

Form 3.2-1 Administrative Topics Outline

Facility: <u>Grand Gulf</u>		Date of Examination: <u>Jan 2024</u>
Examination Level: RO		Operating Test Number: <u>2024</u>
Administrative Topic (Step 1)	Activity and Associated K/A (Step 2)	Type Code (Step 3)
Conduct of Operations	Loss of Shutdown Cooling, Time to 200°F Determination K/A 2.1.25 (3.9), 05-1-02-III-1	P, D, R 2021 NRC
Conduct of Operations	Perform Daily Operating Logs K/A 2.1.18 (3.6), 06-OP-1000-D-0001	N, S
Equipment Control	Determine Isolation Boundary for SBGT Fan Work K/A 2.2.13 (4.1), EN-OP-102	N, R
Radiation Control		
Emergency Plan	Reactor Water Level Determination K/A 2.4.34 (4.2), 05-1-02-II-1	D, R

Location:

(C)ontrol room, (S)imulator, or Class(R)oom

Source and Source Criteria:

(P)revious two NRC exams (no more than one JPM that is **randomly selected** from last two NRC exams)

(D)irect from bank (no more than three for ROs, no more than four for SROs and RO retakes)

(N)ew or Significantly (M)odified from bank (no fewer than one)



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 AR1
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024AR1 JPM Title: Loss of Shutdown Cooling, Time to 200°F Determination

Facility Number: GJPM-OPS-AON04
(If Bank or Modified from Bank)

JPM Attributes:

☐ New	☐ Modified	☒ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 10 min

Prepared By:	Tom Hooper	06/22/2023
	Exam Developer	Date
Ops Review:	M. Watts/ M. Lawrence	10/24/2023
	1 st Validation by Ops Rep or Ops Validation Crew	Date
Validated By:	M. Watts/ M. Lawrence	10/24/2023
	2 nd Validation by Ops Validation Crew	Date
Approved By:	G. Hargrove	11/5/2023
	Facility Representative	Date

Loss of Shutdown Cooling, Time to 200°F Determination

ADMINISTRATIVE JPM

Setting:	Classroom
Type:	RO
Task:	CRO-E12-11
K&A:	2.1.25 (3.9)
Safety Function:	Generic 2.1, Conduct of Operations
10CFR 55.45(a)	(4); (12)
Performance:	Perform
Reference(s):	05-1-02-III-1
Handout(s)	05-1-02-III-1 Pages through to Section C, Attachments 2-12
# Manipulations:	N/A
# Critical Steps:	2
Low Power:	No
Emergency/Abnormal:	No
RCA entry:	No
Engineered Safety Function:	No

Simulator Setup/Required Plant Conditions:

- NONE

Safety Concerns:

- NONE

Revision Statement:

- N/A

Task Standard:

- The operator determines procedure 05-1-02-III-1 Attachment 8 to be the correct graph to use.
- Determines using procedure 05-1-02-III-1 Attachment 8, 90 minutes +/- 6 minutes (0.1 hrs) to 200°F.
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Loss of Shutdown Cooling, Time to 200°F Determination

Initial Condition(s):

On day 5 of a refueling outage the following conditions exist:

- Preparation for drywell head removal is in progress.
- Reactor water level is being maintained below the Steam Lines at 95" RPV level.
- Reactor coolant temperature is 120°F.
- RHR A is lined up and providing shutdown cooling through the E12-F053A (RHR A SHUTDN CLG RTN TO FW).
- Neither RHR 'B' nor ADHR is available due to the situation.
- RWCU is available.

Initiating Cue(s):

- RHR pump 'A' trips on overcurrent
- Determine the time available before reactor coolant temperature reaches 200°F and record below.

Time to 200°F 90 minutes +/- 6 minutes

Loss of Shutdown Cooling, Time to 200°F Determination

Notes to Evaluator:

- Remember to record Start time.

Task Overview: (Detailed description of task)

- This task has the student estimate time to reach 200°F following loss of shutdown cooling using 05-1-02-III-1, Inadequate Decay Heat Removal ONEP.

Critical tasks are underlined, *italicized*, and denoted by an (*)

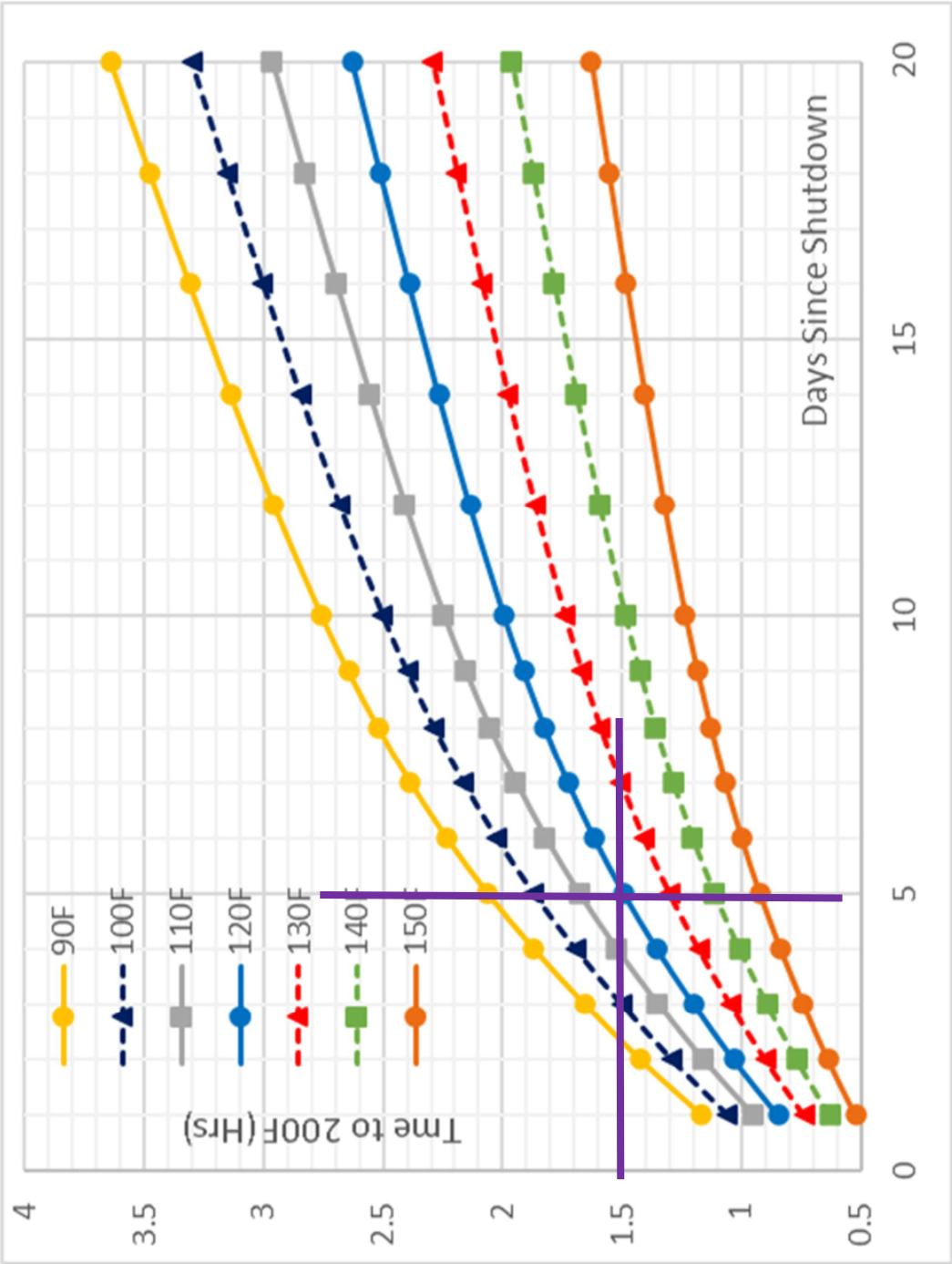
Step 1: 05-1-02-III-1, Attachment 8	
☐ *	<u><i>Using given information, determines Attachment 8 is the correct figure to use and the 120°F Initial Water Temperature line is the correct line to use.</i></u>
<u>Standard:</u>	The operator determines procedure 05-1-02-III-1 Attachment 8 to be the correct graph to use.
<u>Cue:</u>	None.
<u>Notes:</u>	Attachment 2 also explains how to select correct Attachment.
SAT / UNSAT	

Step 2: 05-1-02-III-1, Attachment 8	
☐ * <u>Using given information, determines time to 200°F is approximately 90 minutes.</u>	
<u>Standard:</u>	The operator determines, using procedure 05-1-02-III-1 Attachment 8, that there are 90 minutes +/- 6 minutes to 200°F.
<u>Cue:</u>	None.
<u>Notes:</u>	Evaluator may stop the JPM <i>Remember to record stop time</i> SAT / UNSAT

Title: Inadequate Decay Heat Removal	No.: 05-1-02-III-1	Revision: 054	Page: 49 of 118

KEY DO NOT GIVE TO STUDENT

Attachment 8, Figure - **Mode 4** - Time to 200 deg F - 1 to 20 days
12" Below Bottom of Steam Line (+91 in. RPV Level)



Give this page to the student

Initial Condition(s):

On day 5 of a refueling outage the following conditions exist:

- Preparation for drywell head removal is in progress.
- Reactor water level is being maintained below the Steam Lines at 95" RPV level.
- Reactor coolant temperature is 120°F.
- RHR A is lined up and providing shutdown cooling through the E12-F053A (RHR A SHUTDN CLG RTN TO FW).
- Neither RHR 'B' nor ADHR is available due to the situation.
- RWCU is available.

Initiating Cue(s):

- RHR pump 'A' trips on overcurrent
- Determine the time available before reactor coolant temperature reaches 200°F and record below.

Time to 200°F _____



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 AR2
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024AR2 JPM Title: Perform Daily Operating Logs

Facility Number: N/A
(If Bank or Modified from Bank)

JPM Attributes:

☒ New	☐ Modified	☐ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 15 min

Prepared By:	Tom Hooper Exam Developer	06/09/2023 Date
Ops Review:	S. Stuart/ M. Carr/ R. Smith 1 st Validation by Ops Rep or Ops Validation Crew	10/31/2023 Date
Validated By:	S. Stuart/ M. Carr/ R. Smith 2 nd Validation by Ops Validation Crew	10/31/2023 Date
Approved By:	G. Hargrove Facility Representative	11/5/2023 Date

Perform Daily Operating Logs

ADMINISTRATIVE JPM

Setting:	Simulator
Type:	RO
Task:	CRO-E12-11
K&A:	2.1.18 (3.6)
Safety Function:	Generic 2.1, Conduct of Operations
10CFR 55.45(a)	(4); (12)
Performance:	Perform
Reference(s):	06-OP-1000-D-0001
Handout(s)	06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12 and supporting instructions.
# Manipulations:	N/A
# Critical Steps:	3
Low Power:	No
Emergency/Abnormal:	No
RCA entry:	No
Engineered Safety Function:	No

Simulator Setup/Required Plant Conditions:

- Reset Simulator to IC-254 (paired with S1 and S6)
- Load schedule file n24JPMAR2.sch
- Ensure the following overrides are active:
 - AO_1C34R615_R to 104.9
 - AO_1C34R606A to 34.0
 - AO_1C34R606B to 34.0
 - AO_1C34R606C to 40.0
- Markup cover page of Attachment 1 of 06-OP-1000-D-0001

Safety Concerns:

- NONE

Revision Statement:

- N/A

Task Standard:

- The operator accurately records values 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12 in accordance with the Key without any unrecovered errors.
- Identifies that Reactor pressure (C34-UR-R615) indicates above the required value.
- Identifies that Reactor water level instruments (C34-LI-R606A(B)(C)) fail the channel check (>4" between highest and lowest channels).
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Perform Daily Operating Logs

Initial Condition(s):

- The plant is operating at approximately 100% power.
- Current time is 0800.
- 06-OP-1000-D-0001, Daily Operating Logs, is in progress.

Initiating Cue(s):

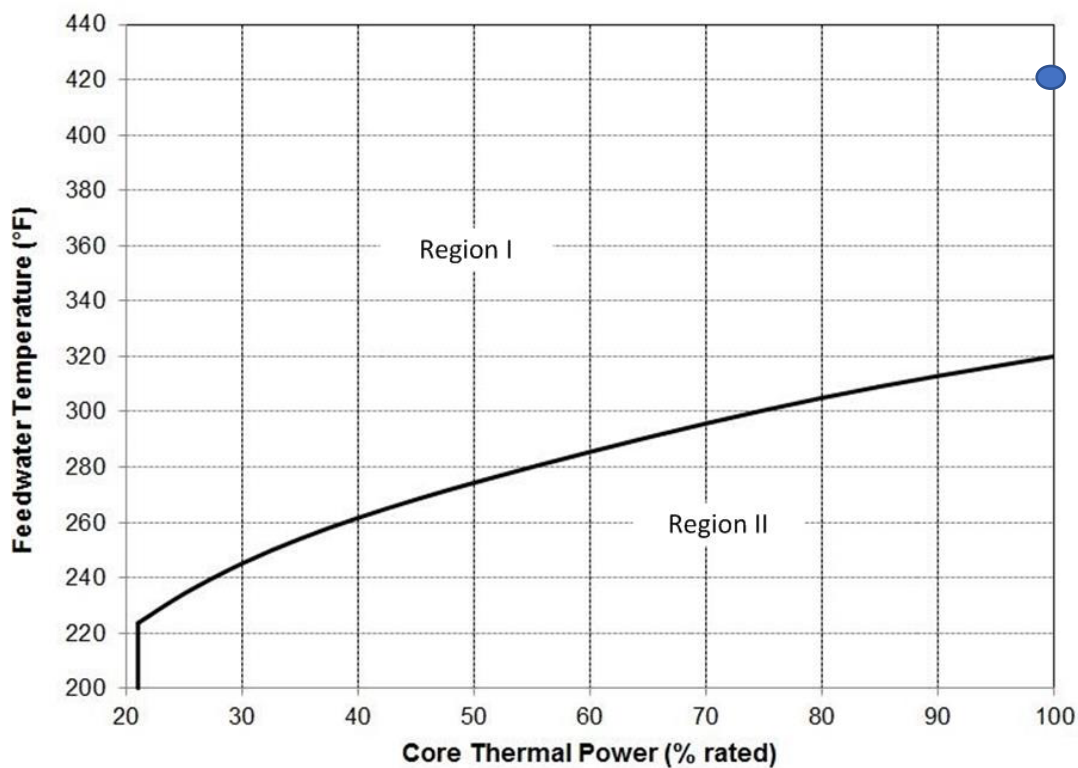
- The CRS directs you to complete checks for 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12

KEY
DO NOT GIVE TO CANDIDATE

	INST/PARAMETER	TECH SPEC	INDICATION	CRITERIA
6.	THERMAL LIMITS (≥ 21.8% PWR ONLY)	SR 3.2.1.1 SR 3.2.2.1 SR 3.2.3.1 N/A ☐	<u>CORE MONITORING COMPUTER EDIT</u> From STA computer VERIFY the following: TRG begins with “FM” YES ☒ NO ☐ If no, contact STA to perform 06-RE-1J11-V-0001 within 12 hours. From STA computer, record the following values from the current MON: MFLCPR: <u>0.863 +/-0.01</u> MAPRAT: <u>0.715 +/-0.01</u> MFLPD: <u>0.812 +/-0.01</u>	LIMITS: ≤ 1.0 FOR MFLCPR ≤ 1.0 FOR MAPRAT & MFLPD
		N/A ☒	IF MONITOR BLOCKED, VERIFY LATEST CASE < 12 HOURS OLD OR NOTIFY STA to perform 06-RE-1J11-V-0001. MON DATE-TIME: _____/_____ INITIALS: _____	

KEY
DO NOT GIVE TO CANDIDATE

6A.	INST/PARAMETER	TECH SPEC	INDICATION	CRITERIA
	FEEDWATER TEMP/ CORE THERM PWR (≥ 21% PWR ONLY)	NONE N/A ☐	PROCESS COMPUTER OD-3 FEEDWATER TEMP _____ 420.57 +/-2 °F CORE THERM PWR _____ 99.82 +/-1 % PLOT ON BELOW CURVE	IF PLOT IS <u>NOT</u> IN REGION I, THEN REFER TO ONEP 05-1-02-V-5, LOSS OF FW HEATING.



7.	C51-NR-R602	SR 3.3.1.2.4	P680 (7B)	CHANNEL CHECK
	SRMs (MODE 2 WHEN IRMs ≤ RANGE 2 ONLY)	SR 3.3.1.2.1 N/A X	A _____ B _____ CPS (GREEN) C _____ D _____ CPS (BLUE) E _____ F _____ CPS (RED) LOWEST READING _____ x 100 = _____ CPS	HIGHEST WITHIN A FACTOR OF 100 X LOWEST AND ≥ 3 CPS WITH DET FULLY INSERTED

Comments:

KEY
DO NOT GIVE TO CANDIDATE

	INST/PARAMETER	TECH SPEC	INDICATION	CRITERIA
8.	C51-NR-R603 IRMs (MODE 2 OR MODE 3 WHEN IN LCO 3.10.3) (BLUE) A,B,C,D (RED) E,F,G,H	SR 3.3.1.1.1; 3.3.1.1- 1.1.a SR 3.10.3.1 N/A X	(5B) P680 (7B) Div RANGE Div RANGE A _____ B _____ E _____ F _____ C _____ D _____ G _____ H _____ LOWEST READING _____ x 100 = _____ Div NOTE: Div = Divisions of full scale	CHANNEL CHECK HIGHEST AND LOWEST WITHIN A FACTOR OF 100
9.	DELETED			
10.	DELETED			
11.	C34-UR-R615 Rx PRESSURE (RED PEN) (MODES 1&2 ONLY) A Backup Computer Point may be used if C34-R615 is not available.	SR 3.4.12.1 N/A ☐	P680 (2B) _____ 1048 PSIG (RED PEN) (Primary) OR either Backup computer point: _____ N/A C34N008 computer point OR (Backup) _____ N/A C34NA001 computer point	TECH SPEC ≤ 1045 PSIG
12.	C34-LI-R606 RX WTR LVL (RFPT & MN TURB) LEVEL 9 TRIP (MODE 1 ONLY)	SR 6.3.7.1 N/A ☐	P680 (2B) A _____ 34 _____ IN B _____ 33 _____ IN C _____ 40 _____ IN	CHANNEL CHECK HIGHEST AND LOWEST WITHIN 4 IN

Perform Daily Operating Logs

Notes to Evaluator:

- Remember to record Start time.

Task Overview: (Detailed description of task)

- This task has the Operator perform a section of the Main Control Room daily logs per 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12.
- Reactor pressure will indicate higher than the allowable value on a recorder.
- Reactor water level instruments will fail the channel check due to a deviation between the channels.

Critical tasks are underlined, *italicized*, and denoted by an (*)

Step 1: 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12	
☐ Begins performing 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12	
<u>Standard:</u>	The operator begins recording values for 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12.
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 2: 06-OP-1000-D-0001 Attachment I
Data Sheet II Item 11

☐* Identifies that Reactor pressure (C34-UR-R615) indicates above the required value

Standard: The operator determines, using procedure 06-OP-1000-D-0001 Attachment I Data Sheet II Item 11, that Reactor pressure, as indicated on C34-UR-R615, indicates above the required value.

Cue: If the operator attempts to use backup computer points, tell them that another operator has checked computer points, and they are consistent with the recorder indication.

Notes: None.

SAT / UNSAT

Step 3: 06-OP-1000-D-0001 Attachment I
Data Sheet II Item 12

☐ * Identifies that Reactor water level instruments (C34-LI-R606A(B)(C)) fail the channel check (>4" between highest and lowest channels)

Standard: The operator determines, using procedure 06-OP-1000-D-0001 Attachment I Data Sheet II Item 12, that Reactor water level instruments (C34-LI-R606A(B)(C)) fail the channel check (>4" between highest and lowest channels)

Cue: None.

Notes: None

SAT / UNSAT

Step 4: 06-OP-1000-D-0001 Attachment I
Data Sheet II Items 6-12

☐ * Completes 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12

Standard: The operator accurately completes 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12 in accordance with the Key without any unrecovered errors.

Cue: None.

Notes: Evaluator may stop the JPM

Remember to record stop time

SAT / UNSAT

Perform Daily Operating Logs

☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> - The operator accurately records values 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12 in accordance with the Key without any unrecovered errors. - Identifies that Reactor pressure (C34-UR-R615) indicates above the required value - Identifies that Reactor water level instruments (C34-LI-R606A(B)(C)) fail the channel check (>4" between highest and lowest channels) - Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results (circle one):</u> SAT UNSAT		
<u>Follow-up Questions:</u> 		
<u>Follow-up Question Response:</u> 		
<u>Comments / Feedback:</u> 		

Give this page to the student

Initial Condition(s):

- The plant is operating at approximately 100% power.
- Current time is 0800.
- 06-OP-1000-D-0001, Daily Operating Logs, is in progress.

Initiating Cue(s):

- The CRS directs you to complete checks for 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 AR3
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024AR3

JPM Title: Determine Isolation Boundary for
SBGT Fan Work

Facility Number: N/A
(If Bank or Modified from Bank)

JPM Attributes:

☒ New	☐ Modified	☐ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 30 min

Prepared By:	Tom Hooper	06/22/2023
	Exam Developer	Date
Ops Review:	M. Watts/ M. Lawrence	10/24/2023
	1 st Validation by Ops Rep or Ops Validation Crew	Date
Validated By:	M. Watts/ M. Lawrence	10/24/2023
	2 nd Validation by Ops Validation Crew	Date
Approved By:	G. Hargrove	11/5/2023
	Facility Representative	Date

Determine Isolation Boundary for SBTG Fan Work

ADMINISTRATIVE JPM

Setting:	Classroom
Type:	RO
Task:	CRO-ADMIN-05
K&A:	2.2.13 (4.1)
Safety Function:	Generic 2.2, Equipment Control
10CFR 55.45(a)	(12)
Performance:	Perform
Reference(s):	EN-OP-102 04-1-01-T48-1 E-1257 M-1102A
Handout(s)	EN-OP-102 04-1-01-T48-1 P&L, Ref, Lineups E-1257 (simulator) M-1102A (simulator)
# Manipulations:	N/A
# Critical Steps:	3
Low Power:	No
Emergency/Abnormal:	No
RCA entry:	No
Engineered Safety Function:	No

Simulator Setup/Required Plant Conditions:

- None

Safety Concerns:

- None

Revision Statement:

- N/A

Task Standard:

- Determines the minimum isolation boundary to include:
 - SBGT fan A breaker
 - SBGT train A inlet damper breaker
 - SBGT train A outlet damper breaker
- Documents critical items on Worksheet IAW Key
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Determine Isolation Boundary for SBTG Fan Work

Initial Condition(s):

- The plant is operating at approximately 100% power.
- Maintenance is required on SBTG fan A.
- The maintenance activity will be intrusive to the fan casing for bearing replacement.
- The maintenance will NOT be intrusive to the motor.

Initiating Cue(s):

- Generate a tagout isolation boundary for the SBTG fan A maintenance. Record the devices to be tagged and their required positions on the worksheet provided.

Determine Isolation Boundary for SBTG Fan Work

Notes to Evaluator:

- Remember to record Start time.

Task Overview: (Detailed description of task)

- This task has the operator determine the required isolation boundary for maintenance on SBTG fan A.

Critical tasks are underlined, *italicized*, and denoted by an (*)

Step 1: EN-OP-102	
☐ * <i><u>Determines 52-151117, the breaker for SBTG fan A, must be OPEN</u></i>	
<u>Standard:</u>	Records on the worksheet that 52-151117, the breaker for SBTG fan A, must be OPEN IAW the Key.
<u>Cue:</u>	None.
<u>Notes:</u>	Component names and Required Position terminology may vary slightly as long as the correct component and position is communicated.
SAT / UNSAT	

Step 2: EN-OP-102 5.3[2](e)/Att. 9.2	
☐ * <u>Determines 52-151141, the breaker for SBT train A inlet damper T45-F023, must be OPEN</u>	
<u>Standard:</u>	Records on the worksheet that the breaker for SBT train A inlet damper T45-F023, must be OPEN IAW with Key.
<u>Cue:</u>	None.
<u>Notes:</u>	Component names and Required Position terminology may vary slightly as long as the correct component and position is communicated.
SAT / UNSAT	

Step 3: EN-OP-102 5.3[2](e)/Att. 9.2

☐* Determines 52-151147, the breaker for SBT train A outlet damper T45-F025, must be OPEN

Standard: Records on the worksheet that the breaker for SBT train A outlet damper T45-F025, must be OPEN IAW with Key

Cue: None.

Notes: Component names and Required Position terminology may vary slightly as long as the correct component and position is communicated.

Additional components may be identified, as indicated on the provided key. These additional components are deemed non-critical to provide proper protection given the nature of the maintenance (bearing replacement intrusive to fan casing). They are included on the key for completeness only.

