

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **1** Op-Test No.: **Day 1**

Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_  
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**Objectives:** To evaluate the candidates' ability to operate the facility in response to the following evolutions:

1. Operate Standby Service Water 'B' for chemical addition through all loads.
2. Respond to a failure of APRM 'C' upscale.
3. Take actions in response to a Low Pressure Feedwater Heater 3B Tube leak. Complete actions of the Loss of Feedwater Heating ONEP.
4. Analyze the affects of a reduction of Main Condenser Vacuum on plant operations and take required actions.
5. Take actions per the EOPs in response to an ATWS and mitigate the consequences of the ATWS with no Main Steam Bypass Valves.
6. Respond to a failure of Division I ECCS to manually initiate via the Manual Initiation pushbutton.
7. Take actions for a failure of Standby Liquid Control to inject to the Reactor during an ATWS.

**Initial Conditions:** Reactor Power is at 100 %.

**INOPERABLE Equipment**

APRM 'H' is INOP due to a failed power supply card

RHR 'C' Pump is tagged out of service for motor oil replacement

TBCW Pump 'C' is tagged out of service for pump seal replacement

Appropriate clearances and LCOs are written.

**Turnover:** The plant is operating at 100% power. Chemistry has requested SSW 'B' be operated through all loads for a chemical addition. There are scattered thundershowers reported in the Tensas Parish area.

## Scenario 1 Day 1 (Continued)

Event No.	10CFR 55.45(a)	K/A	Event Type*	Event Description
1	4, 5, 6	2.1.30	N (BOP)	Start SSW 'B' and operate through all loads (SOI 04-1-01-P41-1 section 4.3)
2	3, 5	215005 A2.02 2.1.12; 2.1.33	I (RO)	Respond to APRM 'C' failure upscale. Complete Technical Specification determinations.
3	2, 3, 4, 5, 6	2.4.49 295014 AA1.07; AA2.03	R/C (RO, BOP)	Respond to a tube failure in LP FW Heater 3B. Perform actions per ONEP 05-1-02-V-5. Lower Reactor power with Recirc flow.
4	3, 4, 5, 6	2.4.49 295002 AA1.02; AA1.05; AA2.01	C(RO, BOP)	Recognize and respond to a loss of Main Condenser vacuum. Take actions per ONEP 05-1-02-V-8.
	2, 3, 4, 7	2.4.4; 2.4.49 295006 AA1.01; AA1.05; AA1.07		When required initiate a manual Reactor Scram.
5	6, 8, 12, 13	295037 EA1.0; EA2.0 203000 A3.08 241000 A4.06	M (ALL)	Upon Reactor Scram recognize the failure of all control rods to fully insert and take actions per EOPs for ATWS.
	3, 5	209001 A4.05; A3.01; A3.02 203000 A4.05; A3.01; A3.02;; A2.14A3.08	I (BOP)	Upon orders to initiate and override Low Pressure ECCS, recognize the failure of Division I to initiate via Manual Initiation pushbutton. Take actions upon automatic initiation to override Division I Low Pressure ECCS.
	3, 4, 8	295037 EA1.04; EA1.10 211000 A1.0; A2.04; A3.0	C (BOP)	Recognize the failure of Standby Liquid Control to meet the parameters to inject into the Reactor when initiated and actions taken for Alternate Boron Injection.

All evolutions test 55.45(a)12 & 13.

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

**Critical Tasks**

- Inject Standby Liquid Control prior to Suppression Pool Temperature reaching 110 °F.
- Identify the need for Alternate Standby Liquid Control injection.
- Terminate and prevent injection from Feedwater and ECCS when conditions require entry into Level/Power Control.
- Commence injection into the reactor using Feedwater or RHR 'A' or 'B' through Shutdown Cooling when reactor level reaches -192".
- Insert Control Rods in response to ATWS conditions.

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **2** Op-Test No.: **Day 2**

Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_  
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**Objectives:** To evaluate the candidates' ability to operate the facility in response to the following evolutions:

1. Secure Diesel Generator 12 from diesel run.
2. Raise Reactor Power by withdrawing control rods.
3. Perform operator actions for a stuck control rod per ONEP.
4. Analyze a failure of Recirculation Pump 'B' Seal # 2.
5. Respond to a loss of Bus 12HE and trip of Recirculation Pump 'B' per ONEPs.
6. Respond to a failure of Feedwater Line in the Drywell, initiate a reactor scram based on rising Drywell Pressure per EOPs.
7. Respond to a failure of Division 1 ECCS failure to initiate.
8. With a failure of Feedwater Line in the Drywell and reduced injection systems maintain reactor level per the EOPs.

**Initial Conditions:** Reactor Power is at 44 % bringing the plant up following an outage; Reactor Recirculation pumps are in Fast Speed at 60 % core flow; a single Reactor Feed Pump in single element Master Level Control. Diesel Generator 12 operating at 2000KW load.

**INOPERABLE Equipment**

APRM 'H' is INOP due to a failed power supply card  
RHR 'C' is tagged out of service for motor oil replacement  
TBCW Pump 'C' is tagged out of service for pump seal replacement  
Appropriate clearances and LCOs are written.

**Turnover:** Secure Diesel Generator 12 from service. Leave Standby Service Water 'B' in operation for chemistry. Then continue to bring the plant to full power per IOI-2. There are scattered thundershowers reported in the Tensas Parish area.

