Facility: __South Texas Project__	Date of Examination: __9/17/01__
Examination Level: RO	Operating Test Number: ___1___

	Administrative Topic/Subject Description	Describe method of evaluation: ONE Administrative JPM
A.1	Conduct of Operations	K/A: 2.1.20 [4.3] Ability to execute procedure steps
		Title: (A1) Perform QPTR Calculation
	Conduct of Operations	K/A: 2.1.25 [2.8] Ability to obtain and interpret references
		Title: (A2) Determine Boration Required to Achieve Desired Shutdown Margin
A.2	Equipment Control	K/A: 2.2.12 [3.0] Knowledge of surveillance procedures
		Title: (A3) Review Completed Surveillance
A.3	Radiation Control	K/A: 2.3.10 [2.9] Ability to guard against personnel exposure
		Title: (A4) Determine Radiological Requirements to Enter a High Rad Area
A.4	Emergency Plan	K/A: 2.4.39 [3.3] Knowledge of RO's responsibilities in emergency plan implementation
		Title: (A5) Make the Necessary Communications for a Given Accident

Facility: South Texas Project   Date of Examination: 9/17/01

Exam Level: SRO(U)   Operating Test No.:   1

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. AC/ (S1) Restore Offsite Power to ESF Bus	S, D, L	VI
b. ECCS/ (S2) Transfer to Hot Leg Recirculation	S, D, L, E	III

B.2 Facility Walk-Through

a. Liquid Waste/ (P1) Perform Local Channel Check of RT-8038, Liquid Waste Effluent Monitor	P, D, R, A	IX
b. CRDS/ (P2) Locally Trip the Reactor	P, D, A	I
c. Boric Acid/ (P3) Secure Alternate Boration	P, N, R, L	II

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, (P)lant, (E)SF

Note: The following simulator JPMs are intended to be performed simultaneously
- S1 and S2

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

Source:
New __X__   Bank - Significantly Modified _____   Bank - Initial Condition Change _____

Examiners: _____   Operators: SRO-
                                                           RO-
                                                           BOP-

See Simulator Crew Assignment Table to determine Examiner/Operator assignments. This scenario will be administered to all applicants on a single day.

Initial Conditions: 48% power, 9,000 MWD/MTU. On hold for feedpump repair.
Steam Generator Feedpump #11 is OOS for maintenance.

Turnover: Swap Feedwater Booster Pumps for pump vibration inspection and maintain current power.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	BOP (N) SRO (N)	Swap Feedwater Booster Pumps
2	05-12-03	BOP (I) SRO (I)	Steam Generator level transmitter LT-539 fails low
3	02-26-02	RO (I) SRO (I)	Loop 1B T-Cold RTD TT-420B fails high
4	07-04-03	RO (R) BOP (C) SRO (C)	Steam Generator Feedpump #13 trips, Startup Feedpump does not/will not start requiring a manual load reduction.
5	02-12-01 01-12-02	ALL (M)	Pressurizer steam space break. ATWS - Reactor fails to trip from the control room.
6	08-02-01	BOP (C) SRO (C)	Turbine driven auxiliary feedwater pump overspeeds upon start.
7	04-13-02	RO (C) SRO (C)	High head safety injection pump 1B trips (following verification).

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

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

Source:
New _____   Bank - Significantly Modified   _____   Bank - Initial Condition Change   __X__

Examiners: _____   Operators: SRO-
                                                          RO-
                                                          BOP-

See Simulator Crew Assignment Table to determine Examiner/Operator assignments. This scenario will be administered to all applicants on a single day.

Initial Conditions: 75% power, 9,000 MWD/MTU, power increase in progress.
Train 'A' Control Room HVAC and Feedwater Booster Pump #13 are OOS for maintenance.