Evaluator may stop the JPM

Remember to record stop time

SAT / UNSAT

Determine Isolation Boundary for SBT Fan Work

☐ Time Critical	☐ Alternate Path	Validation Time: 30 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> • Determines the minimum isolation boundary to include: ○ SBT fan A breaker ○ SBT train A inlet damper breaker ○ SBT train A outlet damper breaker • Documents critical items on Worksheet IAW Key • Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results (circle one):</u> SAT UNSAT		
<u>Follow-up Questions:</u> 		
<u>Follow-up Question Response:</u> 		
<u>Comments / Feedback:</u> 		

KEY

Component	Required Position
<u><i>* Breaker 52-151117</i></u> <u><i>(T45-D001A, SGTS FLTR TR A EXH FAN</i></u> <u><i>breaker)</i></u>	<u><i>OPEN</i></u>
<u><i>* Breaker 52-151147</i></u> <u><i>(T45-F025, SGTS FLTR TR A OUTL DMPR</i></u> <u><i>breaker)</i></u>	<u><i>OPEN</i></u>
<u><i>* Breaker 52-151141</i></u> <u><i>(T45-F023, SGTS FLTR TR A INL DMPR</i></u> <u><i>breaker)</i></u>	<u><i>OPEN</i></u>
SGTS FLTR TR A EXH FAN T45-D001A (SBGT Fan A control switch)	Auto
SGTS FLTR TR A HTR control switch	Off
Breaker 52-151118 (SGTS FLTR TR A HTR breaker)	OPEN
Breaker 52-1P53133 (C001A, MOTOR SPACE HEATER FOR SGTS RECIRC FAN)	OPEN

Give this page to the student

Initial Condition(s):

- The plant is operating at approximately 100% power.
- Maintenance is required on SBGT fan A.
- The maintenance activity will be intrusive to the fan casing for bearing replacement.
- The maintenance will NOT be intrusive to the motor.

Initiating Cue(s):

- Generate a tagout isolation boundary for the SBGT fan A maintenance. Record the devices to be tagged and their required positions on the worksheet provided.

Worksheet

[illegible]



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 AR4
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024AR4

JPM Title: Reactor Water Level
Determination

Facility Number: GJPM-OPS-AON05
(If Bank or Modified from Bank)

☐ New	☐ Modified	☒ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Prepared By:	<u>Tom Hooper</u> Exam Developer	<u>06/22/2023</u> Date
Ops Review:	<u>M. Watts/ M. Lawrence</u> 1 st Validation by Ops Rep or Ops Validation Crew	<u>10/24/2023</u> Date
Validated By:	<u>M. Watts/ M. Lawrence</u> 2 nd Validation by Ops Validation Crew	<u>10/24/2023</u> Date
Approved By:	<u>G. Hargrove</u> Facility Representative	<u>11/5/2023</u> Date

Reactor Water Level Determination

Setting:	Classroom
Type:	RO
Task:	CRO-C61-OFFNORM-5
K&A:	2.4.34 – (4.2)
Safety Function:	Generic 2.4 – Emergency Procedures/Plan
10CFR 55.45(a)	(5)
Performance:	Perform
Reference(s):	05-1-02-II-1 (Shutdown from the Remote Shutdown Panel)
Handout(s):	05-1-02-II-1 (Shutdown from the Remote Shutdown Panel) Photo of RSP level and pressure indication (attached)
# Manipulations:	N/A
# Critical Steps:	3
Low Power:	No
Emergency/Abnormal:	YES
RCA entry:	No
Engineered Safety Function:	No

Simulator Setup/Required Plant Conditions:

- None

Safety Concerns:

- None

Reactor Water Level Determination

Revision Statement:

- N/A

Task Standard(s):

- Per Attachment 1 of 05-1-02-II-1, Determines Narrow Range reactor water level is 59.0" (+/- 4"). (Based on each scale division is 4")
- Determines the status of RCIC by marking status blocks on turnover sheet, RCIC is not running and not injecting water to the reactor.
- Determines the status of HPCS by marking status blocks on turnover sheet, HPCS is Running and not injecting water to the reactor.
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Reactor Water Level Determination

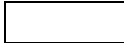
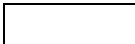
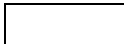
Initial Condition(s):

- The Control Room has been evacuated per 05-1-02-II-1 (Shutdown from the remote Shutdown Panel).
- An Alert has been declared for the Control Room Evacuation.
- The Condensate/Feedwater system is not available for inventory control.
- All actions for Control Room Evacuation have been completed.
 - Reactor Mode Switch is in SHUTDOWN
 - All control rods are inserted
 - MSIVs are closed
 - HPCS and RCIC auto initiated on low level following the scram.
- NO 05-1-02-II-1 attachments are installed.
- All SRVs are currently CLOSED and reactor pressure is stable.
- You report to the Remote Shutdown Panel to establish reactor water level.

Initiating Cue(s):

- The CRS directs you to determine Narrow Range reactor water level and the status of HPCS and RCIC.
- Use the attached image for current plant conditions.
- Consider only the given plant conditions.
- Mark the status of HPCS and RCIC in the grid below.

Key:

	HPCS	RCIC
Running		
NOT Running		
Injecting		
NOT Injecting		

Reactor Water Level Determination

Notes to Evaluator:

- Remember to record Start time.

Task Overview:

- The operator will evaluate plant conditions at the Remote Shutdown Panel to determine Narrow Range reactor water level and the status of injection sources.

Critical tasks are underlined, italicized, and denoted by an (*)

NOTE: The sequence of the following steps is critical unless otherwise noted.

Remember to record Start time

Step 1: 05-1-02-II-1 Attachment 1	
☐ *	<u>Determines Narrow Range reactor water level is 59.0" (+/- 4")</u>
<u>Standard:</u>	Per Attachment 1 of 05-1-02-II-1, Determines Narrow Range reactor water level is 59.0" (+/- 4") (KEY ATTACHED).
<u>Cue:</u>	None.
<u>Notes:</u>	Narrow Range level between 55" and 63" is acceptable since each scale division is 4".
SAT / UNSAT	

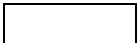
Step 2: 05-1-02-II-1 Attachment 1	
☐ *	<u>Determines the status of RCIC</u>

<u>Standard:</u>	Determines the status of RCIC is NOT running and NOT Injecting due to Reactor water level being >53.5" Narrow range, by marking status blocks on turnover sheet										
	<table><tr><td></td><td>RCIC</td></tr><tr><td>Running</td><td> </td></tr><tr><td>NOT Running</td><td> </td></tr><tr><td>Injecting</td><td> </td></tr><tr><td>NOT Injecting</td><td> </td></tr></table>		RCIC	Running		NOT Running		Injecting		NOT Injecting	
	RCIC										
Running											
NOT Running											
Injecting											
NOT Injecting											
<u>Cue:</u>	None.										
<u>Notes:</u>											
	SAT / UNSAT										

Step 3: 05-1-02-II-1 Attachment 1

☐* Determines the status of HPCS

Standard: Determines the HPCS pump is RUNNING but is NOT injecting to the reactor since the E22-F004 (HPCS injection valve) closed on Wide Range reactor water Level 8 (53.5") by marking status blocks on turnover sheet.

	HPCS
Running	
NOT Running	
Injecting	
NOT Injecting	

Cue: **None.**

Notes: HPCS is not monitored or controllable from the RSP. If reactor water level fails to Wide Range reactor Level 2 (-41.6"), E22-F004 will open and HPCS will begin to inject to the reactor. The operator will need to determine this from memory of system operation as there are no references at the RSP to determine the status of HPCS.

To meet these critical steps, the operator need only state that HPCS and RCIC is not injecting to the reactor.

SAT / UNSAT

Reactor Water Level Determination

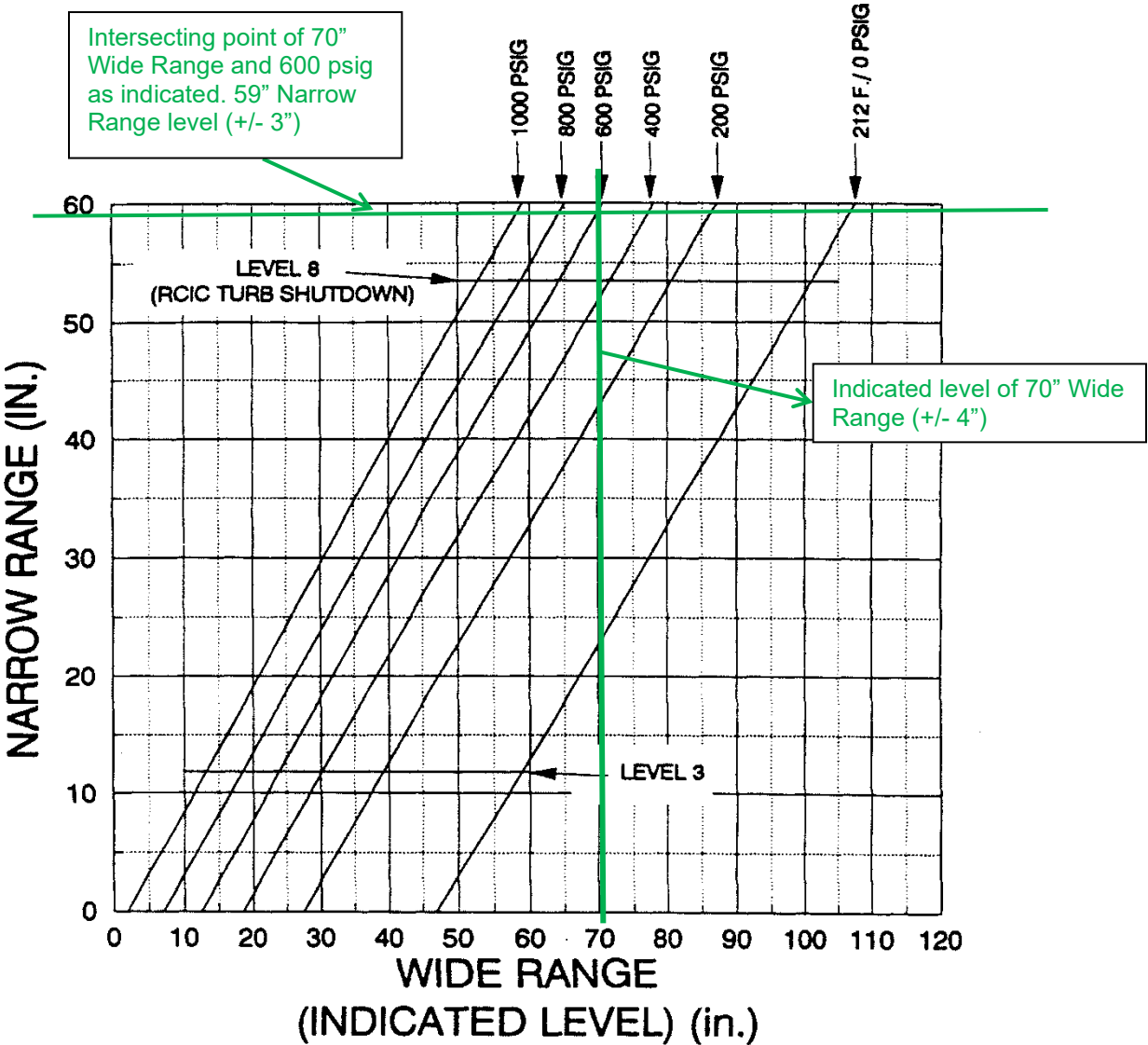
☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> • Per Attachment 1 of 05-1-02-II-1, Determines Narrow Range reactor water level is 59.0" (+/- 4"). (Based on each scale division is 4") • Determines the status of RCIC by marking status blocks on turnover sheet, RCIC is not running and not injecting water to the reactor. • Determines the status of HPCS by marking status blocks on turnover sheet, HPCS is Running and not injecting water to the reactor. • Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results (circle one):</u> SAT UNSAT		
<u>Follow-up Questions:</u>		
<u>Follow-up Question Response:</u>		
<u>Comments / Feedback:</u>		

KEY DO NOT GIVE TO STUDENT

SHUTDOWN FROM THE REMOTE SHUTDOWN PANEL

WIDE RANGE vs NARROW RANGE LEVEL



Give this page to the student

Initial Condition(s):

- The Control Room has been evacuated per 05-1-02-II-1 (Shutdown from the remote Shutdown Panel).
- An Alert has been declared for the Control Room Evacuation.
- The Condensate/Feedwater system is not available for inventory control.
- All actions for Control Room Evacuation have been completed.
 - Reactor Mode Switch is in SHUTDOWN
 - All control rods are inserted
 - MSIVs are closed
 - HPCS and RCIC auto initiated on low level following the scram
- NO 05-1-02-II-1 attachments are installed.
- All SRVs are currently CLOSED and reactor pressure is stable.
- You report to the Remote Shutdown Panel to establish reactor water level.

Initiating Cue(s):

- The CRS directs you to determine Narrow Range reactor water level and the status of HPCS and RCIC.
- Use the attached image for current plant conditions.
- Consider only the given plant conditions.
- Mark the status of HPCS and RCIC in the grid below.

	HPCS	RCIC
Running		
NOT Running		
Injecting		
NOT Injecting		



Form 3.2-1 Administrative Topics Outline

Facility: <u>Grand Gulf</u>		Date of Examination: <u>Jan 2024</u>
Examination Level: SRO		Operating Test Number: <u>2024</u>
Administrative Topic (Step 1)	Activity and Associated K/A (Step 2)	Type Code (Step 3)
Conduct of Operations	Reactor Water Chemistry Required Actions K/A 2.1.34 (3.5), 05-1-02-V-12	P, D, R 2021 NRC
Conduct of Operations	Determine Reportability Requirements K/A 2.1.18 (3.8), EN-LI-108	M, R
Equipment Control	Review Daily Operating Logs, Determine Technical Specification Impact K/A 2.2.12 (4.1), 06-OP-1000-D-0001, Technical Specifications	N, R
Radiation Control	Emergency Exposure Limits K/A 2.3.12 (3.7), 10-S-01-17, EN-RP-201	D, R
Emergency Plan	Perform Emergency Classification K/A 2.4.41 (4.6), 10-S-01-1	D, R

Location:

(C)ontrol room, (S)imulator, or Class(R)oom

Source and Source Criteria:

(P)revious two NRC exams (no more than one JPM that is **randomly selected** from last two NRC exams)

(D)irect from bank (no more than three for ROs, no more than four for SROs and RO retakes)

(N)ew or Significantly (M)odified from bank (no fewer than one)



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 AS1
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024AS1 JPM Title: Reactor Water Chemistry
Required Actions

Facility Number: N/A
(If Bank or Modified from Bank)

JPM Attributes:

☐ New	☐ Modified	☒ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 10 min

Prepared By:	Tom Hooper	06/09/2023
	Exam Developer	Date
Ops Review:	R. Purdy/ J. Cheroni	10/24/2023
	1 st Validation by Ops Rep or Ops Validation Crew	Date
Validated By:	R. Purdy/ J. Cheroni	10/24/2023
	2 nd Validation by Ops Validation Crew	Date
Approved By:	G. Hargrove	11/5/2023
	Facility Representative	Date

Reactor Water Chemistry Required Actions

ADMINISTRATIVE JPM

Setting:	Classroom
Type:	SRO
Task:	SRO-A&E-OFFNORM-2
K&A:	2.1.34 (3.5)
Safety Function:	Generic 2.1, Conduct of Operations
10CFR55.45(a):	(4)(12)
Performance:	Perform
Reference(s):	05-1-02-V-12, Condensate/Reactor Water High Conductivity 04-1-02-1H13-P680-1A-D2 CNDS PMP DISCH CNDCT HI
Handout(s)	05-1-02-V-12, Condensate/Reactor Water High Conductivity Marked up completed to A9 04-1-02-1H13-P680-1A-D2 CNDS PMP DISCH CNDCT HI
# Manipulations:	N/A
# Critical Steps:	4

Simulator Setup/Required Plant Conditions:

- None

Safety Concerns:

- None

Revision Statement:

- None

Task Standard:

In accordance with the Key:

- Applicant recognizes that at 11:57 PM on 10/17 Reactor Water Chlorides exceeded Action Level 2 (>20.0 ppb - ≤ 100.0 ppb) indicating 57 ppb. Records discovery date/time as 10/17 11:57 PM. Records action required date/time as 10/18 11:57 PM.
- Applicant determines and records the following ACTIONS (or equivalent):
 - **COMMENCE** a plant shutdown to MODE 4
 - **INITIATE** COOL-DOWN to COLD SHUTDOWNApplicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Initial Condition(s):

- The plant is operating at rated conditions.
- The Control Room is implementing the actions of 05-1-02-V-12, Condensate/Reactor Water High Conductivity ONEP.
- All related actions and plant conditions are as discussed in the attached narrative logs.
- Chemistry has just reported the sample results as noted in the Control room log.

Initiating Cue(s):

You are the Control Room Supervisor.

Using the attached narrative log, determine and record in 05-1-02-V-12 Step A9 the following:

- DISCOVERY date/time
- ACTION REQUIRED date/time

Determine and record below the following:

- Action(s) that are required to be performed for the condition.

KEY

Step A9 Table for Rx Water Chlorides

DISCOVERY date/time: 10/17 11:57 PM

ACTION REQUIRED date/time: 10/18 11:57 PM

Action(s) that are required to be performed for the condition:

- Applicant determines and records the following ACTIONS (or equivalent):
 - **COMMENCE** a plant shutdown to MODE 4
 - **INITIATE** COOL-DOWN to COLD SHUTDOWN

Reactor Water Chemistry Required Actions

Notes to Evaluator:

- This is an Administrative JPM and can be performed in a classroom.
- Remember to record Start time.

Task Overview: (Detailed description of task)

- The applicant will determine the required actions and the time at which those actions are required.

Critical steps are underlined, italicized, and denoted by an (*)

NOTE: The sequence of the following steps is critical unless otherwise noted.

Step 1: 05-1-02-V-12, Step A9	
☐ * IF ANY parameter value is WITHIN Action Level 2 of Attachment 2, Chemistry Action Limit Tables, THEN PERFORM the following: • NOTIFY the Duty Manager • DIRECT Chemistry to PERFORM the actions of 01-S-08-29, EPRI Water Chemistry Guidelines • <i>*<u>RECORD DISCOVERY date/time</u></i> • <i>*<u>RECORD ACTION REQUIRED date/time (DISCOVERY + 24 hours = ACTION REQUIRED)</u></i> • DEVELOP action plan for restoring parameter(s) to normal	
<u>Standard:</u> Applicant recognizes that at 11:57 PM on 10/17 Reactor Water Chlorides exceeded Action Level 2 (>20.0ppb - ≤100.0 ppb) indicating 57 ppb. Records discovery date/time as 10/17 11:57 PM. Records action required date/time as 10/18 11:57 PM.	
<u>Cue:</u>	None
<u>Notes:</u>	Applicant will write the Discovery Date, Time, and Action Required Date/Time on the ONEP.
SAT / UNSAT	

Step 2: 05-1-02-V-12, Step A10

- ☐ * **IF** ANY parameter CANNOT be restored BELOW Action Level 2 WITHIN 24 hours, **AND** the parameter will NOT be BELOW Action Level 2 WITHIN the time it will take for an orderly shutdown, **THEN PERFORM** the following:
- **COMMENCE a plant shutdown to MODE 4;**
USE IOI 03-1-01-2, Power Operations
 - **INITIATE COOL-DOWN to COLD SHUTDOWN conditions in a timely manner WITHIN operating limitations;**
USE IOI 03-1-01-3, Plant Shutdown
 - **DIRECT Chemistry to DETERMINE remaining operating demineralizer capacity**

Standard: Applicant determines the following ACTIONS are required:

- **COMMENCE a plant shutdown to MODE 4**
- **INITIATE COOL-DOWN to COLD SHUTDOWN**

Cue: If applicant asks if the parameter will or will not be below action level 2 within the time it will take for an orderly shutdown, then, answer **WILL NOT.**

Notes:

After applicant completes recording the actions required, stop the JPM.

Remember to record stop time

SAT / UNSAT

Reactor Water Chemistry Required Actions

☐ Time Critical	☐ Alternate Path	Validation Time: 20 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> In accordance with the Key: - Applicant recognizes that at 11:57 PM on 10/17 Reactor Water Chlorides exceeded Action Level 2 (>20.0ppb - ≤100.0 ppb) indicating 57 ppb. Records discovery date/time as 10/17 11:57 PM. Records action required date/time as 10/18 11:57 PM. - Applicant determines and records the following ACTIONS (or equivalent): COMMENCE a plant shutdown to MODE 4 INITIATE COOL-DOWN to COLD SHUTDOWN - Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results (circle one):</u> SAT UNSAT		
<u>Follow-up Questions:</u> 		
<u>Follow-up Question Response:</u> 		

Comments / Feedback:

Give this page to the student

Initial Condition(s):

- The plant is operating at rated conditions.
- The Control Room is implementing the actions of 05-1-02-V-12, Condensate/Reactor Water High Conductivity ONEP
- All related actions and plant conditions are as discussed in the attached narrative logs.
- Chemistry has just reported the sample results as noted in the Control room log.

Initiating Cue(s):

You are the Control Room Supervisor.

Using the attached narrative log, determine and record in 05-1-02-V-12 Step A9 the following:

- DISCOVERY date/time
- ACTION REQUIRED date/time

Determine and record below the following:

- Action(s) that are required to be performed for the condition.

Record the action(s) that are required to be performed for the condition:

CRS NARRATIVE LOG

Give this page to the operator

GGNS Operations		Nights
Monday, October 18, 2021		
Date	Entry	
10/17/2021 10:08 PM	Placed SSW A in STBY following chem add.	
10/17/2021 11:45 PM	Received annunciator "CNDS PMP DISCH CNDCT HI" P680-1A-D2 and is sealed in. Condensate Pump discharge conductivity on 1P33-CR-R615 blue pen is 0.11 $\mu\text{S}/\text{cm}$. RWCU influent conductivity is 0.15 $\mu\text{S}/\text{cm}$ on 1G33-CR-R601 blue pen. Previous logs reveal that Condensate Pump discharge conductivity has trended up from 0.06 $\mu\text{S}/\text{cm}$ over the last 2 weeks. There is no observable rise in Feedwater conductivity. Per CNDS PMP DISCH CNDCT HI" P680-1A-D2, entered Condensate/Reactor Water High Conductivity ONEP.	
10/17/2021 11:57 PM	Chemistry sample results show Reactor Water Conductivity in 0.19 $\mu\text{S}/\text{cm}$, Reactor Water Chlorides are 57 ppb and Reactor Water Sulfates are 12 ppb. Core thermal power is stable.	
10/18/2021 12:12 AM	Per ONEP, directed ATC to monitor conductivity and Condensate Booster Pump Discharge Header Pressure.	
10/18/2021 12:36 AM	Per ONEP, N22-F512, CNDS DEMIN DIFF PRESS VLV, is verified closed	
10/18/2021 12:45 AM	Per ONEP, directed Radwaste Operations to OPTIMIZE the use of demineralizers to enhance hotwell chemistry. Directed Plant Chemistry to perform grab samples per ONEP	
10/18/2021 1:04 AM	A condenser tube leak has been confirmed in Loop A of the Circulating Water System. Initiating actions to shutdown and isolate Loop A in accordance with SOI 04-1-01-N71-1.	
10/18/2021 3:02 AM	Loop A of the Circulating Water System has been isolated. "CNDS PMP DISCH CNDCT HI" P680-1A-D2 and has cleared. Condensate Pump discharge conductivity on 1P33-CR-R615 blue pen is 0.01 $\mu\text{S}/\text{cm}$. Other condensate and feed system chemistry parameters have returned to normal. Reactor power is 49%.	
10/18/2021 4:21 AM	Chemistry reports that reactor chemistry parameters are slowly lowering. Chemistry predicts that in 24 hours Reactor Water Conductivity will be 0.09 $\mu\text{S}/\text{cm}$, Reactor Water Chlorides will be 30 ppb and Reactor Water Sulfates will be 6 ppb.	



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 AS2

GGNS

01-2024 NRC Operating Test

Job Performance Measure

JPM Number: GJPM-OPS-2-2020AS2

JPM Title: Determine Reportability
Requirements

Facility Number: GJPM-OPS-AAD07
(If Bank or Modified from Bank)

JPM Attributes:

☐ New	☒ Modified	☐ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 15 min

Prepared By:	Tom Hooper	06/09/2023
	Exam Developer	Date
Ops Review:	R. Purdy/ J. Cheroni	10/24/2023
	1 st Validation by Ops Rep or Ops Validation Crew	Date
Validated By:	R. Purdy/ J. Cheroni	10/24/2023
	2 nd Validation by Ops Validation Crew	Date
Approved By:	G. Hargrove	11/5/2023
	Facility Representative	Date

Determine Reportability Requirements

Setting:	Classroom
Type:	SRO
Task:	SRO-M&S-011
K&A:	2.1.18 (3.8)
Safety Function:	Generic 2.1, Conduct of Operations
10CFR 55.45(a)	(12)
Performance:	Perform
Reference(s):	EN-LI-108 EN-OP-133 EN-OP-133-02 EAL matrix
Handout(s)	EN-LI-108 EN-OP-133 EN-OP-133-02 EAL matrix (simulator or classroom)
# Manipulations:	N/A
# Critical Steps:	3

Simulator Setup/Required Plant Conditions:

- None

Safety Concerns:

- None

Revision Statement:

- None

Task Standard:

Record reasons and time limits in accordance with the KEY for the following notifications:

- Determines notification is required within 1 hour due to emergency classification.
- Determines notification is required within 4 hours due to a valid RPS actuation while the Reactor is critical.
- Determines notification is required within 8 hours due to a valid actuation of Diesel Generators.
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Determine Reportability Requirements

Initial Condition(s):

- The plant was operating at 15% power during a plant startup with no equipment out of service.
- A switchyard fault resulted in a loss of 115KV and 500KV offsite power 16 minutes ago.
- An Unusual Event was declared for SU1.1 10 minutes after the loss of power.
- The Reactor automatically scrammed.
- Reactor water level reached a low of 20" during the transient.
- RCIC was manually valved in for Reactor pressure and level control.
- All systems operated as designed.

