OPERATING TEST NO.: 2

Competencies	Applicant #1 RO/SRO-I/SRO-U			Applicant #2 RO/SRO-I/SRO-U			Applicant #3 BOP/SRO-I/SRO-U		
	SCENARIO			SCENARIO			SCENARIO		
	2.1	2.2	2.3	2.1	2.2	2.3	2.1	2.2	2.3
Understand and Interpret Annunciators and Alarms	1-8	3-6, 8-10	1, 3-9	2, 3, 6, 8, 9	3, 5, 6, 8-10	1, 5-7	1, 5, 7, 8	3, 4, 8-10	3, 4, 7-9
Diagnose Events and Conditions	2, 3, 5-10	3-5, 8-10	3-9	2, 3, 6, 8-10	5, 6, 9, 10	5-7	5, 7-10	3, 4, 8-10	3, 4, 7-9
Understand Plant and System Response	1-10	1-10	1-9	2, 3, 6, 8-10	1, 5-10	1, 5-7	1, 5, 7-10	2-4, 8-10	2-4, 7-9
Comply With and Use Procedures (1)	1-10	1-10	1-9	2-4, 6, 8, 9	1, 5-10	1, 5-7	1, 5, 7-10	2-4, 8-10	2-4, 7-9
Operate Control Boards (2)	N/A	N/A	N/A	2-4, 6, 8, 9	1, 5-10	1, 5-7	1, 5, 7-10	2-4, 8-10	2-4, 7-9
Communicate and Interact With the Crew	1-10	1-10	1-9	2, 3, 6-10	1, 5-10	1, 5-8	1, 5, 7-10	2-4, 8-10	2-4, 7-9
Demonstrate Supervisory Ability (3)	2, 3, 5-10	3-10	3-9	N/A	N/A	N/A	N/A	N/A	N/A
Comply With and Use Tech. Specs. (3)	3	4, 5, 6	6	N/A	N/A	N/A	N/A	N/A	N/A

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: _____ 6-9-00

Chief Examiner: _____ 6/19/2000

Facility: *LaSalle Station* **Scenario No.:** *ESG 2.1* **Op Test No.:** *2*

Examiners: _____ **Operators:** _____

_____ _____

_____ _____

Initial Conditions:

- *Unit 1 is operating at 85% reactor power with flow control line at 105%.*
- *TLO Temperature controller in manual.*
- *1A GC pump is OOS for alignment.*
- *HPCS is OOS to megger and inspect motor.*
- *Online Safety level is green.*
- *Unit 2 is operating at 100% power.*

Turnover:

- *Unit 1 is in a Division 3 work week.*
- *LOS-DG-M(3) is scheduled to be performed this shift.*

Event No.	Malf. No.	Event Type*		Event Description
1	N/A	N	BOP SRO	Monthly operability surveillance for EDG.
2	MRD279	I	RO SRO	Output for the control rod drive (CRD) flow controller fails high.
3	MRD070	C	RO SRO	Control rod drift.
4	N/A	R	RO SRO	Reduce reactor power by 75 MWe due to CRD drift.
5	MNB101	I	BOP SRO	Main generator hydrogen high temperature.
6	MCF081	I	RO SRO	1B TDRFP flow instrument fails downscale.
7	CAEP	I	BOP SRO	RCIC fails after hi level trip (1E51-F045 trips).
8	MCF033	M	ALL	Large break in feedwater line (steam tunnel).
9	MES025	C	BOP SRO	RWCU system fails to isolate on low RPV level.
10	MNB038	C	BOP SRO	SRV "U" will fail to close (setpoint drift).