Turnover: Load Steam Generator Feedpump #13 and continue power increase to 100%.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	BOP (N) SRO (N)	Load Steam Generator Feedpump #13
2	N/A	RO (R)	Increase power to 100%
3	05-17-03	BOP (I) SRO (I)	Steam Generator 1C PORV pressure transmitter fails high.
4	50-R3-02	RO (I) SRO (I)	Power Range Channel N42 control Power failure.
5	08-23-01	BOP (C) SRO (C)	Condensate Pump #11 trips.
6	02-01-03	ALL (M)	Large Break LOCA on Loop C Cold Leg.
7	01-12-4B bmp005	RO (C) SRO (C)	Containment Isolation Phase 'A' Train 'B' automatic failure. CV-MOV-0023, Letdown CIV, Train 'A' fails to close.

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

Facility: South Texas Project   **Scenario No.:** 3   **Op-Test No.:** 1

Source:

New _____   Bank - Significantly Modified _____   Bank - Initial Condition Change __X__

Examiners: _____   Operators: SRO-
                                                                RO-
                                                                BOP-

See Simulator Crew Assignment Table to determine Examiner/Operator assignments. This scenario will be administered to all applicants on a single day.

Initial Conditions: 27% power with a plant startup in progress.
ESF Diesel Generator #13 is OOS for maintenance.

Turnover: Continue with plant startup towards 100% power.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	RO (R)	Load increase towards 100% power.
2	02-19-03	RO (I) SRO (I)	Pressurizer pressure controlling channel (PT-457) fails low.
3	05-11-04	BOP (C) SRO (C)	SG D steam flow channel fails low.
4	03-23-05	RO (C) SRO (C)	RCP 1C #1 seal failure (ramp over 5 minutes)
5	05-02-01	ALL (M)	Steam break in containment on SG 1A after manual reactor trip from RCP seal leakoff trip setpoint exceeded.
6	04-16-01	RO (C) SRO (C)	1A Containment Spray Pump trips (following verification).

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

Facility: South Texas Project   **Scenario No.:** Backup (spare)   Op-Test No.: 1

Source:

New _____   Bank - Significantly Modified _____   Bank - Initial Condition Change __X__

Examiners: _____   Operators: SRO-
                                                                                  RO-
                                                                                  BOP-

See Simulator Crew Assignment Table to determine Examiner/Operator assignments. This scenario will be administered to all applicants on a single day.

Initial Conditions: 100% power
Circulating Water Pump #14 is OOS for maintenance.

Turnover: Swap Centrifugal Charging Pumps for upcoming maintenance.
Reduce power to 90% to remove a Steam Generator Feedpump from service.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	RO (N) SRO (N)	Swap Centrifugal Charging Pumps.
2	N/A	RO (R)	Reduce power to 90%.
3	03-09-02	RO (C) SRO (C)	1B Centrifugal Charging Pump trips.
4	08-15-01	BOP (I) SRO (I)	1A Steam Generator controlling feedwater flow channel fails low.
5	50-BM-01	RO (I) SRO (I)	VCT level transmitter LT-113 fails high.
6	05-03-02	ALL (M)	1B Steam Generator Tube Rupture (~700 gpm ramped over 10 minutes).
7	05-04-02	BOP (C) SRO (C)	Steam Generator 1B Main Steam Safety Valve fails open when actions are taken to isolate the steam generator during the tube rupture.

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

Scenario Overviews

Overviews of each scenario are described below to provide additional information beyond that in the outline to help answer questions concerning scenario detail.

Scenario #1

The scenario starts at 48% power, holding for repair of SGFP #11. The crew will start by swapping Feedwater Booster Pumps. Once the booster pumps are swapped, SG 1C Level Channel LT-539 fails low. After actions are taken and Tech Specs addressed for LT-539, Loop 1B T-Cold RTD TT-420B fails high. After actions are taken and Tech Specs addressed for TT-420B, SGFP #13 trips. Since the Startup SGFP does not, or will not start, a manual power reduction is required to match steam generator steam and feedwater flows (with rod control in manual due to the temperature channel failure). Once the plant is stabilized, a small pressurizer steam space break occurs requiring a manual reactor trip and Safety Injection. Upon attempts to trip the Reactor from the Control Room the crew discovers that an ATWS condition exists (with a loss of Main Feedwater once the automatic SI actuation occurs). The crew transitions from EO00 to FRS1 and performs actions to mitigate the ATWS. When the turbine driven auxiliary feedpump gets a start signal, the pump overspeeds which requires the dispatching of a plant operator to locally reset the turbine. Following "Verification of SI Equipment Operation" Addendum in FRS1, HHSI Pump 1B will trip. The scenario will be terminated when the crew completes the functional restoration in FRS1 and transitions back to EO00.