Initiating Cue(s):

- Determine ALL the applicable 10 CFR 50.72 reportability requirements.
- Record below the reason that they apply and the associated time limitations for reporting.

Reason for Notification: _____

Time Limit: _____

KEY

1. _____ emergency classification _____

___ 1 hour ___

2. _____ valid RPS actuation while the Reactor is critical _____

___ 4 hours ___

3. _____ valid actuation of Diesel Generators _____

___ 8 hours ___

4. _____

5. _____

6. _____

Determine Reportability Requirements

Notes to Evaluator:

- This is an Administrative JPM and can be performed in a classroom.
- Remember to record Start time.

Task Overview: (Detailed description of task)

- This task is to determine the 10 CFR 50.72 reportability of a plant event.

Critical tasks are underlined, *italicized*, and denoted by an (*)

NOTE: The sequence of the following steps is critical unless otherwise noted.

Step 1: EN-OP-133-02 & EN-LI-108	
☐	Reviews EN-OP-133-02 and EN-LI-108 for notification criteria and determines the relationship of plant conditions to conditions listed as reportable; the associated time frames and who is notified.
<u>Standard:</u>	Candidate reviews EN-OP-133-02 and EN-LI-108 for notification criteria and determines the relationship of plant conditions to conditions listed as reportable, the associated time frames and who is notified.
<u>Cue:</u>	None
<u>Notes:</u>	
SAT / UNSAT	

Step 2: EN-OP-133-02 & EN-LI-108

☐* Determines notification is required within 1 hour due to emergency classification

Standard: Determines notification is required within 1 hour due to emergency classification. Records reason and time limit.

Cue: None

Notes: The candidate may use the Quick Reference Table.

The emergency classification is due to loss of all offsite AC power for ≥15 minutes (EAL SU1.1)

The candidate may reference 10 CFR 50.72(a)(1)(i)

SAT / UNSAT

Step 3: EN-OP-133-02 & EN-LI-108

☐* Determines notification is required within 4 hours due to a valid RPS actuation while the Reactor is critical

Standard: Determines notification is required within 4 hours due to a valid RPS actuation while the Reactor is critical. Records reason and time limit.

Cue: None

Notes: The candidate may use the Quick Reference Table.

The candidate may reference 10 CFR 50.72(b)(2)(iv)(B)

SAT / UNSAT

Step 4: EN-OP-133-02 & EN-LI-108	
☐ * <u>Determines notification is required within 8 hours due to a valid actuation of Diesel Generators</u>	
<u>Standard:</u>	Determines notification is required within 8 hours due to a valid actuation of Diesel Generators. Records reason and time limit.
<u>Cue:</u>	None
<u>Notes:</u>	The candidate may use the Quick Reference Table. The candidate may reference 10 CFR 50.72(b)(3)(iv)(A) or 10CFR 50.72(b)(3)(iv)(B)(8) Evaluator may stop the JPM. <i>Remember to record stop time</i> SAT / UNSAT

Determine Reportability Requirements

☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> Record reasons and time limits in accordance with the KEY for the following notifications: • Determines notification is required within 1 hour due to emergency classification. • Determines notification is required within 4 hours due to a valid RPS actuation while the Reactor is critical. • Determines notification is required within 8 hours due to a valid actuation of Diesel Generators. • Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results</u> (circle one):	SAT	UNSAT
<u>Follow-up Questions:</u> <u>Follow-up Question Response:</u> 		
<u>Comments / Feedback:</u> 		

Give this page to the student

Initial Condition(s):

- The plant was operating at 10% power during a plant startup with no equipment out of service.
- A switchyard fault resulted in a loss of 115KV and 500KV offsite power 16 minutes ago.
- An Unusual Event was declared for SU1.1 10 minutes after the loss of power.
- The Reactor automatically scrammed.
- Reactor water level reached a low of 20" during the transient.
- RCIC was manually valved in for Reactor pressure and level control.
- All systems operated as designed.

Initiating Cue(s):

- Determine ALL the applicable 10 CFR 50.72 reportability requirements.
- Record below the reason that they apply and the associated time limitations for reporting.

Reason for Notification:

Time Limit:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 AS3
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024AS3 JPM Title: Review Daily Operating Logs,
Determine Tech Spec Impact

Facility Number: N/A
(If Bank or Modified from Bank)

JPM Attributes:

☒ New	☐ Modified	☐ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 15 min

Prepared By:	Tom Hooper	06/09/2023
	Exam Developer	Date
Ops Review:	R. Purdy/ J. Cheroni	10/24/2023
	1 st Validation by Ops Rep or Ops Validation Crew	Date
Validated By:	R. Purdy/ J. Cheroni	10/24/2023
	2 nd Validation by Ops Validation Crew	Date
Approved By:	G. Hargrove	11/5/2023
	Facility Representative	Date

Review Daily Operating Logs, Determine Tech Spec Impact

ADMINISTRATIVE JPM

Setting:	Classroom
Type:	SRO
Task:	RO-E12-11
K&A:	2.2.12 (4.1)
Safety Function:	Generic 2.2, Equipment Control
10CFR 55.45(a)	(4); (12)
Performance:	Perform
Reference(s):	06-OP-1000-D-0001
Handout(s)	06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12
	Tech Specs available
# Manipulations:	N/A
# Critical Steps:	4
Low Power:	No
Emergency/Abnormal:	No
RCA entry:	No
Engineered Safety Function:	No

Simulator Setup/Required Plant Conditions:

- None

Safety Concerns:

- None

Revision Statement:

- N/A

Task Standard:

- Identifies that Reactor pressure (C34-UR-R615) indicates above the required value
- Identifies that Reactor water level instruments (C34-LI-R606A(B)(C)) fail the channel check (>4" between highest and lowest channels)
- Determines Technical Specification 3.4.12 Condition A must be entered
- Determines Technical Requirements Manual 6.3.7 Condition A must be entered.
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Review Daily Operating Logs, Determine Tech Spec Impact

Initial Condition(s):

- The plant is operating at approximately 100% power.
- Current time is 0800.
- 06-OP-1000-D-0001, Daily Operating Logs, is in progress.
- 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12 have just been completed.

Initiating Cue(s):

- Review 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12.
- Determine any required actions.
- Record your findings in the space below.

Review Daily Operating Logs, Determine Tech Spec Impact

Notes to Evaluator:

- Remember to record Start time.

Task Overview: (Detailed description of task)

- This task has the Operator review a section of the Main Control Room daily logs per 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12.
- Reactor pressure is recorded as higher than the allowable value.
- Reactor water level instruments fail the channel check due to a deviation between the channels.

Critical tasks are underlined, *italicized*, and denoted by an (*)

Step 1: 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12	
☐	Reviews 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12
<u>Standard:</u>	Reviews 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12.
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 2: 06-OP-1000-D-0001 Attachment I
Data Sheet II Item 11

☐* Identifies that Reactor pressure (C34-UR-R615) indicates above the required value

Standard: The operator determines, using procedure 06-OP-1000-D-0001 Attachment I Data Sheet II Item 11, that Reactor pressure, as indicated on C34-UR-R615, indicates above the required value.

Cue: If the operator requests use of backup computer points, tell them that another operator has checked computer points, and they are consistent with the recorder indication.

Notes: None.

SAT / UNSAT

Step 3: 06-OP-1000-D-0001 Attachment I
Data Sheet II Item 12

☐* Identifies that Reactor water level instruments (C34-LI-R606A(B)(C)) fail the channel check (>4" between highest and lowest channels)

Standard: The operator determines, using procedure 06-OP-1000-D-0001 Attachment I Data Sheet II Item 12, that Reactor water level instruments (C34-LI-R606A(B)(C)) failed the channel check (>4" between highest and lowest channels)

Cue: None.

Notes: None

SAT / UNSAT

Step 4: Technical Specification 3.4.12	
☐ * <u>Determines Technical Specification impact of Reactor pressure value</u>	
<u>Standard:</u>	The operator determines that TS 3.4.12 Condition A must be entered (restore reactor steam dome pressure to within limit within 15 minutes).
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 5: Technical Requirements Manual 6.3.7	
☐ * <u>Determines Technical Requirements Manual impact of Reactor water level values</u>	
<u>Standard:</u>	The operator determines that TRM 6.3.7 Condition A must be entered (restore channel(s) to functional status within 7 days).
<u>Cue:</u>	None.
<u>Notes:</u>	Evaluator may stop the JPM <i>Remember to record stop time</i>
SAT / UNSAT	

Give this page to the student

Initial Condition(s):

- The plant is operating at approximately 100% power.
- Current time is 0800.
- 06-OP-1000-D-0001, Daily Operating Logs, is in progress.
- 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12 have just been completed.

Initiating Cue(s):

- Review 06-OP-1000-D-0001 Attachment I Data Sheet II Items 6-12.
- Determine any required actions.
- Record your findings in the space below.



. Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 AS4
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024AS4

JPM Title: Emergency Exposure Limits

Facility Number: N/A
(If Bank or Modified from Bank)

☐ New	☐ Modified	☒ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Prepared By:	Tom Hooper	06/09/2023
	Exam Developer	Date
Ops Review:	R. Purdy/ J. Cheroni	10/24/2023
	1 st Validation by Ops Rep or Ops Validation Crew	Date
Validated By:	R. Purdy/ J. Cheroni	10/24/2023
	2 nd Validation by Ops Validation Crew	Date
Approved By:	G. Hargrove	11/5/2023
	Facility Representative	Date

Emergency Exposure Limits

ADMINISTRATIVE JPM

<u>Setting:</u>	Classroom
<u>Type:</u>	RO
<u>Task:</u>	CRO-ADMIN-15
<u>K&A:</u>	2.3.12 (3.2)
<u>Safety Function:</u>	Generic – Radiation Control, Administrative Topic 3
<u>10CFR 55.45(a)</u>	(12)
<u>Performance:</u>	Perform
<u>Reference(s):</u>	EP-4-ALL, Exposure Authorization Form, Rev 4 EN-RP-201, Dosimetry Administration, Rev 5
<u>Handout(s)</u>	EP-4-ALL, Exposure Authorization Form EN-RP-201, Dosimetry Administration
<u># Manipulations:</u>	N/A
<u># Critical Steps:</u>	3

Simulator Setup/Required Plant Conditions:

- NONE

Safety Concerns:

- NONE

Task Standard:

- Determines the correct exposure to be 5,500 mrem.
- Emergency workers are authorized up to 10CFR20 limit of five (5) Rem during a classified emergency.
- Determines that all Emergency Exposures in excess of 10CFR20 limits shall be authorized by the Emergency Director (ED) or Emergency Plant Manager (EPM).
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Emergency Exposure Limits

Initial Condition(s):

- An Alert has been declared due to plant event.
- Due to the event, general radiation levels inside Containment are 11,000 mrem/hr.
- A task you are qualified to perform in Containment is required to mitigate the event.
- This task is NOT for protecting infrastructure or large populations.

Initiating Cue(s):

- You have been directed enter Containment to perform an emergency task.
- Your task will take 30 minutes inside containment.
- Considering ONLY TEDE and your exposure inside Containment:
 - Determine Estimate of Planned Dose for the task.
 - Determine the exposure limit for current conditions.
 - Identify who would approve exceeding this exposure limit to perform the task.

KEY

Estimate of Planned Dose _____ 5,500 _____

Authorized Emergency Dose _____ 5 REM _____

Approval required from _____
Emergency Director (ED) or Emergency Plant
Manager (EPM).

Emergency Exposure Limits

Notes: (Notes to Evaluator)

- Remember to record Start time on page 7.

Task Overview: (Detailed description of task)

- The operator will evaluate a condition involving abnormally high radiological conditions and determine actions required to administratively control the dose received by determining who authorizes dose extensions in various situations.

Critical tasks are underlined, *italicized*, and denoted by an (*)

Step 1: Calculation	
☐ * <u><i>Determine expected final exposure following the task.</i></u>	
$\frac{11,000 \text{ mrem}}{\text{hr}} \times \frac{1 \text{ hr } 30 \text{ min}}{60 \text{ min}} = 5,500 \text{ mrem}$	
<u>Standard:</u>	Determines the expected final exposure to be 5,500 mrem.
<u>Cue:</u>	NONE
<u>Notes:</u>	
SAT / UNSAT	

Step 2: EP-4-ALL, Step 2.1 & 2.3

☐* Determine the exposure limits for current conditions.

Standard: Emergency workers are authorized up to 10CFR20 limit of five (5) Rem during a classified emergency.

Cue: NONE

Notes:

SAT / UNSAT

Step 3: EP-4-ALL, Step 2.4

☐* Determine that the Emergency Director (ED) or Emergency Plant Manager (EPM) must authorize all emergency exposures in excess of 10CFR20 limits.

Standard: Determines that all Emergency Exposures in excess of 10CFR20 limits shall be authorized by the Emergency Director (ED) or Emergency Plant Manager (EPM).

Cue: NONE

Notes:

SAT / UNSAT

Emergency Exposure Limits

☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Operator: _____ Date: _____

Evaluators Name: _____ Evaluators Signature: _____

Start Time: _____ Stop Time: _____

CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____

Task Standard(s):

- Determines the correct exposure to be 5,500 mrem.
- Emergency workers are authorized up to 10CFR20 limit of five (5) Rem during a classified emergency.
- Determines that all Emergency Exposures in excess of 10CFR20 limits shall be authorized by the Emergency Director (ED) or Emergency Plant Manager (EPM).
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

JPM Results: (circle one)

SAT

UNSAT

Follow-up Questions:

Follow-up Question Response:

Comments / Feedback:

Give this page to the student

Initial Condition(s):

- An Alert has been declared due to plant event.
- Due to the event, general radiation levels inside Containment are 11,000 mrem/hr.
- A task you are qualified to perform in Containment is required to mitigate the event.
- This task is NOT for protecting infrastructure or large populations.

Initiating Cue(s):

- You have been directed enter Containment to perform an emergency task.
- Your task will take 30 minutes inside containment.
- Considering ONLY TEDE and your exposure inside Containment:
 - Determine Estimate of Planned Dose for the task.
 - Determine the exposure limit for current conditions.
 - Identify who would approve exceeding this exposure limit to perform the task

Estimate of Planned Dose

Authorized Emergency Dose

Approval required from



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 AS5
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024AS5 JPM Title: Perform Emergency
Classification

Facility Number: N/A
(If Bank or Modified from Bank)

JPM Attributes:

☐ New	☐ Modified	☒ Direct from bank
☒ Time Critical 15 min	☐ Alternate Path	Validation Time: 10 min

Prepared By:	Tom Hooper	06/09/2023
	Exam Developer	Date
Ops Review:	R. Purdy/ J. Cheroni	10/24/2023
	1 st Validation by Ops Rep or Ops Validation Crew	Date
Validated By:	R. Purdy/ J. Cheroni	10/24/2023
	2 nd Validation by Ops Validation Crew	Date
Approved By:	G. Hargrove	11/5/2023
	Facility Representative	Date

Perform Emergency Classification

ADMINISTRATIVE JPM

Setting: Classroom
Type: SRO Only
Task: SRO-A&E-EMERGENCY-15
K&A: 2.4.41 (4.6)
Safety Function: Generic 2.4, Emergency Procedures/Plan
10CFR55.45(a): (11); (12)
Performance: Perform
Reference(s): EAL wallchart
10-S-01-1
05-1-02-II-12
05-1-02-II-1
Handout(s): EAL wallchart (available)
10-S-01-1
EAL Bases (available)

Manipulations: N/A
Critical Steps: 2

Simulator Setup/Required Plant Conditions:

- None

Safety Concerns:

- None

Revision Statement:

- None

Task Standard:

- Determines that control has NOT been established at the Remote Shutdown Panels within 15 minutes.
- Within 15 minutes of cue given, classifies the event as a SITE AREA EMERGENCY per EAL HS6.1.
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Initial Condition(s):

- Plant was operating at rated power
- At 1055, workers spilled a toxic substance which caused the Main Control Room atmosphere to become hazardous
- At 1056, Shift Manager decided to shutdown the reactor and evacuate the Main Control Room
- Control Room personnel obtained SCBAs and evacuated the Main Control Room
- Personnel were attempting to establish control of the plant at the Remote Shutdown Panels
- Control has not been established at the Remote Shutdown Panels
- Current time is **1113**

Initiating Cue(s):

- Classify the event
- This JPM is **TIME CRITICAL**

KEY

Emergency Classification ____ **SITE AREA EMERGENCY** ____

EAL _____ **HS6.1** _____

Perform Emergency Classification

Notes to Evaluator:

- This is an Administrative JPM and can be performed in a classroom.
- This is time critical, **record the Start time when Cue has been read.**

Task Overview: (Detailed description of task)

If a transient occurs or events in progress a Senior Reactor Operator must classify events as an Emergency Director in accordance with the Emergency Preparedness Plan.

10-S-01-1 requires classification based on conditions of EAL HS6.1 Site Area Emergency.

Emergency classification declaration must be completed within 15 minutes of recognition of an emergency.

This task is Time Critical based on 10CFR 50 Appendix E part IV. C.2 requirements.

Critical steps are underlined, italicized, and denoted by an (*)

NOTE: The sequence of the following steps is not critical unless otherwise noted.

Step 1: 10-S-01-1 6.1.2
☐ * <i><u>Evaluate EALs to determine emergency classification.</u></i>
<u>Standard:</u> Determines that control has NOT been established at the Remote Shutdown Panels within 15 minutes.
<u>Cue:</u> None
<u>Notes:</u> Record the Start time when Cue has been read to evaluate critical time criteria. Release of a toxic substance makes EAL HA5.1 relevant. When the Main Control Room is evacuated, EALs HA6.1 and HS6.1 also become relevant. Time when control room evacuate: 1056 Current Time 1113 Delta 17 minutes If control has NOT been established at the Remote Shutdown Panels within 15 minutes, the EAL classification HS6.1 met. SAT / UNSAT

Step 2: 10-S-01-1 6.1.3
☐ * <u>Classify the emergency.</u>
<u>Standard:</u> Per EAL HS6.1, a SITE AREA EMERGENCY is declared.
<u>Cue:</u> None
<u>Notes:</u> Record the Start time when Cue has been read to evaluate critical time criteria. Record Stop time when classification announced/determined. Calculate and record actual time duration. Stop JPM after classification. Control has NOT been established at the Remote Shutdown Panels within 15 minutes, the EAL classification goes to the higher classification of HS6.1. A SITE AREA EMERGENCY should be declared per HS6.1. SAT / UNSAT

Perform Emergency Classification

☒ Time Critical 15 min	☐ Alternate Path	Validation Time: 10 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: ____ Required Time (min): __15 min ____ Actual Time (min): _____		
<u>Task Standard(s):</u> - Determines that control has NOT been established at the Remote Shutdown Panels within 15 minutes. - Within 15 minutes of cue given, classifies the event as a SITE AREA EMERGENCY per EAL HS6.1 - Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results (circle one):</u> SAT UNSAT		
<u>Follow-up Questions:</u>		
<u>Follow-up Question Response:</u>		
<u>Comments / Feedback:</u>		

Give this page to the student

Initial Condition(s):

- Plant was operating at rated power
- At 1055, workers spilled a toxic substance which caused the Main Control Room atmosphere to become hazardous
- At 1056, Shift Manager decided to shutdown the reactor and evacuate the Main Control Room
- Control Room personnel obtained SCBAs and evacuated the Main Control Room
- Personnel were attempting to establish control of the plant at the Remote Shutdown Panels
- Control has not been established at the Remote Shutdown Panels
- Current time is **1113**

Initiating Cue(s):

- Classify the event
- This JPM is **TIME CRITICAL**

Emergency Classification _____

EAL _____

Form 3.2-2 Control Room/In-Plant Systems Outline

Facility: <u>Grand Gulf</u>			Date of Examination: <u>Jan 2024</u>		
			Operating Test Number: <u>2024</u>		
Exam Level: RO / SRO-I / SRO-U					
System/JPM Title			Type Code		Safety Function
Control Room Systems					
S1. Rotate CRD Pumps; CRD Pump Low Oil Pressure K/A 201001 A4.01 (3.7), 04-1-01-C11-1, 04-1-02-1H13-P601-22A-G3			P, D, A, S 2021 NRC		1
C1. Defeat Feedwater Pump Level 9 Trips K/A 259001 A3.10 (3.9), 05-S-01-EP-1 Attachment 6			D, C		2
S2. Open MSIVs; Steam Leak Develops with Failure to Automatically Isolate K/A 239001 A4.01 (4.4), 04-1-01-B21-1, ARI P601-18A-A3			M, A, L, S		3
S3. Perform LPCS Surveillance, High Pump Current K/A 209001 A4.01 (4.3), 06-OP-1E21-Q-0006, ARI P601-21A-A7			N, A, EN, S		4
S4. Perform Containment Venting K/A 223001 A2.06 (4.0/4.1), 05-S-01-EP-1 Attachment 14			D, L, S		5
S5. Withdraw SRMs K/A 215004 A4.04 (3.5), 04-1-01-C51-1			N, L, S		7
S6. Swap Plant Air Compressors K/A 300000 A4.02 (3.5), 04-1-01-P51-1			N, S		8
S7. Perform ARM Functional Test (RO Only) K/A 272000 A4.02 (3.2), 04-1-03-D21-1			D, S		9

In-Plant Systems		
P1. Hydrogen Igniter Alternate Power K/A 223001 A4.14 (3.5), 05-S-01-STRATEGY	D, E, R	5
P2. Battery Charger Startup with Low Current K/A 263000 A2.03 (3.4/3.2), 04-1-01-L11-1	M, A	6
P3. Initiate Fire Suppression to Standby Gas Treatment Filter Train K/A 286000 2.1.30 (4.4/4.0), 04-1-02-1H13-P870-2A-B2	D, E, R	8

Code	License Level Criteria		
	RO	SRO-I	SRO-U
(A)lternate path	4–6 (4)	4–6 (4)	2–3 (3)
(C)ontrol room	(1)	(1)	(0)
(D)irect from bank	≤ 9 (6)	≤ 8 (5)	≤ 4 (1)
(E)mergency or abnormal in-plant	≥ 1 (2)	≥ 1 (2)	≥ 1 (1)
(EN)gineered safety feature (for control room system)	≥ 1 (1)	≥ 1 (1)	≥ 1 (1)
(L)ow power/shutdown	≥ 1 (3)	≥ 1 (3)	≥ 1 (2)
(N)ew or (M)odified from bank (must apply to at least one alternate path JPM)	≥ 2 (5/3)	≥ 2 (5/3)	≥ 1 (4/3)
(P)revious two exams (randomly selected)	≤ 3 (1)	≤ 3 (1)	≤ 2 (0)
(R)adiologically controlled area	≥ 1 (2)	≥ 1 (2)	≥ 1 (1)
(S)imulator	(7)	(6)	(3)



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 S1
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024S1

JPM Title: CRD Pump Rotation

Facility Number: N/A
(If Bank or Modified from Bank)

JPM Attributes:

☐ New	☐ Modified	☒ Direct from bank
☐ Time Critical	☒ Alternate Path	Validation Time: 10 Min

Prepared By:	Tom Hooper Exam Developer	06/09/2023 Date
Ops Review:	S. Stuart/ M. Carr/ R. Smith 1 st Validation by Ops Rep or Ops Validation Crew	10/31/2023 Date
Validated By:	S. Stuart/ M. Carr/ R. Smith 2 nd Validation by Ops Validation Crew	10/31/2023 Date
Approved By:	G. Hargrove Facility Representative	11/5/2023 Date

CRD Pump Rotation

Setting:	Simulator
Type:	RO
Task:	CRO-C11(1)-008
K&A:	201001 A4.01 (3.7)
Safety Function:	1- Reactivity Control
10CFR55.45(a)	(1); (2); (3); (5)
Performance:	Perform
Reference(s):	04-1-01-C11-1, CRD SOI
	05-1-02-IV-1, Control Rod/Drive Malfunctions ONEP
Handout(s)	04-1-01-C11-1, CRD SOI, Pages 1-7 and Section 5.5
	Markup 04-1-01-C11-1 complete to 5.5.2.c
	After ONEP entry, 05-1-02-IV-1, Control Rod/Drive Malfunctions,
	ONEP Page 1-7
# Manipulations:	6
# Critical Steps:	6
Low Power:	No
Emergency/Abnormal:	YES
RCA entry:	No
Engineered Safety Function:	No

CRD Pump Rotation

Simulator Setup/Required Plant Conditions:

- Reset Simulator to IC-254 (paired with S6)

OR

- Reset to IC 1
- Verify A CRD Pump in service
- Load schedule file n24JPM1.sch (contains triggers for opening/closing discharge valve and trigger for tripping CRD pump)

Note: if this JPM will be performed multiple times, perform a QUICK SNAP after loading the schedule file. Then reset to the QUICK SNAP after completion of the JPM.

