAINMENT)	

NOTE: Acceptance Criteria MUST be evaluated as Satisfactory (S) or Unsatisfactory (U).

TURNOVER INFORMATION

75% Power, 8,000 MWD/MTU.

A power increase is in progress per POP03-ZG-0005 step 7.23.6, fuel pre-conditioning limits have been met.

The 85 gpm letdown orifice is to be placed in service and the 120 gpm letdown orifice is to be secured to allow flow verification for the 85 gpm orifice prior to continuing with power increase.

All equipment is operable.

INITIAL LICENSE EXAM
BACKUP SCENARIO

JUNE 1, 1998

Revision 0

SCENARIO OUTLINE

Facility: South Texas Project Scenario No.: Backup Scenario Op-Test No.: N/A

Objectives: Provide a backup scenario to be used as necessary to evaluate performance in the event competency areas or event types are not adequately addressed during the performance of scheduled scenario sessions. The crew's ability to diagnose RCS leakage rates and take appropriate actions based on the leakrate will be evaluated. The ability to monitor the operation of plant systems and take necessary corrective actions will be evaluated during a failure of an ECW pump to start and during a failure of source range NIs to energize.

Initial Conditions: 100% power, 8,000 MWD/MTU

Turnover: The Unit is at 100% power. Upon taking the shift the crew is to Start Centrifugal Charging Pump 1B and secure Centrifugal Charging Pump 1A to allow to allow Engineering to take vibration measurements on Centrifugal Charging Pump 1B.

Event No.	Malf. No. & (Value)	Event Type*	Event Description & Timing
1	N/A	N	Shift Operating Centrifugal Charging Pumps.
2	2-18-1 (1.0)	I	Pressurizer Level Control fails high when CVCS parameters have stabilized after CCP swap or after 8 min.
3	4-1-2 (T)	C	CCW Pump 1B trips after the crew has addressed Tech Specs for the level control failure or after 9 minutes.
4	2-4-1 (0 to .45) ramp over 7 min	M	Small Break LOCA on the Rx Vessel Head Vent. Escalating to 210 gpm over a 7 minute period after CCW parameters have stabilized or after 10 minutes.
5	4-9-3 (T)	C	Train C ECW Pump fails to start on Safety Injection signal.
6	1-35-2 (T)	C	Intermediate Range Nuclear Instrument Channel 36 is undercompensated.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor. All event types apply only to the SRO position.

SCENARIO MISCELLANEOUS INFORMATION

SIMULATOR BOOTH NOTES:

SIMULATOR SETUP

1. Restore to IC #1 storepoint and go to run.
2. Trigger Lesson Plan #14 under Lesson Plan Group NRC2.
3. Ensure control rods are in auto.

EXPECTED BOOTH OPERATIONS

1. Autograph file "/cae/agraph/data/jody/critbackup.agb.2" should load with lesson plan. At the conclusion of the scenario print out the critical parameter trends from the autograph file.

EXPECTED BOOTH COMMUNICATIONS

1. When dispatched to check out the breaker for CCW Pump 1B report that an overcurrent flag has dropped.

SCENARIO MISCELLANEOUS INFORMATION

SCENARIO TIME SUMMARY:

EVENT	VALIDATION TIME	FINAL TIME
Shift Operating Centrifugal Charging Pumps.	6 min (+2)	8 min
Pressurizer Level Control fails high.	7 min (+2)	9 min
CCW Pump 1B trips.	7 min (+3)	10 min
Small Break LOCA on the Rx Vessel Head Vent. Escalating to 210 gpm over a 7 minute period. Train C ECW Pump failing to start and IR channel 36 also included in the event time.	38 min	38 min
TOTAL TIME		1 hr, 5 min

Notes: VALIDATION TIME reflects the actual event run time based on a "minimally adequate crew". The numbers in parenthesis indicate a time cushion that is added to the validation time, where appropriate, to determine the FINAL TIME. This time cushion is added to ensure the crew has an opportunity to reach the desired point in the event. Malfunctions will be placed in pending and triggered at the times listed in the FINAL TIME column or at the discretion of the lead examiner.