Procedural Flowpath

- Normal Operating Procedure 0POP02-FW-0001 to swap Feedwater Booster Pumps
- Off-Normal Operating Procedure 0POP04-FW-0001 to address LT-539 failure
- Off-Normal Operating Procedure 0POP04-RP-0004 to address TT-420B failure
- Off-Normal operating Procedure 0POP04-FW-0002 to address the SGFP trip
- Emergency Operating Procedures EO00, FRS1 following PZR steam space break

ES-301-4 Attribute Breakdown

- Total Malfunctions - 8 - Events* 2(1), 3(1), 4(2), 5(2), 6(1), 7(1)
- Malfunctions after EOP entry - 2 - Events 6, 7
- Abnormal Events - 3 - Events 2, 3, 4
- Major Transients - 1 - Event 5
- EOPs entered/requiring substantive actions - 1 - FRS1
- EOP contingencies requiring substantive actions - 1- FRS1

Note: Number in parentheses indicates the number of malfunctions within that event.

South Texas Project 9/01 Exam

APPLICANT: U1   OPERATING TEST NO.:1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1				
	Normal	1				
	Instrument/ Component	4				
	Major	1				
SRO-I — As RO	Reactivity	1				
	Normal	0				
	Instrument/ Component	2				
	Major	1				
SRO-I — As SRO	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				
SRO-U	Reactivity	0				
	Normal	1	1	1		
	Instrument/ Component	2	2, 3, 4, 6, 7	3, 4, 5, 7		
	Major	1	5	6		

Instructions: (1)   Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

                     (2)   Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

                     (3)   Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author: _____

Chief Examiner: _____

South Texas Project 9/01 Exam
Operating Test No.: 1

Competencies	Applicant **U1** SRO-U				Applicant **U2** SRO-U				Applicant **U3** SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4
Understand and Interpret Annunciators and Alarms	2	4			2	4			2	3		
Diagnose Events and Conditions	5	4			5	4			5	3		
Understand Plant and System Response	3	6			3	6			3	5		
Comply With and Use Procedures (1)	3	4			3	4			3	5		
Operate Control Boards (2)										5		
Communicate and Interact With the Crew	5	6			5	6			5	6		
Demonstrate Supervisory Ability (3)	5	6			5	6			5			
Comply With and Use Tech. Specs. (3)	2	3			2	3			2			

Notes:

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

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: _____

Chief Examiner: _____

Simulator Crew Assignment Table

Simulator Crew Assignments			
Crew	Candidates		
A	U1	R1	R3
B	U2	R2	R4
C	U3	I1	R5
D	I2	I3	R6

Crew A/B Scenario Rotation Sequence			
Crew A	Crew B	Scenario 1	Scenario 2
U1 (E2)	U2 (E3)	SRO	SRO
R1 (E1)	R2 (E2)	RO	BOP
R3 (E3)	R4 (E4)	BOP	RO

Crew C Scenario Rotation Sequence		
Crew C	Scenario 1	Scenario 2
U3 (E4)	SRO	BOP
I1 (E3)	RO	SRO
R5 (E1)	BOP	RO

Crew D Scenario Rotation Sequence			
Crew D	Scenario 1	Scenario 2	Scenario 3
I2 (E4)	SRO	RO	SRO
I3 (E1)	RO	SRO	BOP
R6 (E2)	BOP	BOP	RO

Operating Exam 10CFR55.45 Item Cross-Reference

The following cross-reference shows a <u>sampling</u> of "10CFR55.45 Operating Tests (a) *Content*" items addressed throughout the Operating Exam.