CRD Pump Rotation

Safety Concerns:

- None

Revision Statement:

- N/A

Task Standard:

- Starts B CRD Pump by rotating the handswitch to the START position
- Stops A CRD pump by rotating handswitch to STOP position.
- Places C11-R600, CRD SYS FLO CONT, to MANUAL.
- Lowers output to 0% on C11-R600, CRD SYS FLO CONT
- Starts CRD Pump A by rotating the handswitch to the START position
- Ensures charging water header pressure is normal, then Slowly adjusts 1C11-R600, CRD SYS FLO CONT, to achieve a flow rate between 54 gpm and 66 gpm.
- Places C11-R600, CRD SYS FLO CONT, in AUTO
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Initial Condition(s):

- The plant is operating at 100% power
- The CRD pumps need to be rotated for maintenance.
- After the rotation a Red tag will be initiated.
- All Prerequisites are met.
- C11-F217B, CRD Pump 'B' Discharge Valve, is closed.
- CRD Pump 'B' has been vented.

Initiating Cue(s):

- The CRS directs you to rotate CRD pumps, using 04-1-01-C11-1, Control Rod Drive Hydraulic System SOI.
- Beginning at step 5.5.2.c
- All Prerequisites are met.

CRD Pump Rotation

Notes to Evaluator:

- All controls will be from panel P601 in the Main Control Room.
- During pump rotation, communication will be done with the booth operator for plant manipulations.
- Remember to record Start time on page 16.

Task Overview: (Detailed description of task)

- This task is to rotate CRD pumps from H13-P601 per the SOI. Once the first pump is secured and flows re-established, the CRD pump that was just started will trip requiring implementation of the Immediate Operator Actions of the Control Rod and Drive Malfunctions ONEP 05-1-02-IV-1 to restart the other CRD pump and restore flow to the CRD System.

CRD Pump Rotation

Critical tasks are underlined, *italicized*, and denoted by an (*)

NOTE: The sequence of the following steps is critical unless otherwise noted.

Remember to record Start time

Step 1: 04-1-01-C11-1, Step 5.5.2 c	
☐ *	<u>START CRD PMP A(B)</u> AND IMMEDIATELY , But SLOWLY , OPEN Discharge Valve F217A(B).
<u>Standard:</u>	Starts B CRD Pump by rotating the handswitch to the START position.
<u>Cue:</u>	When the simulator operator has completed opening C11-F217B inform the candidate the valve is open.
<u>Notes:</u>	Simulator Operator: When directed to open C11-F217B Activate Trigger 1. (Remote function ramp C11031 to 100%) Report to evaluator when C11-F217B is open.
SAT / UNSAT	

Step 2: 04-1-01-C11-1, Step 5.5.2 d

☐ **CHECK** CRD System flow has stabilized between 54 to 66 gpm.

Standard: Verifies that CRD flow is stabilized between 54 to 66 gpm.

Cue: **None.**

Notes:

SAT / UNSAT

Step 3: 04-1-01-C11-1, Step 5.5.2 e

☐ **CLOSE** CRD Pump A(B) Disch Valve F217A(B) for CRD pump being removed from service.

Standard: Communicates with the Aux Bldg operator to close the C11-F217A.

Cue: **When told by Simulator Operator, report C11-F217A is closed.**

Notes: **Simulator Operator: When directed to close C11-F217A Activate Trigger 2. (Remote function ramp C11030 to 0) Report to evaluator when C11-F217A is closed.**

SAT / UNSAT

Step 4: 04-1-01-C11-1, Step 5.5.2 f

☐* **STOP CRD Pump A(B) being removed from service.**

Standard: Stops A CRD pump by rotating handswitch to STOP position.

Cue: None.

Notes:

SAT / UNSAT

Step 5: 04-1-01-C11-1, Step 5.5.2 g

☐ **SLOWLY OPEN** CRD Pump Disch Valve F217A(B) for CRD pump stopped.

Standard: Communicates with the Aux Bldg operator to slowly open C11-F217A.

Cue: When told by Simulator Operator, report C11-F217A is open.

Notes: Simulator Operator: When directed to open C11-F217A Activate Trigger 3. (Remote function ramp C11030 to 100%) Report to evaluator when C11-F217A is open.

Simulator operator: After report is being given that C11-F217A is full open or directed by the evaluator, activate Trigger 4. (Activates malfunction c11028b to trip CRD Pump 'B'.)

SAT / UNSAT

Alternate Path begins with the next step, designated by "AP".

AP Step 6: 05-1-02-IV-1, Step A1

- ☐ **IF** CRD Pump has been tripped LESS THAN 15 minutes, **THEN START** Standby CRD Pump, **USE** Attachment 2 Hard Card.

Standard: Operator observes pump trip and informs CRS. As directed by CRS, obtain Attachment 2 of ONEP and refers to Step A1 in ONEP 05-1-02-IV-1

Cue: After CRS is notified, direct operator to perform Subsequent Actions of ONEP 05-1-02-IV-1, Control Rod/Drive Malfunctions.
As CRS give applicant copy of 05-1-02-IV-1, Control Rod/Drive Malfunctions ONEP,

Notes:

ONEP states to use Attachment 2 Hard Card, steps 1.0 and 3.0 will be marked as complete, step 2.0 will be marked N/A.

SAT / UNSAT

AP Step 7: 05-1-02-IV-1, Attachment 2 Step 1.0

☐ **CHECK** MCCs 15B42 AND 16B42 ENERGIZED (1H13-P864).

Standard: Determines MCCs 15B42 and 16B42 are energized.

Cue: **NONE**

Notes:

Step 2.0 of Attachment 2 is N/A.

SAT / UNSAT

AP Step 8: 05-1-02-IV-1, Attachment 2 Step 3.0

☐ **ENSURE** CRD PUMP A(B) AUX OIL PMP is IN SERVICE (1H13-P601-22C).

Standard: Ensures that CRD Pump A Aux Oil Pump is in service.

Cue: **None.**

Notes:

SAT / UNSAT

AP Step 9: 05-1-02-IV-1, Attachment 2 Step 4.0

☐* **PLACE 1C11-R600, CRD SYS FLO CONT, to MANUAL (1H13-P601-22B), AND LOWER output to 0% to CLOSE C11-F002A(B), CRD FLO CONT VLV.**

Standard:

1. Places C11-R600, CRD SYS FLO CONT, to MANUAL.
2. Lowers output to 0% on C11-R600, CRD SYS FLO CONT

Cue: **None.**

Notes:

SAT / UNSAT

AP Step 10: 05-1-02-IV-1, Attachment 2 Step 5.0

☐* **START CRD PMP A(B), 1C11-C001A(B) (1H13-P601-22C).**

Standard: Starts CRD Pump A by rotating the handswitch to the START position

Cue: **None.**

Notes:

SAT / UNSAT

AP Step 11: 05-1-02-IV-1, Attachment 2 Step 6.0

- ☐* **IF** NO scram signal is present, **AND** *charging header pressure has restored to normal*, **THEN SLOWLY ADJUST 1C11-R600, CRD SYS FLO CONT, to BETWEEN 54 gpm AND 66 gpm.**

Standard: Slowly adjusts 1C11-R600, CRD SYS FLO CONT, to achieve a flow rate between 54 gpm and 66 gpm.

Cue: None.

Notes: Restoration of charging pressure indicated by minimal CRD system flow.

SAT / UNSAT

AP Step 12: 05-1-02-IV-1, Attachment 2 Step 7.0

- ☐ **ENSURE** 1C11-R600, CRD SYS FLO CONT Setpoint is BETWEEN 54 gpm AND 66 gpm

Standard: Ensures thumbwheel on C11-R600, CRD SYS FLO CONT, setpoint is between 54 gpm and 66 gpm.

Cue: None.

Notes: If the thumbwheel was moved from the normal setpoint then this step will become CRITICAL.

SAT / UNSAT

AP Step 13: 05-1-02-IV-1, Attachment 2 Step 8.0

☐* **PLACE 1C11-R600, CRD SYS FLO CONT in AUTO.**

Standard: Places C11-R600, CRD SYS FLO CONT, in AUTO.

Cue: None.

Notes:

After the flow controller is placed in AUTO, the Evaluator may stop the JPM

Remember to record stop time

SAT / UNSAT

CRD Pump Rotation

☐ Time Critical	☒ Alternate Path	Validation Time: 10 Min

Operator: _____ License: RO / SRO Date: _____

Evaluators Name: _____ Evaluators Signature: _____

Start Time: _____ Stop Time: _____

CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____

Task Standard(s):

- Starts B CRD Pump by rotating the handswitch to the START position
- Stops A CRD pump by rotating handswitch to STOP position.
- Places C11-R600, CRD SYS FLO CONT, to MANUAL.
- Lowers output to 0% on C11-R600, CRD SYS FLO CONT
- Starts CRD Pump A by rotating the handswitch to the START position
- Ensures charging water header pressure is normal, then Slowly adjusts 1C11-R600, CRD SYS FLO CONT, to achieve a flow rate between 54 gpm and 66 gpm.
- Places C11-R600, CRD SYS FLO CONT, in AUTO
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

JPM Results (circle one): **SAT** **UNSAT**

Follow-up Questions:

Follow-up Question Response:

Comments / Feedback:

Give this page to the student

Initial Condition(s):

- The plant is operating at 100% power
- The CRD pumps need to be rotated for maintenance.
- After the rotation a Red tag will be initiated.
- All Prerequisites are met.
- C11-F217B, CRD Pump 'B' Discharge Valve, is closed.
- CRD Pump 'B' has been vented.

Initiating Cue(s):

- The CRS directs you to rotate CRD pumps, using 04-1-01-C11-1, Control Rod Drive Hydraulic System SOI.
- Beginning at step 5.5.2.c.
- All Prerequisites are met.



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 C1
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024C1

JPM Title: Defeat Feed Pump Level 9 Trips

Facility Number: N/A
(If Bank or Modified from Bank)

JPM Attributes:

☐ New	☐ Modified	☒ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Prepared By:	Tom Hooper Exam Developer	06/21/2023 Date
Ops Review:	M. Watts/ M. Lawrence 1 st Validation by Ops Rep or Ops Validation Crew	10/24/2023 Date
Validated By:	M. Watts/ M. Lawrence 2 nd Validation by Ops Validation Crew	10/24/2023 Date
Approved By:	G. Hargrove Facility Representative	11/5/2023 Date

Defeat Feed Pump Level 9 Trips

Setting:	Control Room
Type:	RO
Task:	CRO-EP-006
K&A:	259001 A3.10 (3.9)
Safety Function:	2 – Reactor Water Inventory Control
Performance:	Simulated
Reference(s):	05-S-01-EP-1 Attachment 6 EN-IS-123 ELECTRICAL SAFETY
Handout(s)	05-S-01-EP-1 Front matter and Attachment 6 EN-IS-123 Applicable sections for opening panel while energized and removing relays. 11x17 pictures showing interior of panels
# Manipulations:	6
# Critical Steps:	4
Low Power:	No
Emergency/Abnormal:	YES
RCA entry:	No
Engineered Safety Function:	No

Simulator Setup/Required Plant Conditions:

- Control Room operating panels and back panel P612 is accessible

Safety Concerns:

- Ensure electrical safety maintained per EN-IS-123 – All actions will be simulated. Do not open any panels. (Candidate will use pictures to simulate actions).

Revision Statement:

- N/A

Task Standard:

Performs the following:

- Using pictures, simulates removing relay 1C34A-K7J from Main Control Room panel 1H13-P612 Bay B (3rd row from top, 1st relay from left.)
- Using pictures, simulates removing relay 1C34A-K7G from Main Control Room panel 1H13-P612 Bay B (2nd row from top, 3rd relay from left.)
- Using pictures, simulates removing relay 1C34A-K7A from Main Control Room panel 1H13-P612 Bay B (2nd row from top, 1st relay from left.)
- Using pictures, simulates removing relay 1C34A-K7F from Main Control Room panel 1H13-P612 Bay B (3rd row from top, 3rd relay from left.)

Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

K7A	K7D	K7G
K7J	K7C	K7F

Initial Condition(s):

- | |
|---|
| <ul style="list-style-type: none">• EOPs have been entered. |
|---|

Initiating Cue(s):

- | |
|--|
| <ul style="list-style-type: none">• You have been directed to perform steps 2.1 through 2.4 of EP Attachment 6.• Another operator will complete the remaining steps of this attachment when directed.• All actions will be simulated. Do not open any panels. Use pictures to simulate actions.• Before you begin, explain to the evaluator necessary PPE for this task in accordance with EN-IS-123. |
|--|

Defeat Feed Pump Level 9 Trips

Notes to Evaluator:

- Panel P612 is in the Main Control Room
- Remember to record Start time on page 7.

Task Overview: (Detailed description of task)

- This task defeats the High Reactor Water Level trip of the Reactor Feed Pumps, which under certain conditions is directed by the EOPs to maintain adequate core cooling.

Defeat Feed Pump Level 9 Trips

Critical tasks are underlined, *italicized*, and denoted by an (*)

Step 1: EN-IS-123	
☐ Obtains PPE for removing relays in energized panel.	
<u>Standard:</u>	Identifies required PPE for removing relays. Minimum of safety glasses and electrical gloves.
<u>Cue:</u>	Provide EN-IS-123 handout if requested
<u>Notes:</u>	May indicate additional PPE such as non-melting cotton clothes, hard hat, remove exposed metal, safety shoes, face shield, etc.
SAT / UNSAT	

Step 2: 05-S-01-EP-1, Attachment 6, Pg 4 of 4

☐ Accesses panel 1H13-P612

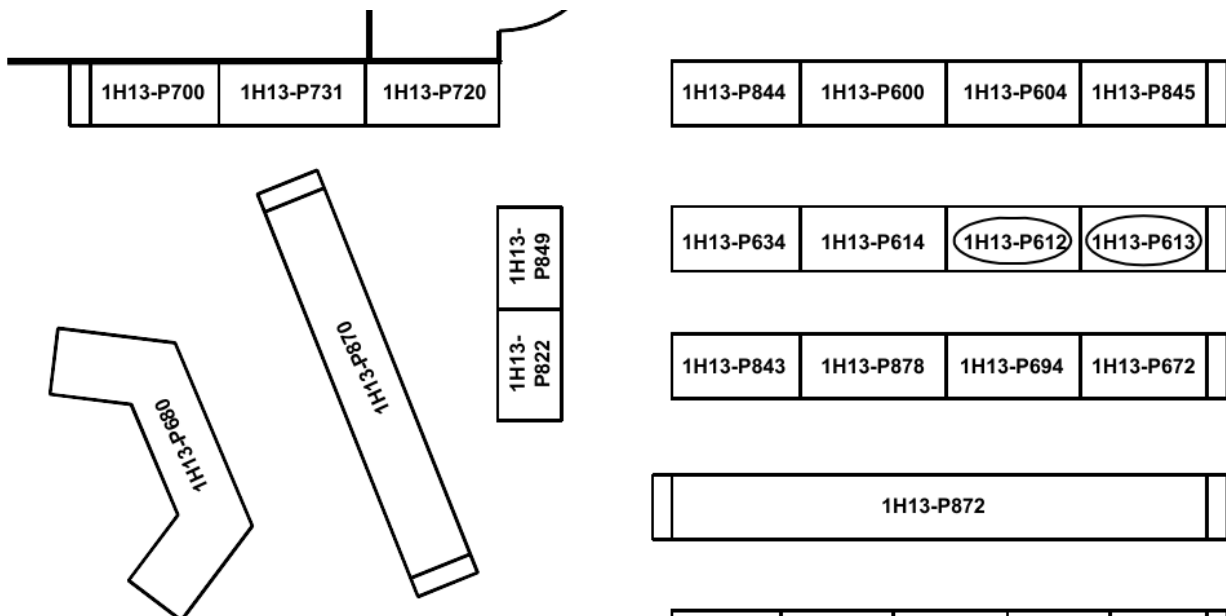
Standard: Locates and simulates opening cabinet door on 1H13-P612

Cue: None

Notes:
See below location

Remember : All actions will be simulated. Do not open any panels. Use pictures to simulate actions.

SAT / UNSAT



Step 3: 05-S-01-EP-1, Attachment 6, step 2.1

☐ * **REMOVE** relay 1C34A-K7J.

Standard: Using pictures, simulates removing relay 1C34A-K7J from Main Control Room panel 1H13-P612 Bay B (3rd row from top, 1st relay from left.)

Cue: You are holding a relay.

Notes:

SAT / UNSAT

K7A	K7D	K7G
K7J	K7C	K7F

Step 4: 05-S-01-EP-1, Attachment 6, step 2.2

☐ * **REMOVE** relay 1C34A-K7G.

Standard: Using pictures, simulates removing relay 1C34A-K7G from Main Control Room panel 1H13-P612 Bay B (2nd row from top, 3rd relay from left.)

Cue: You are holding a relay.

Notes:

SAT / UNSAT

K7A	K7D	K7G
K7J	K7C	K7F

Step 5: 05-S-01-EP-1, Attachment 6, step 2.3

☐ * **REMOVE** relay 1C34A-K7A.

Standard: Using pictures, simulates removing relay 1C34A-K7A from Main Control Room panel 1H13-P612 Bay B (2nd row from top, 1st relay from left.)

Cue: You are holding a relay.

Notes:

SAT / UNSAT

K7A	K7D	K7G
K7J	K7C	K7F

Step 6: 05-S-01-EP-1, Attachment 6, step 2.4

☐ * **REMOVE** relay 1C34A-K7F.

Standard: Using pictures, simulates removing relay 1C34A-K7F from Main Control Room panel 1H13-P612 Bay B (3rd row from top, 3rd relay from left.)

Cue: You are holding a relay.
If candidate attempts to enter the P680 panel area, inform the candidate that another operator will perform the remainder of the attachment.

Notes:

STOP the JPM
Remember to record stop time

SAT / UNSAT

Defeat Feed Pump Level 9 Trips

☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> • Using pictures, simulates removing relay 1C34A-K7J from Main Control Room panel 1H13-P612 Bay B (3rd row from top, 1st relay from left.) • Using pictures, simulates removing relay 1C34A-K7G from Main Control Room panel 1H13-P612 Bay B (2nd row from top, 3rd relay from left.) • Using pictures, simulates removing relay 1C34A-K7A from Main Control Room panel 1H13-P612 Bay B (2nd row from top, 1st relay from left.) • Using pictures, simulates removing relay 1C34A-K7F from Main Control Room panel 1H13-P612 Bay B (3rd row from top, 3rd relay from left.) Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results</u> (circle one): SAT UNSAT		
<u>Follow-up Questions:</u> <u>Follow-up Question Response:</u>		
<u>Comments / Feedback:</u>		

Give this page to the student

Initial Condition(s):	
• EOPs have been entered.	

Initiating Cue(s):	
• You have been directed to perform steps 2.1 through 2.4 of EP Attachment 6. • Another operator will complete the remaining steps of this attachment when directed. • All actions will be simulated. Do not open any panels. Use pictures to simulate actions. • Before you begin, explain to the evaluator necessary PPE for this task in accordance with EN-IS-123.	



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 S2
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024S2

JPM Title: Open MSIVs; Steam Leak

Facility Number: N/A
(If Bank or Modified from Bank)

JPM Attributes:

☐ New	☒ Modified	☐ Direct from bank
☐ Time Critical	☒ Alternate Path	Validation Time: 9 Min

Prepared By:	Tom Hooper	06/09/2023
	Exam Developer	Date
Ops Review:	S. Stuart/ M. Carr/ R. Smith	10/31/2023
	1 st Validation by Ops Rep or Ops Validation Crew	Date
Validated By:	S. Stuart/ M. Carr/ R. Smith	10/31/2023
	2 nd Validation by Ops Validation Crew	Date
Approved By:	G. Hargrove	11/5/2023
	Facility Representative	Date

Open MSIVs; Steam Leak

Setting:	Simulator
Type:	RO
Task:	CRO-B21-001
K&A:	239001 A4.01 (4.4)
Safety Function:	3 - Reactor Pressure Control
Performance:	Perform
Reference(s):	04-1-01-B21-1 section 4.3; ARI P601-18A-A3
Handout(s)	04-1-01-B21-1, Precautions / Limitations and section 4.3 pg. 1-15 Completed to Step 4.3.2.d(2)(c).
# Manipulations:	2
# Critical Steps:	2
Low Power:	Yes
Emergency/Abnormal:	No
RCA entry:	No
Engineered Safety Function:	No

Simulator Setup/Required Plant Conditions:

- Reset Simulator to IC-258 (paired with S5)
- Load schedule file n24JPM2.sch
- Verify drain valve lineup

OR

- Develop an IC at approximately 350 psig and at the point of adding heat.
- Condenser vacuum >10"
- Condenser Vacuum Bypass switches are in NORM
- B21-F098A, B, C, D are OPEN
- Close the MSIV's, and then begin reopening in accordance with 04-1-01-B21-1 section 4.3.
- Complete section 4.3 to Step 4.3.2.d(2)(c).
- Snap IC with > 100 psid across Inbd MSIVs.
- Load schedule file n24JPM2.sch

Safety Concerns:

- None

Revision Statement:

- N/A

Task Standard:

- All Inboard MSIVs are opened.
- After steam leak occurs, all Main Steam lines are isolated by closure of at least one MSIV in each line.
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Initial Condition(s):

- | |
|--|
| <ul style="list-style-type: none">• A plant startup is in progress.• Reactor pressure is approximately 380 psig.• The MSIVs spuriously isolated 2 hours ago.• The cause of the isolation has been determined and corrected.• The isolation signal has been reset.• The reactor is critical at the Point of Adding Heat• Opening the MSIVs per 04-1-01-B21-1 Section 4.3 is in progress. Procedure completed up to opening the inboard MSIVs, Step 4.3.2.d(2)(c)• Steam lines have warmed for greater than 30 minutes. |
|--|

Initiating Cue(s):

- | |
|---|
| <ul style="list-style-type: none">• The CRS directs you to continue opening the MSIVs per 04-1-01-B21-1 Section 4.3, starting at Step 4.3.2.d(2)(c)• Another operator is in the control room to monitor the plant and respond to alarms not associated with opening the MSIVs. |
|---|

Open MSIVs; Steam Leak

Notes: (Notes to Evaluator)

- All controls and indications for this task are on panel 1H13-P601.

Task Overview: (Detailed description of task)

- This task is to open the Main Steam Isolation Valves (MSIVs) with the plant at approximately 350 psig per the SOI.
- When all inboard MSIVs are open, a steam leak will occur from Main Steam. MSIVs will fail to automatically isolate.
- The operator will isolate the steam leak by ensuring at least one MSIV is closed in each Main Steam line.

Open MSIVs; Steam Leak

Critical tasks are underlined, *italicized*, and denoted by an (*)

NOTE: The sequence of the following steps is critical unless otherwise noted.

Remember to record Start time

Step 1: 04-1-01-B21, Step 4.3.2.d(2)(c)	
☐ * <u>WHEN differential pressure across inboard MSIVs drops below 100 psid, AND lines have warmed for 30 min, OPEN MSIVs 1B21-F022A, B, C, AND D by PLACING MSL A, B, C, AND D DRWL INBD ISOL handswitches in AUTO.</u>	
Standard:	<u>Opens MSIV 1B21-F022A by rotating control switch clockwise to open</u> <u>Opens MSIV 1B21-F022B by rotating control switch clockwise to open</u> <u>Opens MSIV 1B21-F022C by rotating control switch clockwise to open</u> <u>Opens MSIV 1B21-F022D by rotating control switch clockwise to open</u>
Cue:	
Notes:	Valves are controlled from H13-P601 section 18C. Order of valve opening is not critical.
Booth:	Once all 4 inboard MSIVs are open, activate trigger to cause steam leak
SAT / UNSAT	

Alternate Path begins with the next step, designated by "AP".

AP Step 2: EN-OP-120, Step 5.1.1 a 1.	
☐ MONITOR plant parameters effectively, balancing between scanning general plant parameters and focusing on critical plant parameters: Recognizes alarm P601-18A-A3(A4), MSL PIPE TNL CH-B(C) TEMP HI/INOP	
<u>Standard:</u>	Recognizes alarm P601-18A-A3(A4) alarm and MSIVs remain open.
<u>Cue:</u>	None.
<u>Notes:</u>	None
SAT / UNSAT	

AP Step 9: 04-1-02-1H13-P601-18A-A3(A4), Step 2.2	
☐ Refers to ARI AUTOMATIC ACTIONS • A main steam line isolation Will occur IF the other channel temperature alarms.	
<u>Standard:</u>	Refers to ARI to verify automatic actions have NOT occurred.
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

AP Step 10: EN-OP-120, Attachment 2, Control

- ☐* Take manual actions (in accordance with procedure direction, if available) when automatic actions do not occur:

Close all MSIVs

Standard: Ensures closed at least one MSIV in each Main Steam line:

- Main Steam Line A: 1B21-F022A and/or 1B21-F026A
- Main Steam Line B: 1B21-F022B and/or 1B21-F026B
- Main Steam Line C: 1B21-F022C and/or 1B21-F026C
- Main Steam Line D: 1B21-F022D and/or 1B21-F026D

Cue: If applicant requests direction from CRS, tell them to make a recommendation and then carry out that recommendation. If specifically asked for permission/concurrence on closing MSIVs, give permission/concurrence.