CRITICAL PARAMETERS:

The following parameters may be of value in evaluating crew performance and should be placed in an Autograph file for recall when the scenario is completed:

- Pressurizer Level, LT-466
- RCS Wide Range Pressure
- CTMT Pressure
- RCS Subcooling
- Reactor Power

OPERATOR ACTIONS TABLE NOTES:

1. Critical Tasks are indicated by "C" in the position column and indicated in bold type.
2. Actions required throughout the event are indicated as "(continuous)" in the position column.
3. Procedural entry points are indicated by shaded cells.

OPERATOR ACTIONS

Op-Test No.: 1 Scenario No.: Backup Event No.: 1			
Event Description: Shift Operating Centrifugal Charging Pumps.			
Time	Position	Applicant's Actions or Behavior	Notes
	SRO	Directs the RO to Start Centrifugal Charging Pump 1B and Secure Centrifugal Charging Pump 1A per POP02-CV-0004, Chemical and Volume Control System.	
	RO	Ensures CVCS System is prepared for Centrifugal Charging Pump 1B start. -Ensures discharge valve open -Charging flow control valve in manual -CCP Aux lube oil pump available	
	RO/BOP	Announces intention to start CCP 1B over the plant page and dispatches operator to check locally.	
	RO	Starts CCP 1B and monitors the following: -Charging flow -RCP Seal injection flows	
	RO	Performs valve alignments and shuts down CCP 1A.	
	RO	Places charging flow control valve in auto and monitors the following while adjusting seal injection flow control valve as necessary: -Charging flow -RCP Seal injection flows -Pressurizer level	
	RO	Ensure cooling fan starts for CCP 1B and secures cooling fan for CCP 1A	
	RO	Reports to the SRO that CCPs have been shifted.	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: Backup Event No.: 2			
Event Description: Pressurizer Level Control fails high.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO	Reports that pressurizer level is not responding as expected and reviews annunciator response procedure for alarms.	
	SRO (continuous)	Enters POP04-RP-0002, Loss of Automatic Pressurizer Level Control and directs operator actions.	
	RO	Places FCV-0205 in manual to control pressurizer level.	
	RO	Determines that a pressurizer level and RCS temperature channel have not failed.	
	RO	Verifies that RCS temperature and pressurizer level are normal.	
	SRO/RO (continuous)	Direct/Ensure pressurizer level is maintained in at the appropriate level for the present power level by maintaining FCV-0205 in manual.	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: Backup Event No.: 3			
Event Description: CCW Pump 1B trips.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO	Silences CCW Pump 1B trip as an unexpected alarm and reports a trip of CCW Pump 1B.	
	RO (continuous)	Ensures the actions of POP09-AN-02M3, Annunciator Lampbox 2M03 Response Instruction are performed.	
	SRO (continuous)	Maintains cognizance of CCW Pump trip event while maintaining big picture of plant status.	
	RO	Verifies CCW header pressure is > 76 psig and that the standby CCW pump is running.	
	RO	Places the CCW Pump 1B handswitch in Pull To Lock.	
	RO	Secures CCW Pump 1B per POP02-CC-0001, Component Cooling Water and ensures at least one available ECW/CCW train mode selector switch is placed in standby.	
	SRO	Ensures the actions of Tech Spec 3.7.3 are reviewed.	
	SRO	Ensures maintenance is contacted to investigate the cause of the CCW Pump 1B trip.	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: Backup Event No.: 4			
Event Description: Small Break LOCA on the Rx Vessel Head Vent. Escalating to 210 gpm over a 7 minute period.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO/BOP	Acknowledges and reports a radiation monitoring alarm in containment.	
	SRO	Enters POP04-RA-0001 to address radiation monitoring alarm.	
	RO/BOP	Determine that RCS a loss of reactor coolant is occurring based on the following: <ul style="list-style-type: none"> -Pressurizer and VCT level change -Charging and letdown flow mismatch -Containment radiation monitoring trend -Containment pressure increase -Containment sump level increase 	
	SRO	Enters POP04-RC-0003, Excessive RCS Leakage and directs operator actions.	
	RO	Controls charging and letdown to maintain pressurizer level > 17% and VCT level greater than 15%.	
	ALL	Follow the procedure diagnostic order to determine the leakage is to the containment. <ul style="list-style-type: none"> -SG tube leakage -Leakage to the RCDT -Leakage through Incore Instrumentation -Leakage to Containment 	
	SRO/RO	Determines leakage is from the containment based on: <ul style="list-style-type: none"> -CTMT radiation increasing -CTMT sump level and flow abnormal -CTMT pressure increasing 	
	SRO	Transitions to Addendum 3 of POP04-RC-0003 RCS Excessive Leakage and directs operator actions.	
	RO	Attempts to determine RCS Leakage rate by comparing letdown and charging flow rates and reports estimated RCS leakage rates to the SRO.	