(1)   Admin JPM A2, Determine Boration Required to Achieve Desired Shutdown Margin

(2)   Scenario 1, Event 4, Steam Generator Feedpump #13 trips, Startup Feedpump does
                        not/will not start requiring a manual load reduction
        Scenario 2, Event 2, Increase power to 100%
        Scenario 3, Event 2, Load increase towards 100%

(3)   Walkthrough JPM S4, Respond to a Radiation Monitoring Alarm
        Walkthrough JPM S6, Restore Main Feedwater Following Reactor Trip

(4)   All scenarios involve instrumentation failures requiring diagnosis of indications

(5)   All scenarios involve challenges to safely control the plant

(6)   All scenarios contain normal, abnormal and emergency operating situations

(7)   Walkthrough JPM S6, Restore Main Feedwater Following Reactor Trip
        Walkthrough JPM S2, Transfer to Hot Leg Recirculation

(8)   Walkthrough JPM P1, Perform Local Channel Check of RT-8038, Liquid Waste Effluent
                        Monitor
        Walkthrough JPM S4, Respond to a Radiation Monitoring Alarm

(9)   Walkthrough JPM P1, Perform Local Channel Check of RT-8038, Liquid Waste Effluent
        Monitor

(10)   Walkthrough JPM P3 requires an RCA entry and application of radiation control
        procedures

(11)   Admin JPM A5, Make the Necessary Communications for a Given Accident
        Admin JPM A8, Declare Emergency Action Level

(12)   Admin JPM A1, A2 and A5 demonstrate the ability to perform RO job functions
        Admin JPM A6, A7, and A8 demonstrate the ability to perform SRO job functions

(13)   All scenarios demonstrate the ability to function within the control room team

Probabilistic Risk Assessment Input Information

The following South Texas Project Probabilistic Risk Assessment (STP PRA) reports were reviewed to ensure that Events, Systems and Operator Actions which are important to plant safety or which contribute to driving events to a lower risk, are sampled throughout this examination:

- *Top Event Sequences* - Identifies events which significantly contribute to core damage.
- *Most Risk Significant Systems* - Identifies systems using a combination of Risk Achievement Worth (RAW) and Fussell-Vesely Importance.
- *Important Operator Actions* - Identifies human interactions in the Individual Plant Examinations (IPE) which have a measurable effect on core damage frequency.

The cross-reference below lists some PRA items from these reports and links the items to specific areas within the examination. The cross-reference is not an attempt to identify all items from these reports nor all areas where these items are addressed. It simply shows how PRA items, suitable for testing, are addressed throughout the examination on a sampling basis.

PRA Item Description	Related Examination Areas
Recover Turbine Driven Aux Feed Pump (important operator action)	Scenario #1 contains a failure of the Turbine Driven Aux Feed Pump for which actions must be taken to recover
Small LOCA (top event sequence)	Scenario #1 contains a small steam break on the Reactor Coolant System Pressurizer
Large LOCA (top event sequence)	Scenario #2 contains a design basis large break LOCA
Reactor Protection System (one of the most risk significant systems)	JPM P2 requires the local tripping of the reactor trip breakers
Failure to recovery of a diesel generator or off-site power (important operator action)	JPM S1 gives the applicants an opportunity to restore offsite power to an ESF bus
Chemical and Volume Control System (one of the most risk significant systems)	JPM P3 provides an opportunity to operate the CVCS by locally securing alternate boration
Safety Injection System (one of the most risk significant systems)	Scenario #1 contains the loss of a High Head Safety Injection Pump following a small break LOCA
Reactor Coolant System (one of the most risk significant systems)	Scenario #3 provides a challenge to the reactor coolant system in the form of a Reactor Coolant Pump seal failure for which the crew must take manual action

South Texas Project 9/01 Exam
Operating Test No.: 1

Competencies	Applicant I1 SRO-I				Applicant I2 SRO-I				Applicant I3 SRO-I			
	SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4
Understand and Interpret Annunciators and Alarms	3	4			2	4	2		3	4	3	
Diagnose Events and Conditions	3	4			5	4	5		3	4	3	
Understand Plant and System Response	3	6			3	6	2		3	6	5	
Comply With and Use Procedures (1)	4	4			3	2	2		4	4	3	
Operate Control Boards (2)	4					2			4		5	
Communicate and Interact With the Crew	5	6			5	6	5		5	6	5	
Demonstrate Supervisory Ability (3)		6			5		5			6		
Comply With and Use Tech. Specs. (3)		3			2		2			3		