## Scenario 2 Day 2 (Continued)

Event No.	10CFR 55.45(a)	K/A	Event Type*	Event Description
1	3, 4, 5	264000 A4.0;	N (BOP)	Secure Diesel Generator 12 from operation (SOI 04-1-01-P75-1)
2	1, 2, 4, 5	201005 A3.01; A3.02; A3.03; A4.01 2.2.2	R(RO)	Withdraw control rods to raise power. (Control Rod Pull Sheet & IOI 03-1-01-2)
3	1, 2, 3, 5, 6, 8	201001 A4.04 2.4.4; 2.4.11; 2.4.48	C (RO, BOP)	Control Rod 24-49 is stuck, un-stick control rod per ONEP. (ONEP 05-1-02-IV-1)
4	3, 4, 7	202001 A2.10; A4.10; A4.11	C (RO)	Respond to a failure Seal # 2 of Recirculation Pump 'B'. (Tech Specs)
5	3, 4, 5, 6	202001 A2.03	C (RO, BOP)	Respond to Overcurrent lockout on bus 12HE and trip of Recirculation Pump 'B'. (SOI 04-1-01-R21-12 & 05-1-02-III-3)
6	3, 4, 5, 6, 7, 13	295031 EA1.0 203000 A3.08 241000 A4.06	M (ALL)	Feedwater Line 'B' ruptures in the Drywell with leakage from the reactor.
	3, 4, 7	2.4.4 295024 EA1.0	I (BOP)	Failure of Division 1 ECCS to automatically initiate on High Drywell Pressure
	3, 4, 5, 6	209002 A2.03; A3.01; A4.03	C (BOP)	HPCS injection valve failure to open on initiation

All evolutions test 55.45(a) 12 & 13.

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

### Critical Tasks

- Recognize failure of Division 1 to initiate and manually initiate Division 1
- Isolate Feedwater line 'B' and reestablish feed through Feedwater line 'A' or lower reactor pressure to allow injection from low pressure systems

Facility: **GRAND GULF NUCLEAR STATION** Scenario No.: **3** Op-Test No.: **BACKUP**

Examiners: \_\_\_\_\_ Operators: \_\_\_\_\_  
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**Objectives:** To evaluate the candidates' ability to operate the facility in response to the following evolutions:

1. Raise Reactor Power using Recirculation Flow.
2. Start 3<sup>rd</sup> Condensate and Condensate Booster Pumps.
3. Respond to a trip of RPS Motor Generator 'B'.
4. Determine the source and respond to a leak on the suction valve of RHR Pump 'B', EOP entry.
5. Respond to a steam leak in the Auxiliary Building Steam Tunnel and a failure of Group 1 to isolate.
6. Take actions per the EOPs in response to two stuck control rods following a Reactor Scram.
7. Take actions per EOPs to control RPV parameters with a failure of the MSIVs to isolate the steam leak.

**Initial Conditions:** Reactor Power is at 83 % continuing power ascension to rated conditions.

**INOPERABLE Equipment**

APRM 'H' is INOP due to a failed power supply card  
RHR Pump 'C' is tagged out of service for motor oil replacement  
TBCW Pump 'C' is tagged out of service for pump seal replacement  
Appropriate clearances and LCOs are written.

**Turnover:** Continue power ascension. Radwaste is prepared for full Condensate and Feedwater operation. There are scattered thundershowers reported in the Tensas Parish area.

Scenario 3 **BACKUP** (Continued)

Event No.	10CFR 55.45(a)	K/A	Event Type*	Event Description
1	1, 2, 4, 5, 6, 8	202001 A4.04 202002 A4.08 2.2.2	R (RO)	Raise Total Core Flow to >12.5 Mlbm/hr Feedwater Flow. (IOI 03-1-01-2)
2	2, 4, 5, 6	256000 A3.02; A4.01	N (BOP)	Start 3 <sup>rd</sup> Condensate and Condensate Booster Pump. (SOI 04-1-01-N19-1)
3	3, 5, 6	212000 A1.11; A2.01; A4.07	C (RO, BOP)	Respond to trip of RPS Motor Generator 'B'. (ONEP 05-1-02-III-2)
4	3, 4, 5, 6	295036 EA1.02	C (BOP)	Determine the source and respond to a packing leak on E12-F004B RHR 'B' Suction Valve, with the valve failure determine unisolable and take actions per EOP – 3 & 4.
5	3, 4, 6, 13	2.4.46; 2.4.47; 2.4.48; 2.4.49	M (ALL)	Recognize and respond to a steam leak in the Auxiliary Building Steam Tunnel.
	3, 4, 6, 13	2.4.46; 2.4.47; 2.4.48; 2.4.49 290001 A2.06; A4.04	I (BOP)	Recognize the failure of Group 1 to automatically isolate and take actions to isolate the Main Steam Lines (ONEP 05-1-01-III-5)
	3, 4, 6, 13	2.4.46; 2.4.47; 2.4.48; 2.4.49 290001 A2.06; A4.04		Recognize the failure of a single Main Steam line to isolate and take actions for mitigation of the leak.
	4, 6, 12, 13	295037 EA1.0; EA2.0 212000 A4.17	C (RO)	Recognize the failure of two control rods to fully insert on the Reactor Scram and take actions as necessary per procedures to insert the control rods.

All evolutions test 55.45(a) 12 & 13.

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

**Critical Tasks**

- Manually scram the reactor.
- Isolate the main steam lines.