	RO	Determines that RCS leakage is greater than the capacity of the Reactor Makeup System and reports this to the SRO.	
	SRO C	ENSURES A MANUAL REACTOR TRIP AND SAFETY INJECTION BASED ON RCS LEAKAGE RATE GREATER THAN THE CAPACITY OF THE REACTOR MAKEUP SYSTEM.	
	RO/BOP	Performs the immediate actions of EO00, Reactor Trip or Safety Injection.	
	SRO	Enters EO00, Reactor Trip or Safety Injection and directs operator actions.	
	BOP C	MAINTAINS AFW FLOW \geq 576 GPM WHEN NR LEVEL IN ALL SGs IS LESS THAN 14% OR 34% IF ADVERSE CONTAINMENT CONDITIONS EXIST.	
	RO	Reports that train C safety injection equipment failed to automatically actuate.	<i>Operator actions related to the failure of C train safety injection equipment to actuate are listed under event #5</i>
	RO	Reports that Intermediate Range NI channels 35 and 36 are not trending together after the trip.	<i>Operator actions related to the undercompensation of NI 36 are listed under event #6.</i>
	RO/BOP	Completes the supplementary actions of EO00, Reactor Trip or Safety Injection.	
	SRO (continuous)	Transitions to POP05-EO-EO10, Loss of Reactor or Secondary Coolant and directs operator actions.	
	ALL (continuous)	Monitors Critical Safety Functions upon exiting EO00.	
	SRO	Conducts a crew briefing upon exiting EO00 to cover the following areas: -Previous events -Plant status -Future plans	

	RO/BOP	<p>When directed, performs the following steps in EO10.</p> <ul style="list-style-type: none"> -Resets SI, ESF Load Sequencers, Phase A, and Phase B -Directs Chemical Analysis to sample SGs for activity -Restores instrument air to containment -Places hydrogen analyzers in service -Establishes charging flow 	
	ALL	<p>Determine that SI flow should be terminated based on the following parameters within limits:</p> <ul style="list-style-type: none"> -Subcooling -Secondary heat sink -RCS pressure -Pressurizer level 	
	SRO	<p>Transitions to POP05-EO-ES11, SI Termination and directs operator actions.</p>	
	SRO/RO	<p>Verifies that ESF actuation signals have been reset and instrument air has been restored to the RCB</p>	
	RO	<p>Places Spent Fuel Pool Cooling in service.</p>	
	RO	<p>Stops Low Head and High Head Safety Injection pumps and places in automatic. Monitors the following parameters:</p> <ul style="list-style-type: none"> -RCS subcooling -Pressurizer level 	