Notes:

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

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: _____

Chief Examiner: _____

South Texas Project 9/01 Exam
Operating Test No.: 1

Competencies	Applicant **R1** RO SCENARIO				Applicant **R2** RO SCENARIO				Applicant **R3** RO SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4
Understand and Interpret Annunciators and Alarms	3	3			3	3			2	4		
Diagnose Events and Conditions	3	3			3	3			2	4		
Understand Plant and System Response	3	5			3	5			4	6		
Comply With and Use Procedures (1)	4	5			4	5			1	2		
Operate Control Boards (2)	4	5			4	5			1	2		
Communicate and Interact With the Crew	5	6			5	6			5	6		
Demonstrate Supervisory Ability (3)												
Comply With and Use Tech. Specs. (3)												

Notes:

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

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: _____

Chief Examiner: _____

South Texas Project 9/01 Exam
Operating Test No.: 1

Competencies	Applicant **R4** RO SCENARIO				Applicant **R5** RO SCENARIO				Applicant **R6** RO SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4
Understand and Interpret Annunciators and Alarms	2	4			2	4			2	3	2	
Diagnose Events and Conditions	2	4			2	4			2	3	4	
Understand Plant and System Response	4	6			4	6			4	5	2	
Comply With and Use Procedures (1)	1	2			1	2			1	5	1	
Operate Control Boards (2)	1	2			1	2			1	5	2	
Communicate and Interact With the Crew	5	6			5	6			5	6	5	
Demonstrate Supervisory Ability (3)												
Comply With and Use Tech. Specs. (3)												

Notes:

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

Instructions:

Circle the applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Author: _____

Chief Examiner: _____

South Texas Project 9/01 Exam

APPLICANT: U2   OPERATING TEST NO.:1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1				
	Normal	1				
	Instrument/ Component	4				
	Major	1				

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
SRO-I			1	2	3	4
As RO	Reactivity	1				
	Normal	0				
	Instrument/ Component	2				
	Major	1				
As SRO	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
SRO-U	Reactivity	0				
	Normal	1	1	1		
	Instrument/ Component	2	2, 3, 4, 6, 7	3, 4, 5, 7		
	Major	1	5	6		

Instructions: (1)   Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

                (2)   Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

                (3)   Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author: _____

Chief Examiner: _____

South Texas Project 9/01 Exam

APPLICANT: U3   OPERATING TEST NO.:1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1				
	Normal	1				
	Instrument/ Component	4				
	Major	1				

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
As RO	Reactivity	1				
	Normal	0				
	Instrument/ Component	2				
	Major	1				
SRO-I						
As SRO	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
SRO-U	Reactivity	0				
	Normal	1	1	1		
	Instrument/ Component	2	2, 3, 4, 6, 7	3, 5		
	Major	1	5	6		

Instructions: (1)   Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

                 (2)   Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

                 (3)   Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author: _____

Chief Examiner: _____

South Texas Project 9/01 Exam

APPLICANT: I1   OPERATING TEST NO.:1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1				
	Normal	1				
	Instrument/ Component	4				
	Major	1				
As RO	Reactivity	1	4			
	Normal	0				
	Instrument/ Component	2	3, 7			
	Major	1	5			
SRO-I						
As SRO	Reactivity	0				
	Normal	1		1		
	Instrument/ Component	2		3, 4, 5, 7		
	Major	1		6		
SRO-U	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Instructions: (1)   Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

                (2)   Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

                (3)   Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author: _____

Chief Examiner: _____

South Texas Project 9/01 Exam

APPLICANT: I2   OPERATING TEST NO.:1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1				
	Normal	1				
	Instrument/ Component	4				
	Major	1				
As RO	Reactivity	1		2		
	Normal	0				
	Instrument/ Component	2		4, 7		
	Major	1		6		
SRO-I						
As SRO	Reactivity	0				
	Normal	1	1			
	Instrument/ Component	2	2, 3, 4, 6, 7		2, 3, 4, 6	
	Major	1	5		5	
SRO-U	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Instructions:

(1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

(2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

(3) Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author: _____

Chief Examiner: _____

South Texas Project 9/01 Exam

APPLICANT:l3   OPERATING TEST NO.:1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1				
	Normal	1				
	Instrument/ Component	4				
	Major	1				

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
As RO	Reactivity	1	4			
	Normal	0				
	Instrument/ Component	2	3, 7		3	
	Major	1	5		5	
SRO-I						
As SRO	Reactivity	0				
	Normal	1		1		
	Instrument/ Component	2		3, 4, 5, 7		
	Major	1		6		

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
SRO-U	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Instructions: (1)   Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

(2)   Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

(3)   Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author: _____

Chief Examiner: _____

South Texas Project 9/01 Exam

APPLICANT: R1   OPERATING TEST NO.:1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1	4			
	Normal	1		1		
	Instrument/ Component	4	3, 7	3, 5		
	Major	1	5	6		

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
As RO	Reactivity	1				
	Normal	0				
	Instrument/ Component	2				
	Major	1				
SRO-I						
As SRO	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
SRO-U	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Instructions: (1)   Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

               (2)   Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

               (3)   Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author: _____

Chief Examiner: _____

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APPLICANT: R2   OPERATING TEST NO.:1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1	4			
	Normal	1		1		
	Instrument/ Component	4	3, 7	3, 5		
	Major	1	5	6		

As RO	Reactivity	1				
	Normal	0				
	Instrument/ Component	2				
	Major	1				
SRO-I						
As SRO	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

SRO-U	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Instructions: (1)   Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

(2)   Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

(3)   Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

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APPLICANT: R3   OPERATING TEST NO.:1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1		2		
	Normal	1	1			
	Instrument/ Component	4	2, 4, 6	4, 7		
	Major	1	5	6		

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
As RO	Reactivity	1				
	Normal	0				
	Instrument/ Component	2				
	Major	1				
SRO-I						
As SRO	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
SRO-U	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Instructions: (1)   Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

                  (2)   Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

                  (3)   Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

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South Texas Project 9/01 Exam

APPLICANT: R4   OPERATING TEST NO.:1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1		2		
	Normal	1	1			
	Instrument/ Component	4	2, 4, 6	4, 7		
	Major	1	5	6		

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
As RO	Reactivity	1				
	Normal	0				
	Instrument/ Component	2				
	Major	1				
SRO-I						
As SRO	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
SRO-U	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Instructions: (1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

(2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

(3) Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

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South Texas Project 9/01 Exam

APPLICANT: R5   OPERATING TEST NO.:1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1		2		
	Normal	1	1			
	Instrument/ Component	4	2, 4, 6	4, 7		
	Major	1	5	6		

	Evolution Type	Minimum Number	1	2	3	4
As RO	Reactivity	1				
	Normal	0				
	Instrument/ Component	2				
	Major	1				
SRO-I						
As SRO	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

	Evolution Type	Minimum Number	1	2	3	4
SRO-U	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Instructions: (1)   Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

(2)   Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

(3)   Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

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South Texas Project 9/01 Exam

APPLICANT: R6   OPERATING TEST NO.:1

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1			1	
	Normal	1	1	1		
	Instrument/ Component	4	2, 4, 6	3, 5	2, 4, 6	
	Major	1	5	6	5	

SRO-I — As RO	Reactivity	1				
	Normal	0				
	Instrument/ Component	2				
	Major	1				
SRO-I — As SRO	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

SRO-U	Reactivity	0				
	Normal	1				
	Instrument/ Component	2				
	Major	1				

Instructions: (1)   Enter the operating test number and Form ES-D-1 event numbers for each evolution type.