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

NARRATIVE SUMMARY

Event(s)	Description
2.1.1	Once the crew has accepted the unit, the SRO should direct the BOP to complete the monthly operability surveillance for the EDG. The BOP will need to synchronize the EDG to the grid and step load it to 2600 KW.
2.1.2, 3, 4	After the DG has been loaded, the output for the control rod drive (CRD) flow controller fails high. Moments later, a control rod begins to drift in from high cooling water pressure/flow. The actual sequence of actions may vary at this point. The RO may immediately recognize the flow controller failure and begin to take action or may not notice until after the rod drift begins. In either case, once the rod begins to drift, actions should be prioritized to mitigate the consequences of the drifting rod. The immediate action should be to determine which rod is drifting, watch for any additional drifting rods (which requires a scram), and refer to LOA-RD-101 for guidance. Subsequently, the procedure will have the operators command an insert signal to position 00 and reduce reactor power by 75 MWe. Next, the operators will need to respond to the failed flow controller output by placing the controller in manual and returning flow to normal in accordance with the same LOA.
2.1.5	Once the major actions of the previous events have been completed, a main generator high hydrogen temperature alarm will come in. The crew will follow the annunciator and abnormal operating procedures and dispatch an EO to the local skid. Upon investigation, they will discover that the hydrogen temperature controller has failed. The BOP operator will have to take manual control of the temperature controller to clear the alarm.
2.1.6, 7	After main generator temperature is under control, the 1B TDRFP flow instrument will fail downscale. As a result, the TDRFP goes to maximum speed. The reactor fills to 55.5" which trips the feed pumps, the main turbine and sends a high level isolation signal to the RCIC steam admission valve. The trip of the main turbine results in a reactor scram. When level drops below 55.5" and RCIC starts (auto start at –50" or manual start), the breaker for the RCIC turbine steam inlet valve, 1E51-F045, will trip. This prevents RCIC from running.
2.1.8, 9, 10	Shortly after the trip of the feedwater pumps, a large break in one of the feedwater lines occurs in the main steam tunnel area of secondary containment. The RWCU system isolation valves will fail to close on the low RPV level signal. The crew will have to recognize the isolation failure and take action to isolate process flow from the break. Once the operators recognize that condensate and feedwater are unavailable, they will attempt to start RCIC and other available injection sources. However, as mentioned above, RCIC will not start. The MSIVs will have closed on high steam tunnel temperature from the feedwater break. This will prevent depressurization with the turbine bypass valves. When the SRVs first open due to high reactor pressure, SRV "U" will fail to close; the crew should take actions in attempt to reclose the SRV. The SRO should enter the LGAs for reactor pressure and level control and secondary containment control. When level drops to the top of active fuel (TAF), the crew should perform an emergency depressurization.

Critical Steps

1. Crew recognizes failure of RWCU system to isolate and take steps to isolate the RWCU system from the break.
2. Crew performs an emergency depressurization when RPV level can't be maintained above TAF.

Facility: *LaSalle Station* **Scenario No.:** *ESG 2.2* **Op Test No.:** *2*

Examiners: _____ **Operators:** _____

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_____ _____

Initial Conditions:

- *Unit 1 is operating at 85% reactor power with flow control line at 105%.*
- *TLO Temperature controller in manual.*
- *1A GC pump is OOS for alignment.*
- *HPCS is OOS to megger and inspect motor.*
- *Online Safety level is green.*
- *Unit 2 is operating at 100% power.*

Turnover:

- *Unit 1 is in a Division 3 work week.*
- *Drywell inerting is scheduled to be secured this shift.*

Event No.	Malf. No.	Event Type*		Event Description
1	N/A	R	RO SRO	Power ascension to 100% power at 300 MWe/hour.
2	N/A	N	BOP SRO	Secure Drywell inerting IAW LOP-VQ-04.
3	CAEP	I	BOP SRO	Drywell N2 pressure controller fails high.
4	MCA006	C	BOP SRO	1D vacuum breaker sticks open
5	MNB135	I	BOP SRO	APRM Flow Unit B fails downscale.
6	MRD029	C	RO SRO	Half scram/Single rod scram.
7	N/A	R	RO SRO	Reduce reactor power by 75 MWe due to CRD scram.
8	MMS007	C	BOP SRO	EHC leak/Turbine trip/BPV failure.
9	MRP017	M	ALL	1B RPS channel fails to trip/ATWS.
10	MNB104		ALL	Steam Line Break in Containment.

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

NARRATIVE SUMMARY

Event(s)	Description
2.2.1	Once the crew has accepted the unit, the SRO should direct the RO to continue the power ascension in accordance with LGP 3-1.
2.2.2	The BOP operator will be directed to secure the drywell inerting lineup that was established the previous shift.
2.2.3, 4	After the inerting lineup has been secured and the drywell N2 pressure controller has been returned to normal, the controller will fail high causing containment pressure to rise and bringing up some trouble alarms from the nitrogen vaporizer. The crew should diagnose the cause of the alarms and rising containment pressure and take manual control and/or secure the makeup lineup. During this time, an imbalance between drywell and suppression chamber pressure will cause the 1D vacuum breaker to open. The vacuum breaker will stick in the open position and the crew will have to perform the actions of LOA-PC-101 to isolate the vacuum breaker and will refer to tech specs for required actions.
2.2.5, 6, 7	When the drywell N2 controller problem has been addressed, the crew will respond to a half scram signal that results from a Nuclear Instrumentation Flow Unit failure. A blown fuse on the opposite channel (unknown until half scram) will cause a single control rod to scram full in simultaneously. The RO should determine which rod has scrammed and refer to LOA-RD-101. The procedure will direct the RO to reduce power by 75 MWe and contact the nuclear engineer. An operator should be dispatched locally to determine the cause. The SRO should refer to tech specs to ensure compliance.
2.2.8	When the major actions for the previous events have been completed, an EHC leak occurs. This leak will become large enough to cause a trip of the turbine and subsequent loss of the turbine bypass valves. The turbine trip will result in a auto-scram signal; however, the operators may elect to scram the reactor prior to the trip.
2.2.9, 10	Once the reactor scrams, the RO should recognize that all rods failed to insert. The RO should attempt initiating alternate rod insertion (ARI), however; the control rods become hydraulically locked. The SRO should enter the ATWS emergency operating procedures and direct the applicable actions. The RO should perform method 4 of LGA-NB-01 to reset the scram, drain the scram discharge volume, then rescram the reactor. About two minutes following the turbine trip, a small main steam line break occurs in the drywell. This will raise containment pressure to the point where drywell sprays will be required.