Notes: The evaluator may end the JPM after candidate completes response to the steam leak.

Remember to record stop time.

SAT / UNSAT

☐ Time Critical	☒ Alternate Path	Validation Time: 9 Min
Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> • All Inboard MSIVs are opened. • After steam leak occurs, all Main Steam lines are isolated by closure of at least one MSIV in each line. • Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results</u> (circle one): SAT UNSAT		
<u>Follow-up Questions:</u>		
<u>Follow-up Question Response:</u>		
<u>Comments / Feedback:</u>		

Give this page to the student**Initial Condition(s):**

- A plant startup is in progress.
- Reactor pressure is approximately 380 psig.
- The MSIVs spuriously isolated 2 hours ago.
- The cause of the isolation has been determined and corrected.
- The isolation signal has been reset.
- The reactor is critical at the Point of Adding Heat
- Opening the MSIVs per 04-1-01-B21-1 Section 4.3 is in progress. Procedure completed up to opening the inboard MSIVs, Step 4.3.2.d(2)(c)
- Steam lines have warmed for greater than 30 minutes.

Initiating Cue(s):

- The CRS directs you to continue opening the MSIVs per 04-1-01-B21-1 Section 4.3, starting at Step 4.3.2.d(2)(c)
- Another operator is in the control room to monitor the plant and respond to alarms not associated with opening the MSIVs.



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 S3
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024S3

JPM Title: Perform LPCS Surveillance

Facility Number: N/A
(If Bank or Modified from Bank)

JPM Attributes:

☒ New	☐ Modified	☐ Direct from bank
☐ Time Critical	☒ Alternate Path	Validation Time: 15 Min

Prepared By:	Tom Hooper Exam Developer	06/09/2023 Date
Ops Review:	S. Stuart/ M. Carr/ R. Smith 1 st Validation by Ops Rep or Ops Validation Crew	10/31/2023 Date
Validated By:	S. Stuart/ M. Carr/ R. Smith 2 nd Validation by Ops Validation Crew	10/31/2023 Date
Approved By:	G. Hargrove Facility Representative	11/5/2023 Date

Perform LPCS Surveillance

Setting:	Simulator
Type:	RO
Task:	CRO-G41/46-NORMAL-1
K&A:	209001 A4.01 (4.3)
Safety Function:	4 – Heat Removal from Core
10CFR55.45(a)	(3); (6); (8)
Performance:	Perform
Reference(s):	06-OP-1E21-Q-0006, LPCS Quarterly Functional Test
Handout(s)	06-OP-1E21-Q-0006, completed up to Attachment I, Step 5.3.2.q
# Manipulations:	3
# Critical Steps:	3
<u>Low Power:</u>	No
<u>Emergency/Abnormal:</u>	No
<u>RCA entry:</u>	No
<u>Engineered Safety Function:</u>	Yes

Simulator Setup/Required Plant Conditions:

- Reset Simulator to IC 256 with the plant at power (paired with S7)
- Ensure conditions are set up to continue 06-OP-1E21-Q-0006 at Attachment I, Step 5.3.2.q, including:
 - Start SSW A with RHR A HX in service per SOI 04-1-01-P41-1
 - Place the LPCS MOV TEST switch (1H13-P601-21B) in the TEST position.
- Markup 06-OP-1E21-Q-0006 to Attachment I, Step 5.3.2.q

Safety Concerns:

- None

Task Standard:

- Starts LPCS pump by placing handswitch to START position.
- Throttles open E21-F012, LPCS TEST RTN TO SUPP POOL on 1H13-P601-21C to establish flow above 5000 gpm to Suppression Pool as indicated on LPCS PUMP FLOW indicator on 1H13-P601-21B.
- Secures LPCS pump by placing handswitch to STOP position.
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Revision Statement:

- N/A

Perform LPCS Surveillance

Initial Condition(s):

- | |
|---|
| <ul style="list-style-type: none">• A plant is at rated power.• 06-OP-1E21-Q-0006, LPCS Quarterly Functional Test, is in progress.• The next step to be performed in the procedure is Attachment I, Step 5.3.2.q. |
|---|

Initiating Cue(s):

- | |
|--|
| <ul style="list-style-type: none">• The CRS has directed you to continue performance of 06-OP-1E21-Q-0006, LPCS Quarterly Functional Test, starting at Attachment I, Step 5.3.2.q. |
|--|

Perform LPCS Surveillance

Notes: (Notes to Evaluator)

- All controls will be from panel P601.
- Some indications will be on P870.

Task Overview: (Detailed description of task)

- This task is to perform 06-OP-1E21-Q-0006, LPCS Quarterly Functional Test.
- The LPCS pump will be started and flow to the Suppression Pool will be established.
- Then, annunciator P601-21A-A7, LPCS PMP OVERLOAD, will alarm, initiating an alternate path.
- The LPCS pump will be secured.

Step 2: 06-OP-1E21-Q-0006 Step 5.3.2.r	
☐ VERIFY that 1E21-F011, LPCI MIN FLO TO SUPP POOL, is OPEN OR AUTOMATICALLY OPENS on 1H13-P601-21C.	
<u>Standard:</u>	Observes 1E21-F011 green light off, red light on, on 1H13-P601-21C.
<u>Cue:</u>	NONE
<u>Notes:</u>	
SAT / UNSAT	

Step 3: 06-OP-1E21-Q-0006 Step 5.3.2.s	
☐ VERIFY that LPCS RM FAN COIL UNIT automatically starts on 1H13-P870-1C.	
<u>Standard:</u>	Observes LPCS RM FAN COIL UNIT green light off, red light on, on 1H13-P870-1C.
<u>Cue:</u>	NONE
<u>Notes:</u>	
SAT / UNSAT	

Step 4: 06-OP-1E21-Q-0006 Step 5.3.2.t

☐ **VERIFY** that “ADS A/RHR A PERM” annunciator, 1H13-P870-17A (E2), alarms.

Standard: Observes that “ADS A/RHR A PERM” annunciator, 1H13-P870-17A (E2), alarms.

Cue: **NONE**

Notes:

SAT / UNSAT

Step 5: 06-OP-1E21-Q-0006 Step 5.3.2.u

☐ * ***THROTTLE OPEN 1E21-F012, LPCS TEST RTN TO SUPP POOL on 1H13-P601-21C to establish flow between 7284 to 7356 gpm to Suppression Pool as indicated on LPCS PUMP FLOW indicator on 1H13-P601-21B.***

Standard: Rotates 1E21-F012 control switch to OPEN as necessary to establish >5000 gpm flow to the Suppression Pool.

Cue: **NONE**

Notes:

After the applicant has achieved ~6000 gpm flow, Trigger 1 will automatically insert to initiate the alternate path in the next step.

SAT / UNSAT

AP Step 6: ARI P601-21A-A7

- ☐ Recognizes annunciator P601-21A-A7, LPCS PMP OVERLD, and refers to associated ARI

- Standard:**
1. Recognizes annunciator P601-21A-A7.
 2. Refers to ARI P601-21A-A7.

- Cue:**
- If asked to check the pump locally, report that the pump is operating louder and hotter than normal.**
- If asked to check ESF bus voltage, report that ESF bus voltage is normal.**
- If asked how to proceed, tell the applicant to make a recommendation and then carry out that recommendation.**
- If specifically asked for permission to reduce flow or stop the LPCS pump, give permission.**

- Notes:**
- The applicant may perform additional actions, such as verifying flow, attempting to throttle closed E12-MOV-F012, or checking ESF bus voltage per the ARI. Only the critical step from the ARI is scripted below.**

SAT / UNSAT

AP Step 7: ARI P601-21A-A7 Step 4.2	
☐ * <i>If unable to reduce the LPCS pump motor amps, ensure sufficient core makeup is being provided, and shut down LPCS pump.</i>	
<u>Standard:</u>	Places LPCS pump control switch on 1H13-P601-21C to STOP position.
<u>Cue:</u>	NONE
<u>Notes:</u>	After the applicant has stopped the LPCS pump, the evaluator may stop the JPM. <i>Record stop time on next page.</i> SAT / UNSAT

Perform LPCS Surveillance

☐ Time Critical	☐ Alternate Path	Validation Time: 10 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____ CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> - Starts LPCS pump by placing handswitch to START position. - Throttles open E21-F012, LPCS TEST RTN TO SUPP POOL on 1H13-P601-21C to establish flow above 5000 gpm to Suppression Pool as indicated on LPCS PUMP FLOW indicator on 1H13-P601-21B. - Secures LPCS pump by placing handswitch to STOP position. - Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results (circle one):</u> SAT UNSAT		
<u>Follow-up Questions:</u> <u>Follow-up Question Response:</u>		
<u>Comments / Feedback:</u>		

Give this page to the applicant

Initial Condition(s):

- A plant is at rated power.
- 06-OP-1E21-Q-0006, LPCS Quarterly Functional Test, is in progress.
- The next step to be performed in the procedure is Attachment I, Step 5.3.2.q.

Initiating Cue(s):

- The CRS has directed you to continue performance of 06-OP-1E21-Q-0006, LPCS Quarterly Functional Test, starting at Attachment I, Step 5.3.2.q.



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 S4
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024S4

JPM Title: Perform Attachment 14, Containment
Venting

Facility Number: GJPM-OPS-EOP14
(If Bank or Modified from Bank)

JPM Attributes:

☐ New	☐ Modified	☒ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Prepared By:	Richard Bolduc	12/13/23
	Exam Developer	Date
Ops Review:	Clayton Bowlin	12/13/23
	1 st Validation by Ops Rep or Ops Validation Crew	Date
Validated By:	Clayton Bowlin	12/13/23
	2 nd Validation by Ops Validation Crew	Date
Approved By:	G. Hargrove	12/13/23
	Facility Representative	Date

Perform Attachment 14 - Containment Venting

☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Setting: Simulator
 Type: RO
 Task: CRO-EP-014 VENT CONTAINMENT (EP-1 Attachment 14)
 K&A: 223001 A2.06 (4.0/4.1)
 Safety Function: 5, Containment Integrity
 PRA Applicability: Failure to vent containment with high pressure is ranked #5 on Operator Action Importance to CDF.
 10CFR 55.45(a) (2), (6), (8) & (10)
 Performance: Simulated
 Reference(s): 05-S-01-EP-1 Rev 42
 Handout(s): 05-S-01-EP-1, Attachment 14 with steps 2.1, 2.2, and 2.3 complete
 # Manipulations: 4
 # Critical Steps: 4
 Low Power: YES
 Emergency/Abnormal: YES
 RCA entry: No
 Engineered Safety Function: No

Simulator Setup/Required Plant Conditions:

- Reset simulator to IC-260

OR

Reset to any IC

- Display H13-P842 on V-Panel and verify that hand switches for M41-C002A and B are in STOP position.
- Manually initiate SPMU to cause high suppression pool level
- Allow condition to stabilize and save the IC.

Safety Concerns:

- None.

Perform Attachment 14 - Containment Venting

Task Standard:

- Opens valve E61-F057 by turning the valve's handswitch on P870 in the OPEN direction.
- Opens valve E61-F056 by turning the valve's handswitch on P870 in the OPEN direction.
- Using V-Panel, starts both Containment Exhaust Charcoal Filter Train fans by placing CTMT CLG VENT EXHAUST FAN A and B (M41C002 A/B) handswitches to START on P842

Perform Attachment 14 - Containment Venting

Initial Condition(s):

- | |
|--|
| <ul style="list-style-type: none">• An event occurred requiring an Alert Emergency Classification• An inadvertent actuation of Suppression Pool Makeup has resulted in high suppression pool level.• EP3 has been entered to control high suppression pool level.• Containment pressure is 0.3 psig |
|--|

Initiating Cue(s):

- | |
|---|
| <ul style="list-style-type: none">• You have been directed to perform containment venting per EP-1 Attachment 14 steps 2.4 through 2.6 using both Containment Cooling exhaust fans.• No Containment or Secondary Containment Isolation signal is present for M41 and E61 valves.• The Emergency Director has been notified that an unfiltered release will occur during venting of the containment. |
|---|

Perform Attachment 14 - Containment Venting

Notes: (Notes to Evaluator)

- All controls and indications for this task are on panel 1H13-P870.

Task Overview: (Detailed description of task)

- Performance of this task vents the primary containment via 6-inch ventilation lines with no Containment or Secondary Containment Isolation signal present for M41 and E61 valves.

EP-1 Attachment 14 - Containment Venting

Critical tasks are underlined, *italicized*, and denoted by an (*)

NOTE: The sequence of the following steps is critical unless otherwise noted.

Remember to record Start Time

Step 1: 05-S-01-EP-1, Att. 14 Step 2.4	
☐ * <u>OPEN E61F057 PURGE EXH CTMT OTBD ISO VLV on 1H13-P870-4C.</u>	
<u>Standard:</u>	Opens valve E61-F057 by turning the valve's handswitch on P870 in the OPEN direction.
<u>Cue:</u>	None.
<u>Notes:</u>	
SAT / UNSAT	

Step 2; 05-S-01-EP-1, Att. 14 Step 2.5	
☐ * <u>OPEN E61F056 PURGE EXH CTMT INBD ISO VLV on 1H13-P870-10C.</u>	
<u>Standard:</u>	Opens valve E61-F056 by turning the valve's handswitch on P870 in the OPEN direction.
<u>Cue:</u>	None.
<u>Notes:</u>	
SAT / UNSAT	

Step 3; 05-S-01-EP-1, Att. 14 Step 2.6

☐ * **START** one **OR** Both Containment Exhaust Charcoal Filter Train fans by **PLACING** CTMT CLG VENT EXHAUST FAN M41 C002A **AND/OR** M41 C002B on 1H13-P842 handswitch to **START**.

Standard: Using V-Panel, starts both Containment Exhaust Charcoal Filter Train fans by placing CTMT CLG VENT EXHAUST FAN A AND/OR B (M41C002 A/B) handswitch to START on P842.

Cue: If operator informs the evaluator that the P842 is not simulated in the Simulator, reply to the operator to use the V-Panel.

Notes: P842 is a Control Room backpanel NOT installed in the Simulator. P842 is on the V-Panel in the simulator.

After Attachment 14 steps are complete the evaluator may stop the JPM.

Remember to record stop time

SAT / UNSAT

EP-1 Attachment 14 - Containment Venting

☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Operator: _____ Date: _____	
Evaluators Name: _____ Evaluators Signature: _____	
Start Time: _____ Stop Time: _____ CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____	
Task Standard(s): • Opens valve E61-F057 by turning the valve's handswitch on P870 in the OPEN direction. • Opens valve E61-F056 by turning the valve's handswitch on P870 in the OPEN direction. • Using V-Panel, starts both Containment Exhaust Charcoal Filter Train fans by placing CTMT CLG VENT EXHAUST FAN A and B (M41C002 A/B) handswitches to START on P842.	
JPM Results (circle one): SAT UNSAT	
<u>Follow-up Questions:</u> <u>Follow-up Question Response:</u> 	
<u>Comments / Feedback:</u> 	

Give this page to the student

Initial Condition(s):

- An event occurred requiring an Alert Emergency Classification
- An inadvertent actuation of Suppression Pool Makeup has resulted in high suppression pool level.
- EP3 has been entered to control high suppression pool level.
- Containment pressure is 0.3 psig

Initiating Cue(s):

- You have been directed to perform containment venting per EP-1 Attachment 14 steps 2.4 through 2.6 using both Containment Cooling exhaust fans.
- No Containment or Secondary Containment Isolation signal is present for M41 and E61 valves.
- The Emergency Director has been notified that an unfiltered release will occur during venting of the containment.



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 S5
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024S5

JPM Title: Withdraw SRMs

Facility Number: N/A
(If Bank or Modified from Bank)

JPM Attributes:

☒ New	☐ Modified	☐ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 10 Min

Prepared By:	Tom Hooper Exam Developer	06/09/2023 Date
Ops Review:	S. Stuart/ M. Carr/ R. Smith 1 st Validation by Ops Rep or Ops Validation Crew	10/31/2023 Date
Validated By:	S. Stuart/ M. Carr/ R. Smith 2 nd Validation by Ops Validation Crew	10/31/2023 Date
Approved By:	G. Hargrove Facility Representative	11/5/2023 Date

Withdraw SRMs

Setting:	Simulator
Type:	RO
Task:	CRO-C51-NORMAL-4
K&A:	215004 A4.04 (3.5)
Safety Function:	7 – Instrumentation
10CFR55.45(a)	(1); (2); (4); (6)
Performance:	Perform
Reference(s):	04-1-01-C51-1, Neutron Monitoring SOI
Handout(s)	04-1-01-C51-1, Neutron Monitoring SOI, P&Ls and Section 4.2 complete to step 4.2.2b
# Manipulations:	16
# Critical Steps:	6
Low Power:	YES
Emergency/Abnormal:	No
RCA entry:	No
Engineered Safety Function:	No

Withdraw SRMs

Simulator Setup/Required Plant Conditions:

- Reset Simulator to IC-258 (paired with S2)
- Ensure the following:
 - Plant startup is in progress
 - SRMs are partially withdrawn and ready to be fully withdrawn
 - SRMs reading $\sim 10^5$ cps
 - All SRM drives are de-selected
 - SRM/IRM drive power is off
 - All IRMs properly ranged
- Markup SOI complete to step 4.2.2b

Withdraw SRMs

Safety Concerns:

- None

Revision Statement:

- N/A

Task Standard:

- SRM/IRM drive power is turned on
- SRM detectors are selected for driving
- SRM DRIVE OUT is selected
- SRM DRIVE OUT is de-selected
- All SRM detectors are de-selected for driving
- SRM/IRM drive power is turned off
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Initial Condition(s):

- | |
|--|
| <ul style="list-style-type: none">• A plant startup is in progress.• SRMs are partially withdrawn.• It is desire to fully withdraw all SRMs. |
|--|

Initiating Cue(s):

- | |
|---|
| <ul style="list-style-type: none">• The CRS directs you to fully withdraw all SRMs per 04-1-01-C51-1 section 4.2.2.• The procedure is in progress at step 4.2.2b.• All Prerequisites are met. |
|---|

Withdraw SRMs

Notes to Evaluator:

- All controls will be from panel P680 in the Main Control Room.
- Remember to record Start time.

Task Overview: (Detailed description of task)

- This task is to fully withdraw all SRMs.
- The task includes de-selecting DRIVE OUT, de-selecting each SRM, and turning off power to ensure the system is returned to a normal lineup to prevent inadvertent detector movement.

Withdraw SRMs

Critical tasks are underlined, *italicized*, and denoted by an (*)

NOTE: The sequence of the following steps is critical unless otherwise noted.

Remember to record Start time

Step 1: 04-1-01-C51-1, Step 4.2.2b	
☐ * <u>DEPRESS the SRM/IRM detector drive POWER ON pushbutton on 1H13P680.</u>	
<u>Standard:</u>	Depresses the SRM/IRM detector drive POWER ON pushbutton.
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 2: 04-1-01-C51-1, Step 4.2.2b(1)

☐ OBSERVE pushbutton backlight goes On.

Standard: Observes SRM/IRM detector drive POWER ON pushbutton backlight is On.

Cue: None.

Notes: None.

SAT / UNSAT

Step 3: 04-1-01-C51-1, Step 4.2.2c

☐* To operate detector drives, PROCEED as follows:

(1) SELECT desired detector drive(s) by DEPRESSING the appropriate SRM/IRM SEL pushbutton.

Standard: Depresses one or more of the following pushbuttons:

- SRM A SEL
- SRM B SEL
- SRM C SEL
- SRM D SEL
- SRM E SEL
- SRM F SEL

Cue: If asked, tell the applicant that one or more SRMs may be withdrawn at the same time.

Notes: Applicant may move individual SRM detectors and repeat procedure until all SRMs are full out or the applicant may move multiple SRMs at a time.

SAT / UNSAT

Step 4: 04-1-01-C51-1, Step 4.2.2c(1)(a)	
☐ OBSERVE pushbutton backlight On.	
<u>Standard:</u>	Observes the selected pushbutton backlights are On: • SRM A SEL • SRM B SEL • SRM C SEL • SRM D SEL • SRM E SEL • SRM F SEL
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 5: 04-1-01-C51-1, Step 4.2.2c(2)	
☐ * <u>INSERT OR WITHDRAW detector(s) by DEPRESSING DRIVE IN OR DRIVE OUT pushbutton.</u>	
<u>Standard:</u>	Depresses DRIVE OUT pushbutton
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 6: 04-1-01-C51-1, Step 4.2.2c(2)(a)	
☐ OBSERVE DRIVING IN OR DRIVING OUT backlights is On.	
<u>Standard:</u>	Observes DRIVING OUT backlight is On
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 7: 04-1-01-C51-1, Step 4.2.2c(2)(b)	
☐ As detector(s) move out of the core, OBSERVE the individual IN lights go out. Reverse sequence occurs for detector insertion	
<u>Standard:</u>	Observes individual SRM IN lights are Off
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 8: 04-1-01-C51-1, Step 4.2.2c(2)(c)	
☐	AFTER about three 1/2 minutes of continuous drive, the individual OUT lights light indicating detector is fully withdrawn. Reverse sequence occurs for detector insertion.
<u>Standard:</u>	Observes individual SRM OUT lights are On
<u>Cue:</u>	None.
<u>Notes:</u>	Driving out will take less than 3 ½ minutes because SRMs were already partially withdrawn.
SAT / UNSAT	

Step 9: 04-1-01-C51-1, Step 4.2.2c(2)(d)	
☐	* <u>WHEN detectors are moved to desired position, DEPRESS DRIVE IN OR DRIVE OUT pushbutton AND OBSERVE pushbutton backlights go out.</u>
<u>Standard:</u>	After SRM OUT lights are On, depresses DRIVE OUT pushbutton
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 10: 04-1-01-C51-1, Step 4.2.2c(3)	
☐ * <u>DEPRESS backlit SRM/IRM SEL pushbutton to deselect detector drives.</u>	
<u>Standard:</u>	Depresses the following pushbuttons: • SRM A SEL • SRM B SEL • SRM C SEL • SRM D SEL • SRM E SEL • SRM F SEL
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 11: 04-1-01-C51-1, Step 4.2.2c(3)(a)	
☐ OBSERVE backlights go out.	
<u>Standard:</u>	Observes the following pushbutton backlights are Off: • SRM A SEL • SRM B SEL • SRM C SEL • SRM D SEL • SRM E SEL • SRM F SEL
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 12: 04-1-01-C51-1, Step 4.2.2c(4)	
☐ * <u>DEPRESS POWER ON pushbutton.</u>	
<u>Standard:</u>	Depresses the SRM/IRM detector drive POWER ON pushbutton.
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 13: 04-1-01-C51-1, Step 4.2.2c(4)(a)	
☐ OBSERVE backlight goes out.	
<u>Standard:</u>	Observes SRM/IRM detector drive POWER ON pushbutton backlight is Off
<u>Cue:</u>	The JPM is complete.
<u>Notes:</u>	<i>Remember to record stop time</i> SAT / UNSAT

Withdraw SRMs

☐ Time Critical	☐ Alternate Path	Validation Time: 10 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> - SRM/IRM drive power is turned on - SRM detectors are selected for driving - SRM DRIVE OUT is selected - SRM DRIVE OUT is de-selected - All SRM detectors are de-selected for driving - SRM/IRM drive power is turned off - Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results (circle one):</u> SAT UNSAT		
<u>Follow-up Questions:</u> 		
<u>Follow-up Question Response:</u> 		
<u>Comments / Feedback:</u> 		

Give this page to the student

Initial Condition(s):

- A plant startup is in progress.
- SRMs are partially withdrawn.
- It is desire to fully withdraw all SRMs.

Initiating Cue(s):

- The CRS directs you to fully withdraw all SRMs per 04-1-01-C51-1 section 4.2.2.
- The procedure is in progress at step 4.2.2b.
- All Prerequisites are met.



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 S6
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024S6

JPM Title: Swap Plant Air Compressors

Facility Number: N/A
(If Bank or Modified from Bank)

JPM Attributes:

☒ New	☐ Modified	☐ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 7 Min

Prepared By:	Tom Hooper Exam Developer	06/09/2023 Date
Ops Review:	S. Stuart/ M. Carr/ R. Smith 1 st Validation by Ops Rep or Ops Validation Crew	10/31/2023 Date
Validated By:	S. Stuart/ M. Carr/ R. Smith 2 nd Validation by Ops Validation Crew	10/31/2023 Date
Approved By:	G. Hargrove Facility Representative	11/5/2023 Date

Swap Plant Air Compressors

Setting:	Simulator
Type:	RO
Task:	CRO-C11(1)-008
K&A:	300000 A4.02 (3.5)
Safety Function:	8 – Plant Service Systems
10CFR55.45(a)	(6)
Performance:	Perform
Reference(s):	04-1-01-P51-1
Handout(s)	04-1-01-P51-1, P&Ls and Sections 4.7 and 4.9
# Manipulations:	2
# Critical Steps:	2
Low Power:	No
Emergency/Abnormal:	No
RCA entry:	No
Engineered Safety Function:	No

Simulator Setup/Required Plant Conditions:

- Reset Simulator to IC-254 (paired with S1)
- Ensure the following:
 - Plant Air Compressor A is in standby.
 - Plant Air Compressor B is operating.
 - Plant Air Compressor C is shutdown.
 - Place remote P50C001A, Plant Air Compressor A Local Switch to OFF and verify STANDBY light goes out.
 - Place remote P50C001B, Plant Air Compressor B Local Switch, on an event trigger with a final value of STANDBY

Markup 04-1-01-P51-1 section 4.7 complete up to step 4.7.2.b.