                 (2)   Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

                 (3)   Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

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Scenario #2

The scenario starts at 75% power with a power increase in progress and Train A Control Room HVAC and Feedwater Booster Pump #13 are out of service. The crew will start by loading SGFP #13 and continue the power increase per turnover direction. Once reactor power is sufficiently increased to clearly observe a reactivity manipulation, SG 1C PORV Pressure Transmitter fails high. After actions are taken to close the PORV and address Tech Specs, a control power failure occurs on Power Range NI 42. After actions are taken and Tech Specs addressed for NI 42, Condensate Pump #11 trips. When actions have been taken to place the standby condensate pump in service, a Large Break LOCA occurs. A failure of automatic Containment Isolation Phase A for Train B occurs coincidentally with a failure of CV-MOV-0023 (Letdown CIV Train A) to close. The crew must manually actuate Containment Isolation Phase A to ensure containment integrity is met on the letdown line penetration. The crew will mitigate the Large Break LOCA using EO00 and EO10. The crew should make a brief transition to FRP1 and exit at the first step based on LHSI Pump flow. The crew should enter FRZ1 based on increasing containment pressure. The scenario will be terminated when transfer to cold leg recirculation is completed in ES13.

Procedural Flowpath

- Normal Operating Procedure 0POP02-FW-0002 to load SGFP #13
- Normal Operating Procedure 0POP03-ZG-0005 to continue power increase
- Annunciator Response Procedure 0POP09-AN-06M3-A1 to address SG PORV failure
- Off-Normal Operating Procedure 0POP04-NI-0001 to address PR NI 42 failure
- Annunciator Response Procedure 0POP09-AN-09M1-A1 to address condensate pump trip
- Emergency Operating Procedures* EO00, EO10, FRP1, FRZ1, ES13

Note: Sequence of EOPs will be dependent upon crew response times.

ES-301-4 Attribute Breakdown

- Total Malfunctions - 6 - Events** 3(1), 4(1), 5(1), 6(1), 7(2)
- Malfunctions after EOP entry - 2 - Event 7
- Abnormal Events - 3 - Events 3, 4, 5
- Major Transients - 1 - Event 6
- EOPs entered/requiring substantive actions - 3 - EO10, FRZ1, ES13
- EOP contingencies requiring substantive actions - 1- FRZ1

**Note: Number in parentheses indicates the number of malfunctions within that event.*

Scenario #3

The scenario starts at 27% power with a plant startup in progress and ESF Diesel Generator #13 out of service. The crew will start by increasing power towards 100%. Once reactor power is increased sufficiently to clearly observe a reactivity manipulation, pressurizer pressure channel PT-457 fails low. After actions are taken and Tech Specs addressed for PT-457, SG D controlling steam flow channel fails low. After actions are taken and Tech Specs are addressed for SG D steam flow channel, a #1 seal failure on RCP 1C is ramped in which eventually requires a manual reactor trip. After the reactor trip, a large steam break occurs inside the containment. The crew will mitigate the steam break using EO00 and EO20. Following the equipment verification in EO00, Containment Spray pump 1A will trip. A transition to FRZ1 will be required due to high containment pressure. The scenario will be terminated when the safety injection pumps are secured in ES11.

Procedural Flowpath

- Normal Operating Procedure 0POP03-ZG-0005 to continue power increase
- Off-Normal Operating Procedure 0POP04-RP-0001 To address PT-457 failure
- Off-Normal Operating Procedure 0POP04-FW-0001 to address SG D steam flow failure
- Off-Normal Operating Procedure 0POP04-RC-0002 to address RCP 1C seal failure
- Emergency Operating Procedures EO00, FRZ1, EO20, ES11

ES-301-4 Attribute Breakdown

- Total Malfunctions - 5 - Events 2, 3, 4, 5, 6
- Malfunctions after EOP entry - 1 - Event 6
- Abnormal Events - 3 - Events 2, 3, 4
- Major Transients - 1 - Event 5
- EOPs entered/requiring substantive actions - 3 - FRZ1, EO20, ES11
- EOP contingencies requiring substantive actions - 1- FRZ1

The following Backup Scenario does not appear on Form ES-301-5, Transient and Event Checklist or ES-301-6, Competencies Checklist as the Applicant Type is indeterminate. However, the scenario was reviewed to ensure that all required evolutions, competencies and attributes are satisfied.