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: Backup Event No.: 5			
Event Description: Train C ECW Pump fails to start on Safety Injection signal.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO	Reports that ECW Pump 1C failed to automatically actuate on Safety Injection signal.	
	RO/SRO C	ENSURES A MANUAL START OF ECW PUMP 1C OR SECURES STANDBY DIESEL GENERATOR #13.	
	RO	After ECW Pump 1C is started ensures that the discharge valve opens and flow is supplied to Standby Diesel #13.	<i>Operator actions continue under event #4.</i>

OPERATOR ACTIONS (Cont')

Op-Test No.: 1 Scenario No.: Backup Event No.: 6			
Event Description: Intermediate Range Nuclear Instrument Channel 36 is undercompensated.			
Time	Position	Applicant's Actions or Behavior	Notes
	RO	Reports that Intermediate Range NI channels 35 and 36 are not trending together after the trip.	
	RO	Determines that Source Range NIs did not energize based on NI 36 not decreasing as expected after the reactor trip.	
	SRO/RO C	ENSURES THE SOURCE RANGE MANUAL BLOCK SWITCHES ARE ACTUATED TO ENERGIZE THE SOURCE RANGE NIs.	<i>Operator actions continue under event #4.</i>

CRITICAL TASK SUMMARY

POSITION	EXPECTED RESPONSE	ACCEPTANCE CRITERIA	SAT/ UNSAT
SRO C	ENSURES A MANUAL REACTOR TRIP AND SAFETY INJECTION BASED ON RCS LEAKAGE RATE GREATER THAN THE CAPACITY OF THE REACTOR MAKEUP SYSTEM.	ENSURES A MANUAL REACTOR TRIP AND SAFETY INJECTION IS PERFORMED PRIOR TO AN AUTOMATIC REACTOR TRIP SIGNAL	
BOP C	MAINTAINS AFW FLOW ≥ 576 GPM WHEN NR LEVEL IN ALL SGs IS LESS THAN 14% OR 34% IF ADVERSE CONTAINMENT CONDITIONS EXIST.	AFW FLOW IS MAINTAINED ≥ 576 UNTIL AT LEAST ONE SG NARROW RANGE LEVEL IS GREATER THAN 14% OR 34% IF ADVERSE CONTAINMENT CONDITIONS EXIST.	
SRO/RO C	ENSURES A MANUAL START OF ECW PUMP 1C OR SECURES STANDBY DIESEL GENERATOR #13.	MANUALLY START ECW PUMP 1C OR SECURE STANDBY DIESEL GENERATOR 13 PRIOR TO STANDBY DIESEL GENERATOR TRIPPING OR EXITING EO00.	
SRO/RO C	ENSURES THE SOURCE RANGE MANUAL BLOCK SWITCHES ARE ACTUATED TO ENERGIZE THE SOURCE RANGE NIs.	ENERGIZE THE SOURCE RANGE NIs WITHIN 15 MINUTES OF REACHING P-10 SETPOINT.	

NOTE: Acceptance Criteria MUST be evaluated as Satisfactory (S) or Unsatisfactory (U).

TURNOVER INFORMATION

100% power, 8,000 MWD/MTU.

The Unit is at 100% power. Upon taking the shift the crew is to Start Centrifugal Charging Pump 1B and secure Centrifugal Charging Pump 1A to allow to allow Engineering to take vibration measurements on Centrifugal Charging Pump 1B.

CHIEF EXAMINER SCENARIO COMMENTS - SOUTH TEXAS 6/1/98 EXAM

Legend: D - Difficulty on 1 to 5 scale, 5 being the most difficult

OPERATING TEST 1

SCENARIO 1 D - 3

No comments.

SCENARIO 2 D - 3

Under CRITICAL PARAMETERS, also monitor Tave. **Resolution: Incorporated.**

SCENARIO 3 D - 3

No comments.

BACKUP SCENARIO D - 2

No comments.

LICENSEE
COMMENT
RESOLUTION