Safety Concerns:

- None

Revision Statement:

- N/A

Task Standard:

- Starts Plant Air Compressor A by placing control room handswitch to START.
- Stops Plant Air Compressor B by placing control room handswitch to STOP.
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Initial Condition(s):

- | |
|--|
| <ul style="list-style-type: none">• The plant is operating at 100% power• The Plant Air Compressors (PAC) need to be rotated to equalize run time.• Prerequisites for starting PAC A (section 4.7.2.a) complete. |
|--|

Initiating Cue(s):

- | |
|--|
| <ul style="list-style-type: none">• The CRS directs you to:<ul style="list-style-type: none">○ Start PAC A per 04-1-01-P51-1 section 4.7. The procedure is in progress up to step 4.7.2. b. It is desired to use Control Room controls to start PAC A.○ Then, stop Plant Air Compressor B per 04-1-01-P51-1 section 4.9. It is desired to use Control Room controls to stop PAC B. It is desired to use local controls to place PAC B in STANDBY. |
|--|

Swap Plant Air Compressors

Notes to Evaluator:

- All controls will be from panels P870 and P854 in the Main Control Room.
- Remember to record Start time.

Task Overview: (Detailed description of task)

- This task is to rotate Plant Air Compressors per SOI. Plant Air Compressor A will be started. Plant Air Compressor B will be stopped and placed in Standby.

Swap Plant Air Compressors

Critical tasks are underlined, *italicized*, and denoted by an (*)

NOTE: The sequence of the following steps is critical unless otherwise noted.

Remember to record Start time

Step 1: 04-1-01-P51-1, Step 4.7.2.b	
☐ * <u><i>IF desired to start Plant Air Compressor A(B)(C) from Control Room, THEN PLACE the PLANT AIR COMPR B (C) handswitch on SH13-P854 to START</i></u> <u><i>AND/OR</i></u> <u><i>1H13P870 for A to START.</i></u>	
<u>Standard:</u>	Places Control Room handswitch for Plant Air Compressor A to START.
<u>Cue:</u>	None.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 4: 04-1-01-P51-1, Step 4.9.1.a &b	
☐	Prerequisites: Plant Air Compressor B is NOT required to maintain Service Air OR Instrument Air header pressure. Plant Air Compressor A(C) Running.
<u>Standard:</u>	Determine PAC B not required, and PAC A is running
<u>Cue:</u>	None
<u>Notes:</u>	This is performed at P854.
SAT / UNSAT	

Step 4: 04-1-01-P51-1, Step 4.9.2.a	
☐	* <u>IF desired to shutdown Plant Air Compressor B from Control Room, THEN PLACE the PLANT AIR COMPR B handswitch on SH13-P854 to STOP.</u>
<u>Standard:</u>	Places Control Room handswitch for Plant Air Compressor B to STOP.
<u>Cue:</u>	If operator attempts to dispatch another operator to perform this in the field, tell them that is desired to perform this from the Control Room.
<u>Notes:</u>	This is performed at P854.
SAT / UNSAT	

Step 6: 04-1-01-P51-1, Step 4.9.2.c	
☐ IF desired to place Plant Air Compressor B in standby, THEN PERFORM the following: VERIFY Oil level for Plant Air Compressor B is between high AND low mark on sight glass..	
<u>Standard:</u>	Dispatches operator to verify oil level for Plant Air Compressor B.
<u>Cue:</u>	Report oil level for Plant Air Compressor B is halfway between the is between high AND low mark on sight glass.
<u>Notes:</u>	None.
SAT / UNSAT	

Step 7: 04-1-01-P51-1, Step 4.9.2.c(2)	
☐ * DEPRESS the STANDBY pushbutton on local control panel.	
<u>Standard:</u>	Dispatches operator to depress the STANDBY pushbutton on local control panel for Plant Air Compressor B.
<u>Cue:</u>	When reported by booth operator, report that PAC B is in STANDBY.
<u>Notes:</u>	Booth Operator – When this is requested, insert remote P51C001B (or activate trigger), Plant Air Compressor B Local Switch, in STANDBY. Then, report task completion. After informing candidate that PAC B is in STANDBY, the JPM can be stopped. <i>Remember to record stop time</i>
SAT / UNSAT	

Swap Plant Air Compressors

☐ Time Critical	☐ Alternate Path	Validation Time: 7 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> - Starts Plant Air Compressor A by placing control room handswitch to START. - Stops Plant Air Compressor B by placing control room handswitch to STOP. - Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results (circle one):</u> SAT UNSAT		
<u>Follow-up Questions:</u> 		
<u>Follow-up Question Response:</u> 		
<u>Comments / Feedback:</u> 		

Give this page to the student

Initial Condition(s):

- The plant is operating at 100% power
- The Plant Air Compressors (PAC) need to be rotated to equalize run time.
- Prerequisites for starting PAC A (section 4.7.2.a) complete.

Initiating Cue(s):

- The CRS directs you to:
 - Start PAC A per 04-1-01-P51-1 section 4.7. The procedure is in progress up to step 4.7.2. b. It is desired to use Control Room controls to start PAC A.
 - Then, stop Plant Air Compressor B per 04-1-01-P51-1 section 4.9. It is desired to use Control Room controls to stop PAC B. It is desired to use local controls to place PAC B in STANDBY.



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 S7
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024S7

JPM Title: Perform ARM Functional Test

Facility Number: GJPM-OPS-D2101

(If Bank or Modified from Bank)

JPM Attributes:

☐ New	☐ Modified	☒ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Prepared By:	Tom Hooper	06/09/2023
	Exam Developer	Date
Ops Review:	S. Stuart/ M. Carr/ R. Smith	10/31/2023
	1 st Validation by Ops Rep or Ops Validation Crew	Date
Validated By:	S. Stuart/ M. Carr/ R. Smith	10/31/2023
	2 nd Validation by Ops Validation Crew	Date
Approved By:	G. Hargrove	11/5/2023
	Facility Representative	Date

Perform ARM Functional Test

Setting:	Simulator
Type:	RO
Task:	CRO-D21-003
K&A:	272000 A4.02 (3.2)
Safety Function:	9 – Radioactivity Release
10CFR55.45(a)	(9)
Performance:	Perform
Reference(s):	04-1-03-D21-1, Monthly Area Radiation Monitors Functional Test
Handout(s)	04-1-03-D21-1, Monthly Area Radiation Monitors Functional Test, front matter and Attachment I, marked up to perform test for 1D21-RITS-K601, including step 5.2.b
# Manipulations:	12
# Critical Steps:	9
Low Power:	No
Emergency/Abnormal:	No
RCA entry:	No
Engineered Safety Function:	No

Perform ARM Functional Test

Simulator Setup/Required Plant Conditions:

- Reset simulator to any IC (can be paired with any JPM)
- Override annunciator P680-4A1-E6 **OFF**.

Safety Concerns:

- None

Task Standard:

- Places Module 1D21-RITS-K601 Function Switch in OFF
- Places Module 1D21-RITS-K601 Function Switch in OPERATE
- Depresses and holds Module 1D21-RITS-K601 yellow TEST ALARM pushbutton
- Releases Module 1D21-RITS-K601 yellow TEST ALARM pushbutton
- Depresses and releases Module 1D21-RITS-K601 red HIGH ALARM/RESET pushbutton
- Depresses Module 1D21-RITS-K601 green FAIL SAFE/CHECK SOURCE pushbutton
- Releases Module 1D21-RITS-K601 green FAIL SAFE/CHECK SOURCE pushbutton
- Places Module 1D21-RITS-K601 function switch to ALARM
- Releases Module 1D21-RITS-K601 function switch to NORMAL
- Depresses and releases the red High Alarm Reset pushbutton
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Initial Condition(s):

- | |
|---|
| <ul style="list-style-type: none">• The plant is operating at 100% power.• I&C has completed repair work on 1D21-RITS-K601, RHR Room A Area Radiation Monitor, and the ARM is ready for Operations retest.• 1D21-RITS-K601 has been checked to be in operation per 04-1-01-D21-1. |
|---|

Initiating Cue(s):

- | |
|--|
| <ul style="list-style-type: none">• The CRS has directed you to perform 04-1-03-D21-1 Attachment I for 1D21-RITS-K601 as a retest. Begin at step 1.2.1.• Use the retest package provided.• Another RO is assigned to manage any associated alarms on H13-P680.• Prerequisites are complete. |
|--|

Notes to Evaluator:

- All controls and indications for this task are on back panel 1H13-P844.
- Remember to record Start time.

Task Overview

- This task is to perform the Monthly Area Radiation Monitors Functional Test for RHR Room A ARM.
- The evaluator will role play as the P680 operator responding to the expected AREA RAD PANEL P844 alarm (P680-4A1-E6) that occurs as a result of this testing. That alarm is overridden OFF in this JPM to prevent interrupting concurrent JPMs within the control room main panel area.

Perform ARM Functional Test

Critical tasks are underlined, *italicized*, and denoted by an (*)

Sequence for the following steps is not critical unless otherwise denoted.

Step 1: 04-1-03-D21-1 Attachment I, Step 1.2.1
☐ CONFIRM 1D21-RITS-K601 in OPERATION PER 04-1-01-D21-1, Area Radiation Monitoring System.
<u>Standard:</u> Completes based on JPM Initial Conditions.
<u>Cue:</u> None
<u>Notes:</u> SAT / UNSAT

Step 2: 04-1-03-D21-1 Attachment I, Step 1.2.2
☐ * <u>At 1H13-P844, Module 1D21-RITS-K601, PLACE Function Switch in OFF</u>
<u>Standard:</u> Selects OFF on Function switch of 1D21-RITS-K601 by rotating the switch counter-clockwise to OFF, then initials the step on the Attachment I.
<u>Cue:</u> None
<u>Notes:</u> SAT / UNSAT

Step 3: 04-1-03-D21-1 Attachment I, Step 1.2.2.a	
☐ CONFIRM 1H13-P844-2A-A5, AREA RADIATION MONITORING SYSTEM FAILURE, ALARM.	
<u>Standard:</u>	Observes annunciator AREA RADIATION MONITORING SYSTEM FAILURE alarms (P844-2A-A5), then initials the step on the Attachment I.
<u>Cue:</u>	None
<u>Notes:</u>	
SAT / UNSAT	

Step 4: 04-1-03-D21-1 Attachment I, Step 1.2.2.b	
☐ CONFIRM 1H13-P680-4A1-E6, AREA RAD PNL P844 TROUBLE, ALARM.	
<u>Standard:</u>	Requests the RO to verify AREA RAD PNL P844 TROUBLE annunciates on P680.
<u>Cue:</u>	As RO, tell the candidate P680 annunciator AREA RAD PNL P844 TROUBLE is in alarm.
<u>Notes:</u>	
SAT / UNSAT	

Step 5: 04-1-03-D21-1 Attachment I, Step 1.2.2.c	
☐ CONFIRM green Fail Safe light, OFF.	
<u>Standard:</u>	Observes the green FAIL SAFE indicator/CHECK SOURCE pushbutton on the monitor face of 1D21-RITS-K601 backlight is off, then initials the step on Attachment I.
<u>Cue:</u>	None
<u>Notes:</u>	SAT / UNSAT

Step 6: 04-1-03-D21-1 Attachment I, Step 1.2.3	
☐ * <u>PLACE Function Switch in OPERATE.</u>	
<u>Standard:</u>	Selects OPERATE on Function switch of 1D21-RITS-K601 by rotating the switch clockwise to OPERATE, then initials the step on Attachment I.
<u>Cue:</u>	None
<u>Notes:</u>	SAT / UNSAT

Step 7: 04-1-03-D21-1 Attachment I, Step 1.2.3.a	
☐ CONFIRM green Fail Safe light, ON.	
<u>Standard:</u>	Verifies FAIL SAFE green light is lit.
<u>Cue:</u>	None.
<u>Notes:</u>	
SAT / UNSAT	

Step 8: 04-1-03-D21-1 Attachment I, Step 1.2.3.b	
☐ RESET 1H13-P680-4A1-E6, AREA RAD PNL P844 TROUBLE.	
<u>Standard:</u>	Requests the RO to reset AREA RAD PNL P844 TROUBLE annunciator on P680.
<u>Cue:</u>	As RO, tell the candidate P680 annunciator AREA RAD PNL P844 TROUBLE is reset.
<u>Notes:</u>	
SAT / UNSAT	

Step 9: 04-1-03-D21-1 Attachment I, Step 1.2.3.c

☐ At 1D21-R600, AREA RAD MON REC SELECT point #1.

Standard: Simulates displaying recorder point #1 on recorder 1D21-R600 on P844 by depressing the up or down arrow keys until PT#1 is displayed, or by depressing 01 on the number keypad and depressing enter, then initials the step on Attachment I.

Cue: When candidate simulates selection of PT#1, state that PT#1 is indicating the same as K601 meter indication

Notes: 1D21-R600 is not powered in the simulator. All indications will be cued during the JPM with "PT#1 is responding the same as K601 meter indication."

SAT / UNSAT

Step 10: 04-1-03-D21-1 Attachment I, Step 1.2.4

☐ * DEPRESS and HOLD yellow TEST ALARM pushbutton.

Standard: Depresses and holds the yellow TEST ALARM pushbutton on the bottom of the monitor face.

Cue: None

Notes:

SAT / UNSAT

Step 11: 04-1-03-D21-1 Attachment I, Step 1.2.4.a/b
☐ a. OBSERVE rising meter indication b. At 1D21-R600, OBSERVE Point #1 travels upscale.
<u>Standard:</u> Verifies meter indication on 1D21-RITS-K601 and point # 1 on Recorder D21R600 on P844 travel fully upscale.
<u>Cue:</u> State that PT#1 is responding the same as K601 meter indication
<u>Notes:</u> SAT / UNSAT

Step 12: 04-1-03-D21-1 Attachment I, Step 1.2.4.c
☐ CONFIRM 1H13-P844-1A-D4, EMERGENCY CORE COOLING ROOMS RADIATION HIGH, ALARM.
<u>Standard:</u> Verifies annunciator EMERGENCY CORE COOLING ROOM RADIATION HIGH alarms (P844-1A-D4).
<u>Cue:</u> None
<u>Notes:</u> SAT / UNSAT

Step 13: 04-1-03-D21-1 Attachment I, Step 1.2.4.d

☐ CONFIRM 1H13-P680-4A1-E6, AREA RAD PNL P844 TROUBLE, ALARM.

Standard: Requests the RO to verify AREA RAD PNL P844 TROUBLE annunciates on P680.

Cue: As RO, tell the candidate P680 annunciator AREA RAD PNL P844 TROUBLE is in alarm.

Notes:

SAT / UNSAT

Step 14: 04-1-03-D21-1 Attachment I, Step 1.2.5

☐ * RELEASE yellow TEST ALARM pushbutton.

Standard: Releases the yellow TEST ALARM pushbutton on the bottom of the monitor face, then initials the associated steps on the Attachment I.

Cue: None

Notes:

SAT / UNSAT

Step 15: 04-1-03-D21-1 Attachment I, Step 1.2.5.a

☐ CONFIRM red High Alarm light is ON..

Standard: Observes the red HIGH ALARM indicator/RESET pushbutton on the monitor face of 1D21-RITS-K601 backlight is on, then initials the step on the Attachment I.

Cue: None

Notes:

SAT / UNSAT

Step 16: 04-1-03-D21-1 Attachment I, Step 1.2.6

☐ * DEPRESS AND RELEASE red HIGH ALARM/RESET pushbutton.

Standard: Depresses and releases the red HIGH ALARM indicator/RESET pushbutton on the bottom of the monitor face, then initials the step on Attachment I.

Cue: None

Notes:

SAT / UNSAT

Step 17: 04-1-03-D21-1 Attachment I, Step 1.2.6.a	
☐ CONFIRM red High Alarm Light, OFF.	
<u>Standard:</u>	Observes the red HIGH ALARM indicator/RESET pushbutton on the monitor face of 1D21-RITS-K601 backlight is off, then initials the step on Attachment I.
<u>Cue:</u>	None
<u>Notes:</u>	
SAT / UNSAT	

Step 18: 04-1-03-D21-1 Attachment I, Step 1.2.6.b	
☐ ENSURE 1H13-P844-1A-D4, EMERGENCY CORE COOLING ROOMS RADIATION HIGH, CLEAR.	
<u>Standard:</u>	Resets annunciator EMERGENCY CORE COOLING ROOMS RADIATION HIGH (P844-1A-D4), then initials the step on the Attachment I.
<u>Cue:</u>	None
<u>Notes:</u>	
SAT / UNSAT	

Step 19: 04-1-03-D21-1 Attachment I, Step
1.2.6.c

☐ ENSURE 1H13-P680-4A1-E6, AREA RAD PNL P844 TROUBLE, CLEAR.

Standard: Requests the RO to reset AREA RAD PNL P844 TROUBLE annunciator on P680.

Cue: As RO, tell the candidate P680 annunciator AREA RAD PNL P844 TROUBLE is reset.

Notes:

SAT / UNSAT

Step 20: 04-1-03-D21-1 Attachment I, Step
1.2.7

☐* Depresses and holds green FAIL SAFE indicator/CHECK SOURCE pushbutton

Standard: Depresses and holds the green FAIL SAFE indicator/CHECK SOURCE pushbutton on the monitor face of 1D21-RITS-K601.

Cue: None

Notes: This step will cause a high alarm if the check source pushbutton is held long enough to produce 100 mr/hr, which actually takes only a few seconds.

Prepare to give cue in next step.

SAT / UNSAT

Step 21: 04-1-03-D21-1 Attachment I, Step 1.2.7.a and b

- ☐ OBSERVE that meter indication AND point #1 on Multipoint Recorder R600 Both indicate an increase in count rate

Standard: Observes that meter indication and point # 1 on Multipoint Recorder R600 both indicate an increase in count rate.

Cue: State that PT#1 is responding the same as K601 meter indication.

Notes:

SAT / UNSAT

Step 22: 04-1-03-D21-1 Attachment I, Step 1.2.7.c

- ☐ * RELEASE green FAIL SAFE/CHECK SOURCE pushbutton.

Standard: Depresses and holds the green FAIL SAFE indicator/CHECK SOURCE pushbutton on the monitor face of 1D21-RITS-K601 and verifies that meter indication and point # 1 on Multipoint Recorder R600 both indicate an increase in count rate, then releases the green FAIL SAFE indicator/CHECK SOURCE pushbutton and initials the step on the Attachment I.

Cue: State that PT#1 is responding the same as K601 meter indication.

Notes: This step will cause a high alarm if the check source pushbutton is held long enough to produce 100 mr/hr, which actually takes only a few seconds.

SAT / UNSAT

Step 23: 04-1-03-D21-1 Attachment I, Step 1.2.8

☐ * PLACE AND HOLD function switch to ALARM.

Standard: Rotates the function switch clockwise to ALARM and holds it

Cue: None

Notes: The SOI step implies the switch will spring return to OPERATE, but depending on the particular ARM, the switch may have to be rotated manually back to OPERATE, as is true for this ARM.

SAT / UNSAT

Step 24: 04-1-03-D21-1 Attachment I, Step 1.2.9

☐ CONFIRM meter indication travels to setpoint of 80 mR/hr to 120 mR/hr.

Standard: Verifies that meter indication travels to the alarm setpoint of 80 mR/hr to 120 mR/hr and initials the step on Attachment I.

Cue: None

Notes: The SOI step implies the switch will spring return to OPERATE, but depending on the particular ARM, the switch may have to be rotated manually back to OPERATE, as is true for this ARM.

SAT / UNSAT

Step 25: 04-1-03-D21-1 Attachment I, step 1.2.10	
☐ * <u>RELEASE Function switch.</u>	
<u>Standard:</u>	Places Function switch to OPERATE.
<u>Cue:</u>	None
<u>Notes:</u>	The SOI step implies the switch will spring return to OPERATE, but depending on the particular ARM, the switch may have to be rotated manually back to OPERATE, as is true for this ARM.
SAT / UNSAT	

Step 26: 04-1-03-D21-1 Attachment I, step 1.2.11	
☐ OBSERVE indication decreases to NORMAL.	
<u>Standard:</u>	Observes indication decreases back to normal.
<u>Cue:</u>	None
<u>Notes:</u>	
SAT / UNSAT	

Step 27: 04-1-03-D21-1 Attachment I, Step 1.2.12	
☐ * <u>DEPRESS and RELEASE red High Alarm Reset pushbutton.</u>	
<u>Standard:</u>	Depresses and releases the red HIGH ALARM indicator/RESET pushbutton on the bottom of the monitor face.
<u>Cue:</u>	None
<u>Notes:</u>	
SAT / UNSAT	

Step 28: 04-1-03-D21-1 Attachment I, Step 1.2.13	
☐ RESET 1H13-P680-4A1-E6, AREA RAD PNL P844 TROUBLE.	
<u>Standard:</u>	Requests the RO to reset AREA RAD PNL P844 TROUBLE annunciator on P680.
<u>Cue:</u>	As RO, tell the candidate P680 annunciator AREA RAD PNL P844 TROUBLE is reset.
<u>Notes:</u>	
SAT / UNSAT	

Step 29: 04-1-03-D21-1 Attachment I step
1.2.14

☐ 1D21-RITS-K601 test completed

Standard: Signs and dates Test Performed by blocks and checks Acceptable

Cue: None

Notes:

Evaluator stops the JPM

Remember to record stop time

SAT / UNSAT

Perform ARM Functional Test

☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> - Places Module 1D21-RITS-K601 Function Switch in OFF - Places Module 1D21-RITS-K601 Function Switch in OPERATE - Depresses and holds Module 1D21-RITS-K601 yellow TEST ALARM pushbutton - Releases Module 1D21-RITS-K601 yellow TEST ALARM pushbutton - Depresses and releases Module 1D21-RITS-K601 red HIGH ALARM/RESET pushbutton - Depresses Module 1D21-RITS-K601 green FAIL SAFE/CHECK SOURCE pushbutton - Releases Module 1D21-RITS-K601 green FAIL SAFE/CHECK SOURCE pushbutton - Places Module 1D21-RITS-K601 function switch to ALARM - Releases Module 1D21-RITS-K601 function switch to NORMAL - Depresses and releases the red High Alarm Reset pushbutton - Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results (circle one):</u> SAT UNSAT		
<u>Follow-up Questions:</u> <u>Follow-up Question Response:</u> 		
<u>Comments / Feedback:</u> 		

Give this page to the student

Initial Condition(s):

- The plant is operating at 100% power.
- I&C has completed repair work on 1D21-RITS-K601, RHR Room A Area Radiation Monitor, and the ARM is ready for Operations retest.
- 1D21-RITS-K601 has been checked to be in operation per 04-1-01-D21-1.

Initiating Cue(s):

- The CRS has directed you to perform 04-1-03-D21-1 Attachment I for 1D21-RITS-K601 as a retest. Begin at step 1.2.1.
- Use the retest package provided.
- Another RO is assigned to manage any associated alarms on H13-P680.
- Prerequisites are complete.



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 P1
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024P1JPM Title: Hydrogen Igniter Alternate Power Div 1

Facility Number: GJPM-OPS-EOP30B
(If Bank or Modified from Bank)

JPM Attributes:

☐ New	☐ Modified	☒ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 20 Min

Prepared By:	Richard Bolduc	12/13/23
	Exam Developer	Date
Ops Review:	Clayton Bowlin	12/13/23
	1 st Validation by Ops Rep or Ops Validation Crew	Date
Validated By:	Clayton Bowlin	12/13/23
	2 nd Validation by Ops Validation Crew	Date
Approved By:	G. Hargrove	12/13/23
	Facility Representative	Date

Hydrogen Igniter Alternate Power

☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Setting: Plant
Type: NOB
Task: NOB-EP-EMER-30
K&A: 223001 A4.14 3.5
Safety Function: 5, Containment Integrity
10CFR 55.45(a) (4); (12)
Performance: Simulate
Reference(s): 05-S-01-STRATEGY Rev 15
Handout(s): 05-S-01-STRATEGY Att X
 Figures 1, 2, and 3 on 11x17" paper
Manipulations: 15
Critical Steps: 15

Simulator Setup/Required Plant Conditions:

- Div 1 Switchgear Room 1A309 (Auxiliary Building Elevation 139') is accessible

Safety Concerns:

- Opening panels exposes energized equipment: therefore, DO NOT open any panels while performing this JPM.