Backup Scenario (Spare)

The scenario starts at 100% power with Circulating Water Pump #14 out of service. The crew will start by swapping centrifugal charging pumps and then start a power reduction per turnover direction. Once reactor power is sufficiently reduced to clearly observe a reactivity manipulation, Charging Pump 1B (the one that was just started) trips. After actions are taken to restore a charging pump to service and address Tech Specs, SG A controlling feedwater flow channel fails low. After actions are taken to address the failed feedwater flow channel, VCT level transmitter LT-0113 fails high. After actions are taken to address the failed VCT level transmitter, a steam generator tube rupture occurs. The crew will mitigate the steam generator tube rupture using EO00 and EO30. When actions are taken to isolate the ruptured steam generator, a safety valve on the ruptured steam generator will fail open causing a transition to EC31. The scenario will be terminated when high head safety injection pumps are secured in EC31.

Procedural Flowpath

- Normal Operating Procedure 0POP02-CV-0004 to swap charging pumps
- Normal Operating Procedure 0POP03-ZG-0008 to reduce power
- Annunciator Response Procedure 0POP09-AN-04M8-F3 to address tripped charging pump
- Off-Normal Operating Procedure 0POP04-FW-0001 to address failed feedwater flow channel
- Annunciator Response Procedure 0POP09-AN-04M8-E2 to address failed VCT level channel
- Emergency Operating Procedures EO00, EO30, EC31

ES-301-4 Attribute Breakdown

- Total Malfunctions - 5 - Events 3, 4, 5, 6, 7
- Malfunctions after EOP entry - 1 - Event 7
- Abnormal Events - 3 - Events 3, 4, 5
- Major Transients - 1 - Event 6
- EOPs entered/requiring substantive actions - 2 - EO30, EC31
- EOP contingencies requiring substantive actions - 1- EC31

Facility: South Texas Project   Date of Examination: 9/17/01

Exam Level: RO / SRO(I)   Operating Test No.:   1

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. AC/ (S1) Restore Offsite Power to ESF Bus	S, D, L	VI
b. ECCS/ (S2) Transfer to Hot Leg Recirculation	S, D, L, E	III
c. CS/ (S3) Breaker Functionality Test	S, D	V
d. RMS/ (S4) Respond to a Radiation Monitoring Alarm	S, D, A	VIII
e. ECCS/ (S5) Fill an Accumulator	S, D, L, E	III
f. FW/ (S6) Restore Main Feedwater Following Reactor Trip	S, N, L, A	IV
g. CS/ (C1) Determine/Establish CS Pump Requirements	C, D, L	V

B.2 Facility Walk-Through

	Type Code*	Safety Function
a. Liquid Waste/ (P1) Perform Local Channel Check of RT-8038, Liquid Waste Effluent Monitor	P, D, R, A	IX
b. CRDS/ (P2) Locally Trip the Reactor	P, D, A	I
c. Boric Acid/ (P3) Secure Alternate Boration	P, N, R, L	II

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, (P)lant, (E)SF

Note: The following simulator JPMs are intended to be performed simultaneously
- S1 and S2
- S3 and S4
- S5 and S6

Facility: South Texas Project	Date of Examination: 9/17/01
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: 2.1.7 [4.4] Ability to evaluate plant performance and make operational judgements based on operating characteristics, reactor behavior, and instrument response
		Title: (A6) Review RCS Inventory and Determine Tech Spec applicability
	Conduct of Operations	K/A: 2.1.33 [4.0] Ability to recognize indications for system operating parameters which are entry-level conditions for Technical Specifications
		Title: (A7) Review Control Room Logs
A.2	Equipment Control	K/A: 2.2.12 [3.4] Knowledge of Surveillance Procedures
		Title: (A8) Review Completed Surveillance
A.3	Radiation Control	K/A: 2.3.10 [3.3] Ability to gaurd against personnel exposure
		Title: (A4) Determine Radiological Requirements to Enter a High Rad Area
A.4	Emergency Plan	K/A: 2.4.41 [4.1] Knowledge of emergency action level thresholds and classifications
		Title: (A9) Declare Emergency Action Level