Critical Steps

1. Crew uses alternate methods for inserting the control rods that remain out IAW the emergency operating procedures.
2. The crew establishes drywell sprays as directed by the emergency operating procedures.

Facility: *LaSalle Station* **Scenario No.:** *ESG 2.3* **Op Test No.:** *2*

Examiners: _____ **Operators:** _____

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_____ _____

Initial Conditions:

- *Unit 1 startup is in progress IAW LGP-1-1.*
- *TLO Temperature controller in manual.*
- *1A GC pump is OOS for alignment.*
- *HPCS is OOS to megger and inspect motor.*
- *Online Safety level is green.*
- *Unit 2 is operating at 100% power.*

Turnover:

- *Unit 1 is in a Division 3 work week.*
- *RR pump upshift IAW LOP-RR-05 is scheduled to be performed this shift.*
-

Event No.	Malf. No.	Event Type*		Event Description
1	*N/A*	*R*	*RO SRO*	*Upshift RR pumps during startup.*
2	*N/A*	*N*	*BOP SRO*	*Transfer HD Tank level control to pump forward.*
3	*CAEP*	*I*	*BOP SRO*	*HD Tank level controller fails.*
4	*MCF114*	*C*	*BOP SRO*	*1C HD Pump trips immediately after starting.*
5	*CAEP*	*C*	*RO SRO*	*1FW146 lockout during daily cycling.*
6	*MRC027*	*I*	*RO SRO*	*Reactor Recirc FCV drifts open.*
7	*MRC041*	*M*	*ALL*	*Reactor Recirculation line break.*
8	*MNB078*		*BOP SRO*	*1B RHR fails to auto initiate.*
9	*CAEP*		*BOP SRO*	*The selected DW spray valve fails to open (breaker trips), the other loops valves will operate.*

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

NARRATIVE SUMMARY

Event(s)	Description
2.3.1	Once the turnover is completed, the SRO will first direct an upshift of the reactor recirc pumps to fast speed. The RO should perform the upshift IAW LOP-RR-05.
2.3.2, 3, 4	The SRO should also direct the BOP operator to transfer heater drain tank level control to pump forward. After the HD tank level controller has been aligned for pump forward and placed in automatic, the output signal will fail causing pump forward valves to fail closed. The BOP operator will respond in accordance with the annunciator procedures and the abnormal procedure. He should attempt to start a standby HD pump. The first pump he starts will trip but the second pump will start and will help to reduce tank level. He may also take manual control of the controller to reopen the pump forward valves.
2.3.5	After heater drain system parameters have been stabilized, the RO will receive a request from the rounds operator to perform the daily cycling of the 1FW005 and 1FW146 feed water regulating valves for the daily operational check. The 1FW146 will lockout when the RO attempts to cycle it. He will have to reset the lockout in accordance with the annunciator and abnormal procedures.
2.3.6	The major transient sequence will begin with a RR flow control valve spuriously ramping closed. The crew should recognize the failure, immediately lockup the affected FCV and perform the actions of the abnormal operating procedure (LOA-RR-101). After these actions and some troubleshooting activities, the RR FCV problems lead to a RR system break in the drywell.
2.3.7, 8, 9	The break in the drywell will require actions in the RPV Level Control and Drywell Pressure control legs of the emergency operating procedures. After emergency operating procedure entry, additional failures will include a failure of 1B RHR to auto start (can be started manually) and a failure of the drywell spray valves that are initially selected for use.

Critical Steps

1. Crew recognizes failure of 1B RHR Pump to auto start and takes action to start pump manually.
2. The crew establishes drywell sprays prior to exceeding the limits of the PSP curve.