Hydrogen Igniter Alternate Power

Task Standard(s):

Simulates:

- Opening and blocking Auxiliary Building door 1A316
- Opening and blocking switchgear room door 1A309
- Places listed breakers to the OFF position
- Opens panel on penetration cabinet
- Verifies circuit deenergized in 1BPZ2A De-terminates listed cable from TB-3 and tapes leads
- Re-terminates listed cable on TB-3
- De-terminates listed cable from TB-1 and tapes leads
- De-terminates listed cable from TB-4 and tapes leads
- Re-terminates listed cable on TB-4
- De-terminates listed cable from TB-2 and tapes leads.
- Terminates Line 2 of #4 AWG short cable
- Terminates Line 1 of #4 AWG short cable
- Terminates Neutral Line of #4 AWG short cable
- Installed jumper from TB-3 to TB-4.
- Connects plug of #4 AWG short cable to receptacle of #4 AWG cable

Hydrogen Igniter Alternate Power

Initial Condition(s):

- EPs have been entered
- 05-S-01-STRATEGY has been entered
- Station offsite power has been lost and power cannot be supplied to one division of hydrogen igniters with its respective D/G or by cross-tie of Div. 3 D/G to Bus 15AA or 16AB

Initiating Cue(s):

- You have been directed to provide alternate power to Division 1 Hydrogen (H₂) Igniters with portable generator **AND** light tower using 05-S-01-STRATEGY Attachment X step 4.5. Another operator will take over at step 4.7.
- Prerequisites for performing Attachment X have been met.
- You currently have all tools and equipment listed in Section 3.0 of Attachment X "Required Equipment."
- You will simulate performance of all steps performed **inside** Aux Bldg, other operators will perform all steps outside the Aux Bldg.
- DO NOT open any panels while performing this JPM.
- Use figures from the procedure to simulate performance of steps in panels.

Hydrogen Igniter Alternate Power

Notes: (Notes to Evaluator)

- Remember to record Start time on page 9.
- This JPM is performing actions on Div 1 equipment.
- All equipment needed to perform this task is available in the locations listed in section 3.0 of procedure)
- The operator is informed to assume he has all tools and equipment to perform the task.

Task Overview: (Detailed description of task)

- Simulates lining up alternate power to Division 1 Hydrogen (H2) Igniters with portable generator **AND** light tower.

Critical tasks are underlined, italicized, and denoted by an (*)

Step 1: 05-S-01-STRATEGY Att X, Step 4.5.1	
☐	COORDINATE with Security to open the southwest Auxiliary Building door 1A316 and maintain door open using any means possible.
<u>Standard:</u>	Contacts security to open Auxiliary Building door 1A316 and simulates blocking open.
<u>Cue:</u>	Security has opened the auxiliary building door. After simulating blocking open, state door is blocked open.
<u>Notes:</u>	
SAT / UNSAT	

Step 2: 05-S-01-STRATEGY Att X, Step 4.5.2	
☐ *	<u>OPEN the switchgear room 1A309 AND MAINTAIN door open USING ANY means possible.</u>
<u>Standard:</u>	Simulates opening and blocking door 1A309
<u>Cue:</u>	Door is blocked open
<u>Notes:</u>	
SAT / UNSAT	

Step 3: 05-S-01-STRATEGY Att X, Step 4.5.3

- ☐ At the portable generator, PULL the #4 AWG long cable off the reel mounted on front of the unit.

Standard: Communicates to another operator stationed at the generator to perform this step.

Cue: Cable is off the reel.

Notes:

SAT / UNSAT

Step 4: 05-S-01-STRATEGY Att X, Step 4.5.4

- ☐ **ROUTE** #4 AWG long cable on reel (female receptacle box end) over/through concrete barrier into Auxiliary Building **AND** to near switchgear room 1A309

Standard: Communicates to another operator stationed to perform this step.

Cue: **Cable is routed.**

Notes:

SAT / UNSAT

Step 5: 05-S-01-STRATEGY Att X, Step 4.5.4a

- ☐ TRANSPORT the following items (stored in tool box on portable generator Combination 2374) to switchgear room 1A309

Standard: Communicates to another operator to perform this step.

Cue: **Items are in switchgear room**

Notes: **None**

SAT / UNSAT

Step 6: 05-S-01-STRATEGY Att X, Step 4.5.5

☐* ***IF accessible, THEN PLACE the following breakers in 15P31 power panel to OFF position:***

- 52-1P53119
- 52-1P53121

Standard: Simulates placing listed breakers to the OFF position

Cue: State breaker is in the OFF position as each breaker is simulated being taken to OFF

Notes: None

SAT / UNSAT

Step 7: 05-S-01-STRATEGY Att X, Step 4.5.6

☐* ***OPEN the lower left-hand panels on Containment side of 1BPZ2A penetration cabinet until cable 8-153119F is located.***

Standard: Simulates opening panel on penetration cabinet.

Cue: Panel is open

Notes: Use figures in back of attachment to locate cables.

SAT / UNSAT

Step 8: 05-S-01-STRATEGY Att X, Step 4.5.7

☐* USING process meter, ENSURE circuit is de-energized by OBSERVING no AC voltage between the following terminals in 1BPZ2A (See Figure 1):

- TB1 (+) to TB3 (-)
- TB2 (+) to TB4 (-)

Standard: Simulates verifying circuit is deenergized in 1BPZ2A.

Cue: Inform operator that he has an electrical meter.

Following simulation of checking for voltage state, No AC voltage is detected.

If necessary, direct operator to use Figure 1, Figure 2, and Figure 3 to aid in simulating actions.

Notes: None

SAT / UNSAT

Step 9: 05-S-01-STRATEGY Att X, Step 4.5.8

☐* DE-TERMINATE cable 1AP1E611-U1 from TB-3 in 1BPZ2A AND TAPE leads.

Standard: Simulates de-termining of listed cable from TB-3 and taping leads.

Cue: Cable is De-Terminated and Taped.

Notes: None

SAT / UNSAT

Step 10: 05-S-01-STRATEGY Att X, Step 4.5.8a

☐ * ***RE-TERMINATE*** *remaining cable on TB-3 in 1BPZ2A.*

Standard: Simulates re-termining listed cable on TB-3.

Cue: Cable is Re-Terminated

Notes: None

SAT / UNSAT

Step 11: 05-S-01-STRATEGY Att X, Step 4.5.9

☐ * ***DE-TERMINATE*** *cable on 1AP1E611-X11 from TB-1 in 1BPZ2A AND TAPE leads.*

Standard: Simulates de-termining listed cable from TB-1 and taping leads.

Cue: Cable is De-Terminated and Taped.

Notes: None

SAT / UNSAT

Step 12: 05-S-01-STRATEGY Att X, Step 4.5.10

☐* **DE-TERMINATE** cable on 1AP2E611-U1 from TB-4 in 1BPZ2A **AND TAPE** leads.

Standard: Simulates de-termining listed cable from TB-4 and taping leads.

Cue: Cable is De-Terminated and Taped.

Notes: None

SAT / UNSAT

Step 13: 05-S-01-STRATEGY Att X, Step 4.5.10a

☐* **RE-TERMINATE** remaining cable on TB-4 in 1BPZ2A.

Standard: Simulates re-termining listed cable on TB-4.

Cue: Cable is Re-Terminated

Notes: None

SAT / UNSAT

Step 14: 05-S-01-STRATEGY Att X, Step 4.5.11

☐* **DE-TERMINATE** cable on 1AP2E611-X11 from TB-2 in 1BPZ2A **AND TAPE** leads.

Standard: Simulates de-termining listed cable from TB-2 and taping leads.

Cue: Cable is De-Terminated and Taped.

Notes: None

SAT / UNSAT

Step 15: 05-S-01-STRATEGY Att X, Step 4.5.12

☐* **TERMINATE** Line 2 (L2) of #4 AWG short cable to top terminal of TB-1 in 1BPZ2A

Standard: Simulates connecting Line 2 of #4 AWG short cable to top terminal of TB-1.

Cue: Line 2 is Terminated.

Notes: None

SAT / UNSAT

Step 16: 05-S-01-STRATEGY Att X, Step 4.5.13

☐* **TERMINATE** *Line 1 (L1) of #4 AWG short cable to top terminal of TB-2 in 1BPZ2A*

Standard: Simulates connecting Line 1 of #4 AWG short cable to top terminal of TB-2.

Cue: Line 1 is Terminated.

Notes: None

SAT / UNSAT

Step 17: 05-S-01-STRATEGY Att X, Step 4.5.14

☐* **TERMINATE** *Neutral Line (with green tape) of #4 AWG short cable to bottom of terminal of TB-3 in 1BPZ2A*

Standard: Simulates connecting Neutral Line of #4 AWG short cable to bottom terminal of TB-3.

Cue: Neutral Line is Terminated.

Notes: None

SAT / UNSAT

Step 18: 05-S-01-STRATEGY Att X, Step 4.5.15

- ☐ * **INSTALL** *jumper (#4 AWG single conductor) from bottom terminal of TB-3 to bottom terminal of TB-4 in 1BPZ2A*

Standard: Simulates installing jumper from bottom terminal of TB-3 to bottom terminal of TB-4 in 1BPZ2A.

Cue: Jumper installed.

Notes: None

SAT / UNSAT

Step 19: 05-S-01-STRATEGY Att X, Step 4.5.16

- ☐ * **CONNECT** *plug of #4 AWG short cable to receptacle of #4 AWG cable routed to portable generator*

Standard: Simulates connecting plug of #4 AWG short cable to receptacle of #4 AWG cable

Cue: Plug connected.

Notes: Inform operator the JPM is TERMINATED

Remember to record stop time

SAT / UNSAT

Hydrogen Igniter Alternate Power

☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min		
Operator: _____ Date: _____				
Evaluators Name: _____ Evaluators Signature: _____				
Start Time: _____ Stop Time: _____				
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____				
<u>Task Standard(s):</u> <table style="width: 100%; border: none;"> <tr> <td style="vertical-align: top; width: 50%;"> - Simulates opening and blocking door 1A309 - Places listed breakers to the OFF position - Opens panel on penetration cabinet - Using Figure 1 locates voltage points - De-terminates listed cable from TB-3 and tapes leads - Re-terminates listed cable on TB-3 - De-terminates listed cable from TB-1 and tapes leads - De-terminates listed cable from TB-4 and tapes leads </td> <td style="vertical-align: top; width: 50%;"> - Re-terminates listed cable on TB-4 - De-terminates listed cable from TB-2 and tapes leads. - Terminates Line 2 of #4 AWG short cable - Terminates Line 1 of #4 AWG short cable - Terminates Neutral Line of #4 AWG short cable - Installed jumper from TB-3 to TB-4. - Connects plug of #4 AWG short cable to receptacle of #4 AWG cable </td> </tr> </table>			- Simulates opening and blocking door 1A309 - Places listed breakers to the OFF position - Opens panel on penetration cabinet - Using Figure 1 locates voltage points - De-terminates listed cable from TB-3 and tapes leads - Re-terminates listed cable on TB-3 - De-terminates listed cable from TB-1 and tapes leads - De-terminates listed cable from TB-4 and tapes leads	- Re-terminates listed cable on TB-4 - De-terminates listed cable from TB-2 and tapes leads. - Terminates Line 2 of #4 AWG short cable - Terminates Line 1 of #4 AWG short cable - Terminates Neutral Line of #4 AWG short cable - Installed jumper from TB-3 to TB-4. - Connects plug of #4 AWG short cable to receptacle of #4 AWG cable
- Simulates opening and blocking door 1A309 - Places listed breakers to the OFF position - Opens panel on penetration cabinet - Using Figure 1 locates voltage points - De-terminates listed cable from TB-3 and tapes leads - Re-terminates listed cable on TB-3 - De-terminates listed cable from TB-1 and tapes leads - De-terminates listed cable from TB-4 and tapes leads	- Re-terminates listed cable on TB-4 - De-terminates listed cable from TB-2 and tapes leads. - Terminates Line 2 of #4 AWG short cable - Terminates Line 1 of #4 AWG short cable - Terminates Neutral Line of #4 AWG short cable - Installed jumper from TB-3 to TB-4. - Connects plug of #4 AWG short cable to receptacle of #4 AWG cable			
<u>JPM Results:</u> (circle one) <table style="display: inline-table; vertical-align: middle; margin-left: 20px;"> <tr> <td style="text-align: center; width: 100px;">SAT</td> <td style="text-align: center; width: 100px;">UNSAT</td> </tr> </table>			SAT	UNSAT
SAT	UNSAT			
<u>Follow-up Questions:</u>				
<u>Follow-up Question Response:</u>				
<u>Comments / Feedback:</u>				

Give this page to the student

Initial Condition(s):

- EPs have been entered
- 05-S-01-STRATEGY has been entered
- Station offsite power has been lost and power cannot be supplied to one division of hydrogen igniters with its respective D/G or by cross-tie of Div. 3 D/G to Bus 15AA or 16AB

Initiating Cue(s):

- You have been directed to provide alternate power to Division 1 Hydrogen (H₂) Igniters with portable generator **AND** light tower using 05-S-01-STRATEGY Attachment X step 4.5. Another operator will take over at step 4.7.
- Prerequisites for performing Attachment X have been met.
- You currently have all tools and equipment listed in Section 3.0 of Attachment X "Required Equipment."
- You will simulate performance of all steps performed **inside** Aux Bldg, other operators will perform all steps outside the Aux Bldg.

DO NOT open any panels while performing this JPM.

Use figures to simulate performance of steps in panels.



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 P2
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024P2

JPM Title: Battery Charger Startup
with Low Current

Facility Number: GJPM-OPS-L11-9
(If Bank or Modified from Bank)

Prepared By:	<u>Tom Hooper</u> Exam Developer	<u>09/13/2023</u> Date
Ops Review:	<u>M. Watts/ M. Lawrence</u> 1 st Validation by Ops Rep or Ops Validation Crew	<u>10/24/2023</u> Date
Validated By:	<u>M. Watts/ M. Lawrence</u> 2 nd Validation by Ops Validation Crew	<u>10/24/2023</u> Date
Approved By:	<u>G. Hargrove</u> Facility Representative	<u>11/5/2023</u> Date

Battery Charger Startup with Low Current

☐ New	☒ Modified	☐ Direct from bank
☐ Time Critical	☒ Alternate Path	Validation Time: 15 Min

Setting: Plant
 Type: NLO
 Task: NOB-ADMIN-24
 K&A: 263000 A2.03 (3.4/3.2)
 Safety Function: 6 – Electrical
 10CFR 55.45(a) (5); (6)
 Performance: Simulate
 Reference(s): 04-1-01-L11-1
 Handout(s) 04-1-01-L11-1 P&Ls, section 4.6 (completed up to step 4.6.2), and Attachments IIIA through L
 # Manipulations: 7
 # Critical Steps: 7
 Low Power: No
 Emergency/Abnormal: No
 RCA entry: No
 Engineered Safety Function: No

Simulator Setup/Required Plant Conditions:

- Area is accessible

Safety Concerns:

Ensure electrical safety maintained per EN-IS-123 –. All actions will be simulated. Do not open any panels. (Candidate will use pictures to simulate actions at charger 1A4).

Task Standard(s):

- Simulate closing charger 1A4 output breaker 72-11A02
- Simulate closing charger 1A4 feeder breaker 52-15602
- Using pictures, simulates closing charger 1A4 DC switch.
- Using pictures, simulates closing charger 1A4 AC switch.
- Using pictures, simulates depressing charger 1A4 HIGH VOLTAGE SHUTDOWN RESET pushbutton.
- Using pictures, simulates placing charger 1A4 Load Sharing toggle switch in ON.
- Using pictures, simulates placing charger 1A5 Load Sharing toggle switch in ON.
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Battery Charger Startup with Low Current

Initial Condition(s):

- The plant is operating at 100% power.
- Bus 11DA is energized.
- Battery charger 1A5 is in operation with its Load Sharing feature off.
- For battery charger 1A4, Section 4.6.1, Prerequisites have been verified:
 - AC switch is off
 - DC switch is off
 - Equalizing timer set to 0
 - Normal/Equalize switch in NORMAL
 - Load Sharing switch is off

Initiating Cue(s):

- The CRS directs you to start battery charger 1A4 per SOI 04-1-01-L11-1 section 4.6 starting at step 4.6.2.
- All actions to be simulated. Do not open any panels. Use pictures to simulate actions at charger 1A4.
- Before you begin, explain to the evaluator necessary PPE for this task in accordance with EN-IS-123.

Battery Charger Startup with Low Current

Notes:

- All equipment associated with this task is located in the Div. 1 ESF switchgear room, Area 25A, El. 111'.
- No circuit breaker should be actually operated during the performance of this JPM.
- The following cues assume that both chargers 1A4 and 1A5 are actually in service.
- Remember to record Start time.

Task Overview:

- Battery charger 1A4 is started up IAW section 4.6 and Attachments IIIA thru L of SOI 04-1-01-L11-1.
- Low current is corrected by resetting the high voltage shutdown.

Critical tasks are underlined, *italicized*, and denoted by an (*)

Step 0: EN-IS-123	
☐ Obtains PPE for removing relays in energized panel.	
<u>Standard:</u>	Explains required PPE for opening panel. Minimum of safety glasses. For reaching in the panel, additionally electrical gloves.
<u>Cue:</u>	Provide EN-IS-123 handout if requested
<u>Notes:</u>	May indicate additional PPE such as non-melting cotton clothes, hard hat, remove exposed metal, safety shoes, face shield, etc.
SAT / UNSAT	

Step 1: 04-1-01-L11-1 step 4.6.2.a

☐* ***ENSURE CLOSE*** *associated charger output breaker on DC bus as given in Attachment IIIA through L.*

Standard: Simulate closing breaker 72-11A02 by pushing upward on its operating handle until it snaps into the CLOSED (ON) position.

Cue: Breaker is in the position indicated.

Notes:

SAT / UNSAT

Step 2: 04-1-01-L11-1 step 4.6.2.b

- ☐* **ENSURE CLOSE** *associated Charger AC feeder breaker on LC, MCC, or power panel as given in Attachment IIIA through L.*

Standard: Locates breaker 52-15602 on LCC 15BA6 and simulate closing it by depressing its CLOSE pushbutton and verifying the breaker closes.

Cue: Breaker is in the position indicated.

Notes:

SAT / UNSAT

Step 3: 04-1-01-L11-1 step 4.6.2.c

- ☐* **CLOSE DC switch** *on charger.*

Standard: Using pictures, simulates operating the paddle on charger 1A4's DC switch up until it snaps into the ON position.

Cue: DC switch is in the up position.

Notes:

SAT / UNSAT

Step 4: 04-1-01-L11-1 step 4.6.2.d

- ☐ **CHECK** charger voltmeter indicates approximately 125 Vdc (24 Vdc on H AND J chargers). **IF** it doesn't, **THEN CONTACT** Control Room **AND** Electrical Department for guidance/assistance.

Standard: Verifies the voltmeter on charger 1A4 indicates approximately 125 VDC.

Cue: Voltage is approximately 125 VDC.

Notes: Closing the DC switch connects the downstream side of the transformer and rectifier of the charger to the DC bus such that the meter will read approximately DC bus voltage. This procedure is written as if this is the first charger to be placed on the DC Bus.

SAT / UNSAT

Step 5: 04-1-01-L11-1 step 4.6.2.e

- ☐* **CLOSE AC switch on charger.**

Standard: Using pictures, simulates operating paddle on charger 1A4's AC switch up until it snaps into the ON position.

Cue: AC switch is in the up position.

Notes:

SAT / UNSAT

Note: The sequence for the following steps is not critical.

Step 6: 04-1-01-L11-1 step 4.6.2.e(1)

☐ **ENSURE** AC POWER ON light (**IF** provided) comes On **AND** charger amps rise.

Standard: Observes AC POWER ON light and charger amps are 0.

Cue: AC POWER ON light is ON. Charger current indicate 0 amps.

Notes: The 0-amp cue is what leads to the alternate path. The operator may recognize the abnormal indication and can do out of order and skip to JPM step 8 due to the layout of the procedure.

SAT / UNSAT

Step 7: 04-1-01-L11-1 step 4.6.2.e(2)

- ☐ **ENSURE** charger voltmeter indicates approximately 132 Vdc (26.5 Vdc on H **AND** J chargers).

Standard: Observes charger voltmeter.

Cue: Voltage is as indicated.

Notes: Range on the rounds is 130 – 137 VDC

The 0-amp cue is what leads to the alternate path. The operator may recognize the abnormal indication and can do out of order and skip to JPM step 8 due to the layout of the procedure.

Alternate Path begins with the next step.

SAT / UNSAT

AP Step 8: 04-1-01-L11-1 NOTE after step 4.6.2.e(2)

☐* **NOTE**

Some chargers are provided with a HIGH VOLTAGE SHUTDOWN RESET pushbutton inside charger cabinet. IF respective charger does **NOT** provide charging current, **DEPRESS** this pushbutton to restore normal charger operation.

During startup or after PM of charger, the amperages should be approximately equal.

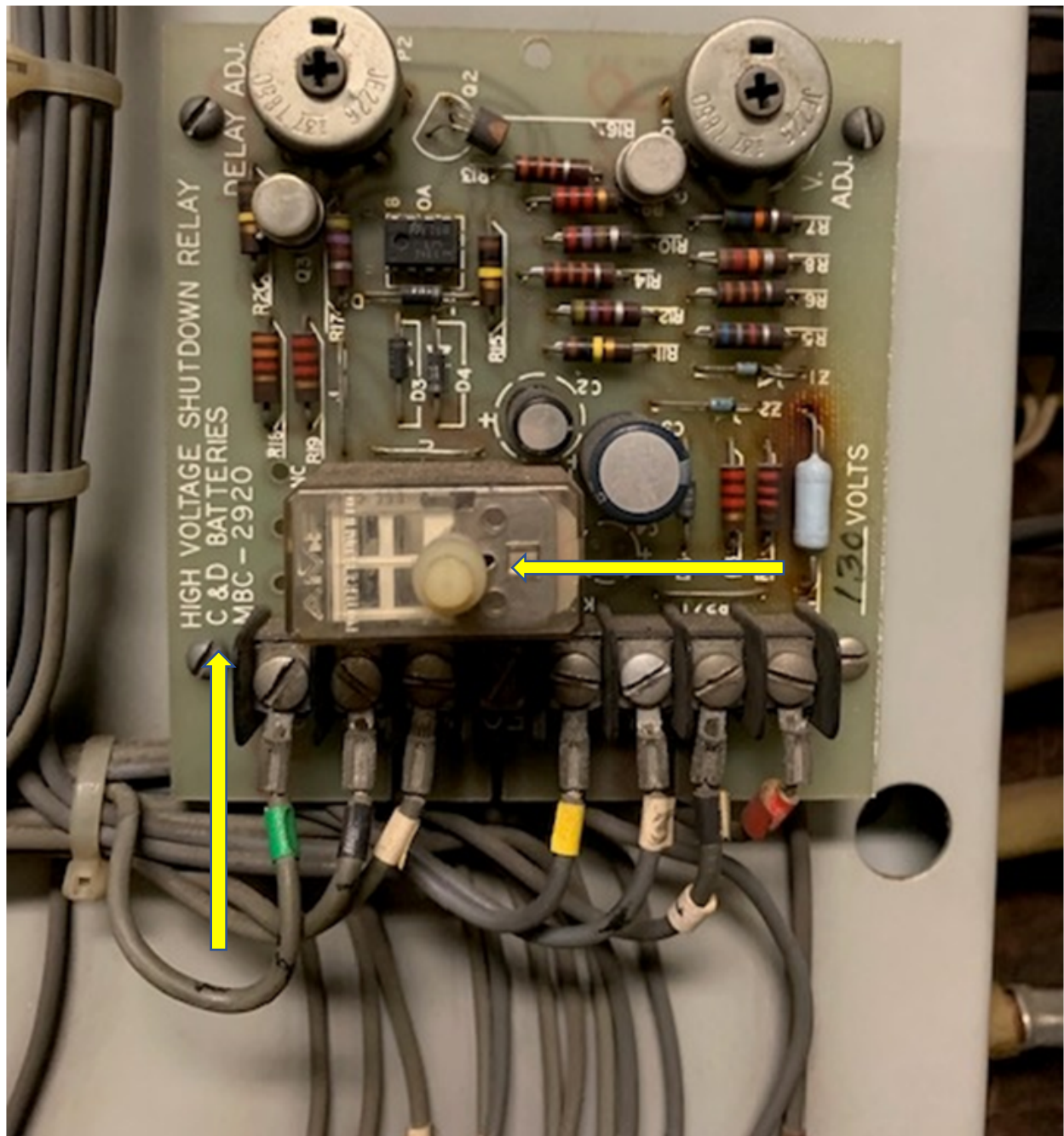
During normal operations drifting of the amperage output is acceptable as long as some output is apparent on both chargers. This allows us to determine that both chargers are in operation and able to pick up load immediately upon failure of the other.

Standard: Using pictures, simulates depressing HIGH VOLTAGE SHUTDOWN RESET pushbutton.

Cue: The indicated pushbutton has been depressed. If asked, charger current is as indicated on charger.

Notes: Button is located low in right panel left side. See next page.

SAT / UNSAT



Step 9: 04-1-01-L11-1 step 4.6.2.f and f(1)	
☐	IF two chargers are in operation (except on 11DC bus), PERFORM the following: (1) ENSURE voltages are approximately equal. (IF not, HAVE Electrical Maintenance investigate and adjust voltage)
<u>Standard:</u>	Observes voltages on chargers 1A4 and 1A5.
<u>Cue:</u>	1A4 voltage is as indicated. 1A5 voltage is as indicated.
<u>Notes:</u>	Range on the rounds is 130 – 137 VDC
SAT / UNSAT	

Step 10: 04-1-01-L11-1 step 4.6.2.f(2)	
☐	ENSURE charger has some amperage output. (IF not, HAVE Electrical Maintenance investigate and adjust amps)
<u>Standard:</u>	Observes currents on chargers 1A4 and 1A5.
<u>Cue:</u>	1A4 current is as indicated. 1A5 current is as indicated.
<u>Notes:</u>	Range on the rounds is 30 – 60 amps (Load Dependent)
SAT / UNSAT	

Step 11: 04-1-01-L11-1 step 4.6.2.f(3)

☐* **TURN** the Load Sharing switches to ON, (H & J 24 Vdc chargers are not equipped with load share switches.)

Standard: Using pictures, simulates placing the Load Sharing toggle switch on charger 1A4 in the ON position.

Cue: Switch is in the indicated position.

Notes:

SAT / UNSAT

Step 12: 04-1-01-L11-1 step 4.6.2.f(4)

☐ **ENSURE** charger voltages AND amperages remain stable.

Standard: Observes charger voltages and amperages.

Cue: Voltages and amperages remain stable.

Notes: Evaluator may end the JPM at this time

Remember to record stop time

SAT / UNSAT

Battery Charger Startup with Low Current

☐ Time Critical	☒ Alternate Path	Validation Time: 15 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> • Simulate closing charger 1A4 output breaker 72-11A02 • Simulate closing charger 1A4 feeder breaker 52-15602 • Using pictures, simulates closing charger 1A4 DC switch. • Using pictures, simulates closing charger 1A4 AC switch. • Using pictures, simulates depressing charger 1A4 HIGH VOLTAGE SHUTDOWN RESET pushbutton. • Using pictures, simulates placing charger 1A4 Load Sharing toggle switch in ON. • Using pictures, simulates placing charger 1A5 Load Sharing toggle switch in ON. • Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results (circle one):</u> SAT UNSAT		
<u>Follow-up Questions:</u>		
<u>Follow-up Question Response:</u>		
<u>Comments / Feedback:</u>		

Give this page to the student

Initial Condition(s):

- The plant is operating at 100% power.
- Bus 11DA is energized.
- Battery charger 1A5 is in operation with its Load Sharing feature off.
- For battery charger 1A4, Section 4.6.1, Prerequisites have been verified:
 - AC switch is off
 - DC switch is off
 - Equalizing timer set to 0
 - Normal/Equalize switch in NORMAL
 - Load Sharing switch is off

Initiating Cue(s):

- The CRS directs you to start battery charger 1A4 per SOI 04-1-01-L11-1 section 4.6 starting at step 4.6.2.
- All actions to be simulated. Do not open any panels. Use pictures to simulate actions at charger 1A4.
- Before you begin, explain to the evaluator necessary PPE for this task in accordance with EN-IS-123.



Date of Examination: 01/2024
Operating Test Number: GGNS 01-2024
Facility: Grand Gulf Nuclear Station

01-2024 P3
GGNS
01-2024 NRC Operating Test
Job Performance Measure

JPM Number: GJPM-OPS-01-2024P3

JPM Title: Initiate Fire Protection to SBGT
Filter Train A

Facility Number: N/A
(If Bank or Modified from Bank)

JPM Attributes:

☐ New	☐ Modified	☒ Direct from bank
☐ Time Critical	☐ Alternate Path	Validation Time: 15 min

Prepared By:	Tom Hooper Exam Developer	06/21/2023 Date
Ops Review:	M. Watts/ M. Lawrence 1 st Validation by Ops Rep or Ops Validation Crew	10/24/2023 Date
Validated By:	M. Watts/ M. Lawrence 2 nd Validation by Ops Validation Crew	10/24/2023 Date
Approved By:	G. Hargrove Facility Representative	11/5/2023 Date

Initiate Fire Protection to SBTG Filter Train A

Setting:	Plant
Type:	AON
Task:	AON-P64-OFFNORM-029
K&A:	286000 Generic 2.1.30 (4.4/4.0)
Safety Function:	8 – Plant Service Systems
10CFR55.45 (a)	(3); (8)
Performance:	Simulate
Reference(s):	04-1-02-1H13-P870 04-S-01-P64-1
Handout(s)	04-1-02-1H13-P870-2A-B2; 2A-C2
# Manipulations:	3
# Critical Steps:	3
Low Power:	No
Emergency/Abnormal:	YES
RCA entry:	YES
Engineered Safety Function:	No

Simulator Setup/Required Plant Conditions:

- AREA is accessible.

NOTE:

May be performed on SBTG A or B based on Protected Train and Control Room Supervisor concerns. A separate JPM is available for performing task on SBTG B.

Safety Concerns:

- **DO NOT ALLOW APPLICANT TO OPERATE PLANT EQUIPMENT.**
- **DO NOT ALLOW APPLICANT TO OPEN THE PULL STATION.**

Task Standard:

- Breaker 52-151117 opened.
- Manual isolation valve SP64-F167A opened.
- Deluge valve SP64-F477L tripped.
- Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.

Initial Condition(s):

- | |
|---|
| <ul style="list-style-type: none">• Both Standby Gas Treatment Filter Trains are operating in response to a high radiation signal.• Annunciator H13-P870 2A-B2 SGTS FLTR TR A CHAR TEMP HI-HI and C2 SGTS FLTR TR A CHAR TEMP HI have been received.• Personnel in the area of the Standby Gas Trains and Security have reported smoke. |
|---|

Initiating Cue(s):

- | |
|---|
| <ul style="list-style-type: none">• The Control Room Supervisor has directed you to perform the Immediate Operator Actions from the Alarm Response Instruction for H13-P870 2A-B2 SGTS FLTR TR A CHAR TEMP HI-HI.• The Control Room Operator has NOT been able to secure the Standby Gas Filter Train. |
|---|

GIVE THE APPLICANT A COPY OF THE ALARM RESPONSE INSTRUCTION.

Initiate Fire Protection to SBTG Filter Train A

Notes to Evaluator:

- This task is to be simulated in the plant Auxiliary Building 119 ft and 139 ft elevations.
- Applicant may feel the need to don Fire Turnout Gear. Cue the applicant to simulate this action.

Task Overview: (Detailed description of task)

This task is to manually secure an operating Standby Gas Filter Train Fan and manually initiate the Fire Suppression System for the filter train charcoal adsorber locally. This is done to extinguish the fire and limit the release of radioactive particulate to the environment by containing it inside the confines of the SBTG Filter Train.

Initiate Fire Protection to SBTG Filter Train A

Critical steps are underlined, italicized, and denoted by an (*)

NOTE: The sequence of the following steps is critical unless otherwise noted.

Remember to record Start time

NOTE: Applicant should review procedure and determine section 3.4 is the applicable section of the Alarm Response Instruction (ARI) and may request sections 3.1; 3.2 and 3.3 be N/A'd. CUE the applicant to proceed with the applicable section.

Step 1: 04-1-02-1H13-P870 2A-B2, Step 3.4.1

☐* OPEN breaker 52-151117.

Standard: OPENS breaker 52-151117.

Cue: Handle is down.

Notes: This action trips the SBTG Train Exhaust Fan.

SBTG A - 52-151117 is located on Motor Control Center (MCC) 15B11 Switchgear Room Area 9 - 119 ft elevation.

SAT / UNSAT

Step 2: 04-1-02-1H13-P870 2A-B2, Step
3.4.2

☐* OPEN manual isolation valve SP64-F167A .

Standard: OPENS manual isolation valve SP64-F167A.

Cue: Resistance is felt in the counter-clockwise direction.

Notes:

Area 9/10 - 139 ft elevation in hallway.

Valve is just labeled P64-F167A

SAT / UNSAT

Step 3: 04-1-02-1H13-P870 2A-B2, Step
3.4.3

☐* TRIP deluge valve SP64-F477L(M).

Standard: TRIP deluge valve SP64-F477L by either breaking glass with the hammer provided or other device and opening door to pull station and pull down on the "T" handle OR prying open door to pull station and manually pulling down the "T" handle.

Cue: Pull station is activated. You hear water flow in the pipe.

Notes: Valve is just labeled P64-F477L(M)

After water is reported flowing, the JPM can be stopped

SAT / UNSAT

Initiate Fire Protection to SBTG Filter Train A

☐ Time Critical	☐ Alternate Path	Validation Time: 15 Min

Operator: _____ License: RO / SRO Date: _____		
Evaluators Name: _____ Evaluators Signature: _____		
Start Time: _____ Stop Time: _____		
CRITICAL TIME FRAME: _____ Required Time (min): _____ Actual Time (min): _____		
<u>Task Standard(s):</u> - Breaker 52-151117 opened. - Manual isolation valve SP64-F167A opened. - Deluge valve SP64-F477L tripped. - Applicant's actions did not degrade the condition of the plant beyond that introduced by the JPM as developed.		
<u>JPM Results (circle one):</u> SAT UNSAT		
<u>Follow-up Questions:</u> 		
<u>Follow-up Question Response:</u> 		
<u>Comments / Feedback:</u> 		

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Initial Condition(s):

- Both Standby Gas Treatment Filter Trains are operating in response to a high radiation signal.
- Annunciator H13-P870 2A-B2 SGTS FLTR TR A CHAR TEMP HI-HI and C2 SGTS FLTR TR A CHAR TEMP HI have been received.
- Personnel in the area of the Standby Gas Trains and Security have reported smoke.

Initiating Cue(s):

- The Control Room Supervisor has directed you to perform the Immediate Operator Actions from the Alarm Response Instruction for H13-P870 2A-B2 SGTS FLTR TR A CHAR TEMP HI-HI.
- The Control Room Operator has NOT been able to secure the Standby Gas Filter Train.

GGNS 01-2024 NRC Scenario 1

Facility:	Grand Gulf	Scenario #:	NRC-1
Scenario Source:	New	Op. Test #:	2024
Examiners:		Applicants/	
		Operators:	
Initial Conditions:	The plant is operating at approximately 85% power. CRD pump B is tagged out of service for maintenance.		
Turnover:	Start EHC control fluid pump B and place EHC control fluid pump A in standby per 04-1-01-N32-1 Section 5.3.5. The procedure is in progress up to step 5.3.5.2. Then, withdraw control rods to raise the rod line per the provided reactivity instructions.		
Critical Tasks:	CT-1: Given the plant operating at power with rising Drywell pressure and a failure of RPS to scram the Reactor, the crew will insert control rods by manually initiating ARI, in accordance with 05-1-02-I-1 and/or EP-2A. ARI must be manually initiated within 5 minutes of when Drywell pressure exceeds 1.23 psig. CT-2: Given a coolant leak, a loss of high-pressure injection systems, and the inability to restore and maintain Reactor water level above -191", the crew will perform an Emergency Depressurization, in accordance with EP-2, before Reactor water level reaches -191".		

GGNS 01-2024 NRC Scenario 1

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Swap EHC Pumps SOI 04-1-01-N32-1
2	N/A	R – ATC, SRO	Withdraw Control Rods SOI 04-1-01-C11-2
3	c51009 _2 c51010 _3	I – ATC, SRO MC – ATC TS – SRO	Two APRMs Fail Sequentially SOI 04-1-01-C51-1, Technical Specification 3.3.1.1
4	g33033	C – BOP, SRO MC – BOP TS – SRO	RWCU Leak into Containment, RWCU Fails to Automatically Isolate 05-1-02-III-5, 04-1-01-G33-1, Technical Specification 3.3.6.1
5	fw123b rr217a	C – All MC – ATC	Feedwater Pump Trip, Recirc FCV A Fails to Runback ONEP 05-1-02-V-7, ONEP 05-1-02-III-3
6	rr063	M – All	Coolant Leak in Drywell ONEP 05-1-02-I-1, EP-2, EP-3
7	c71162	I – ATC, SRO MC – ATC	Automatic and Manual RPS Scrams Fail, ARI Works ONEP 05-1-02-I-1, EP-2, EP-2A
8	fw115	C – All	Condensate Pumps Trip EP-2
9	e22052	C – All MC – ATC, BOP	HPCS Pump Trip EP-2
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (TS)Tech Spec, (MC)Manual Control			

GGNS 01-2024 NRC Scenario 1

Initial Conditions: -

- Plant is operating at approximately 85% power, middle of cycle

Inoperable Equipment:

- CRD pump B is tagged out of service for maintenance.

Planned activities:

- Start EHC control fluid pump B and place EHC control fluid pump A in standby per 04-1-01-N32-1 Section 5.3.5. The procedure is in progress up to step 5.3.5.2.
- Then, withdraw control rods to raise the rod line per the provided reactivity instructions.

Scenario Notes:

- Validation Time: 60 minutes

GGNS 01-2024 NRC Scenario 1

SCENARIO ACTIVITIES:

Event 1 – Swap EHC Pumps (Normal evolution)

After the crew assumes the shift, the BOP will start EHC control fluid pump B and place EHC control fluid pump A in standby per 04-1-01-N32-1 Section 5.3.5. The procedure is in progress up to step 5.3.5.2.

Event 2 – Withdraw Control Rods (Reactivity evolution)

Following the normal evolution, the ATC will withdraw control rods to adjust the rod pattern. Control rods 24-33, 32-41, 40-33, and 32-25 will be withdrawn from position 08 to position 12.

Event 3 – Two APRMs Fail Sequentially (Triggered by Lead Examiner)

APRM channel 2 will fail upscale. The crew will bypass APRM channel 2. Then, APRM 3 will fail downscale. The SRO will determine the Technical Specification impact.

Tech Specs should be referred to and the following LCOs identified:		
3.3.1.1	Condition A, One or more required channels inoperable	
	A.1	Place channel in trip (12 hours)
	A.2	Place associated trip system in trip (12 hours)
TRM 3.3.2.1	Condition A, One or more required channels nonfunctional	
	A.1	Enter the Condition referenced in Table TR3.3.2.1-2 for that channel (immediately)
	Condition B, As required by Required Action A.1 and referenced in Table TR3.3.2.1-2	
	B.1	Enter Condition C (7 days)

Event 4 – RWCU Leak into Drywell, RWCU Fails to Automatically Isolate (Triggered by Lead Examiner)

A leak will develop from RWCU into the heat exchanger room inside Containment. Room temperature will rise, but RWCU will fail to automatically isolate. The crew will execute 05-1-02-III-5, Automatic Isolations ONEP. The crew will manually isolate RWCU to terminate the leak. The SRO will determine the Technical Specification impact.

Tech Specs should be referred to and the following LCOs identified:		
3.3.6.1	Condition B, One or more automatic Functions with isolation capability not maintained.	
	B.1	Restore isolation capability (1 hour)

Event 5 – Feedwater Pump Trip, Recirc FCV A Fails to Runback (Triggered by Lead Examiner)

Annunciator P680-2A-A12, RFPT B TRIP will alarm and reactor feed pump "B" will trip. With the recirc pumps operating in fast speed combined with only 1 RFPT in service and RPV level lowering to < 32"NR, a Recirc flow control runback should occur to lower power to within the capability of 1 RFPT ($\approx$ 20% valve position). The recirc FCV runback will occur on the B loop only. The ATC should observe the A FCV did not respond and lower A loop flow to within TS limit for loop mismatch. If no action is taken, RPV level will lower to $\approx$ 20" NR and will then start slowly trending up.

05-1-02-V-7, Feedwater System Malfunctions ONEP should be entered that ensures the runback has occurred.

05-1-02-III-3, Reduction in Recirculation System Flow Rate ONEP should be entered to ensure:

- Recirc loop flow mismatch is within limits
- Perform plot on power/flow map
- OPRMs are armed
- THI watch established

GGNS 01-2024 NRC Scenario 1

The A RFPT will speed up to maintain RPV level and will result in receipt of alarm P680-2A-E2, RFP A VIBR HI. An NLO should be dispatched to investigate. When dispatched, the booth operator will inform the control room the vibration levels are below alarm values and will reset the alarm.

Event 6 – Coolant Leak in Drywell (Triggered by Lead Examiner)

A small coolant leak will develop from a Recirc loop into the Drywell. Drywell pressure and temperature will begin to rise. The crew will enter 05-1-02-I-1, Reactor Scram (see event 7). The crew will enter EP-2, RPV Control, and EP-3, Primary Containment Control. Initially, the crew will control Reactor water level with Condensate/Feedwater. The coolant leak will worsen later worsen and injection systems will be lost (events 8 and 9).

Event 7 – Automatic and Manual RPS Scrams Fail, ARI Works (Initial Setup)

When either the ATC attempts a manual Reactor scram or Drywell pressure exceeds the scram setpoint, RPS will fail to actuate and insert control rods. The ATC will manually initiate ARI (**critical task**) and all control rods will insert.

Event 8 – Condensate Pumps Trip (Triggered by Lead Examiner)

Once the Reactor is stabilized after the scram, Condensate pumps will trip. This will result in a loss of high-pressure Feedwater injection. The crew will transition to utilizing HPCS to maintain Reactor water level.

Event 9 – HPCS Pump Trip (Triggered by Lead Examiner)

Approximately two minutes after the loss of Condensate pumps, the HPCS pump will also trip. The crew will inject with the only remaining high-pressure injection sources, CRD and SLC, but this will not be enough injection to maintain Reactor water level. The crew will determine that Reactor water level cannot be maintained above -166" and perform an Emergency Depressurization (**critical task**). The crew will then utilize low-pressure systems to control Reactor water level above top of active fuel.

Once the Reactor has been Emergency Depressurized, and Reactor water level is controlled above top of active fuel, this scenario can be terminated.

GGNS 01-2024 NRC Scenario 1

Termination:

- When directed by Lead Evaluator, the booth operator will perform the following:
 - Take the simulator to Freeze and turn horns off.
 - Stop and save the SBT report and any other recording devices.
 - Instruct the crew to not erase any markings or talk about the scenario until after follow-up questions are asked.

GGNS 01-2024 NRC Scenario 1

Critical Task	CT-1, Given the plant operating at power with rising Drywell pressure and a failure of RPS to scram the Reactor, the crew will insert control rods by manually initiating ARI, in accordance with 05-1-02-I-1 and/or EP-2A. ARI must be manually initiated within 5 minutes of when Drywell pressure exceeds 1.23 psig. The basis for the 5 minute time limit is that it provides sufficient time for the crew to complete the critical task without allowing excessive degradation of plant safety. This time limit has been endorsed by Operations and Operations Training.
Event	7
Safety Significance	With Drywell pressure rising towards and eventually exceeding the scram setpoint, a Reactor scram is required. Continued power generation further challenges the Primary Containment. With RPS failing to scram the Reactor, ARI provides alternate means to insert control rods and shutdown the Reactor.
Initiating Cue	Multiple annunciators and indications will provide evidence that Drywell pressure is elevated and RPS has failed to scram the Reactor. EP-3 and EP-2 provide direction to scram the Reactor.
Performance Feedback	Control rod position and Reactor power indications will provide performance feedback regarding the success of ARI.
Success Path	Manually arm and depress ARI/RPT pushbuttons
Measurable Performance Standard	Arming and depressing of the ARI/RPT pushbuttons will provide observable actions for the evaluation team.

Critical Task	CT-2, Given a coolant leak, a loss of high-pressure injection systems, and the inability to restore and maintain Reactor water level above -191", the crew will perform an Emergency Depressurization, in accordance with EP-2, before Reactor water level reaches -191".
Event	9
Safety Significance	Without operator action to lower Reactor pressure, Reactor water level would lower, adequate core cooling would be lost, and fuel damage would occur.
Initiating Cue	Multiple annunciators and indications will provide evidence that Reactor water level is lowering. EP-2 provides direction to perform an Emergency Depressurization and inject to raise Reactor water level.
Performance Feedback	Reactor pressure and level indications, as well as low-pressure injection system flowrates, will provide performance feedback regarding the success of Emergency Depressurization.
Success Path	The crew will open SRVs by arming and depressing ADS logic initiation pushbuttons or manipulating SRV control switches.
Measurable Performance Standard	Arming and depressing the ADS logic initiation pushbuttons or manipulating SRV control switches will provide observable actions for the evaluation team.

* If an operator or the crew significantly deviates from, or fails to follow procedures that affect the maintenance of basic safety functions, those actions may form the basis of a CT identified in the post-scenario review (NUREG 1021, Appendix D). An unintentional or unnecessary RPS or ESF actuation may result in the creation of a post-scenario Critical Task, if that actuation results in a significant plant degradation or significantly alters a mitigation strategy.

GGNS 01-2024 NRC Scenario 1

Simulator Setup:

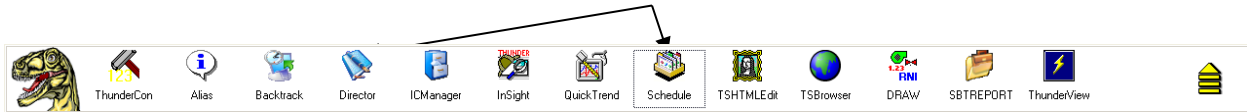
A. Initialization

1. Log off all simulator PDS and SPDS computers (PDS and SPDS must come up after the simulator load for proper operation).
2. Startup the simulator using Simulator Instructor's Job Aid section 7.3.

Note:

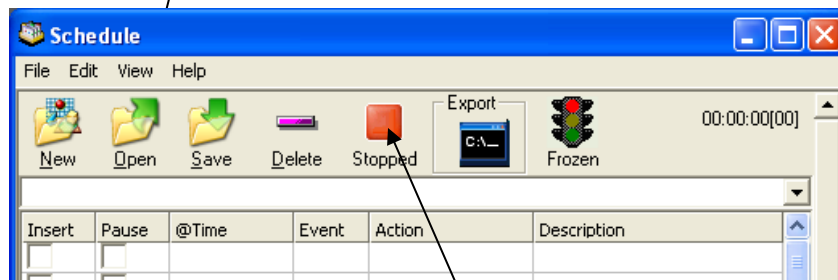
Prior to running the Schedule File, ensure no Event Files are Open. If an existing Event File is Open prior to running the Schedule File, then any associated Event Files will not automatically load.

3. Open Schedule.exe and Director.exe by clicking on the Icon in the Thunder Bar.



4. Set the Simulator to **IC-259** and perform switch check (Using Quick Reset in Director).
- OR
- 4a. Reset to IC1 and adjust power to approximately 85% with core flow approximately 90 Mlbs/hr

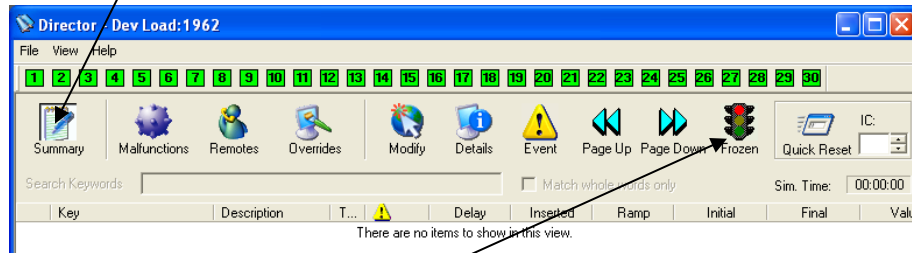
5. Click on **"Open"** in the Schedule window and Open Schedule File **"n24scen1.sch"** (in the Schedule Directory)



6. In Schedule window, click on the **"Stopped"** red block. The red block will change to a green arrow and indicate the scenario is active (**"Running"**).

GGNS 01-2024 NRC Scenario 1

- Click the Summary tab in the Director window. Verify the schedule files are loaded and opened per Section B below. (Note: Any actions in the schedule file without a specific time will not load into the director until triggered.)



- Take the simulator out of freeze.
- Log on to all simulator PDS and SPDS computers.

GGNS 01-2024 NRC Scenario 1

10. Verify or perform the following:

•	On HMI verify:
•	EHC control fluid pump A running
•	EHC control fluid pump B in standby
•	On P601-22 verify:
•	CRD pump A running
•	CRD pump B indicating lights off
•	CRD pump B aux oil pump control switch in STOP
•	CRD pump B aux oil pump indicating lights off
•	Place red tags on the following handswitches:
•	CRD pump B
•	CRD pump B aux oil pump
•	On Ovation HMIs, verify operational

11. Run through any alarms and ensure alarms are on. **(Note: On T-Rex, to verify alarms are ON, the indicator will indicate “Alarms On”).**

12. Place the simulator in Freeze.

13. Provide marked up copies of the following for crew turnover;

- 04-1-01-N32-1 Section 5.3.5. The procedure is in progress up to step 5.3.5.2.
- Reactivity instructions for moving control rods 24-33, 32-41, 40-33, and 32-25 from position 08 to position 12
- Marked up copy of IOI-2, attachment VIII indicating notifications have been made for raising power

GGNS 01-2024 NRC Scenario 1

Procedures that may be used in this scenario:

•	04-1-01-N32-1, EHC Control Fluid SOI
•	04-1-01-C11-2, Control Rod Drive Hydraulic SOI
•	04-1-01-C51-1, Neutron Monitoring SOI
•	ARI 04-1-02-P680-5A-B10, APRM UPSC/OPRM ALM
•	ARI 04-1-02-P680-7A-A11, APRM CH 2 UPSC TRIP / OPRM TRIP / INOP
•	ARI 04-1-02-P680-4A2-C5, CONT ROD WITHDRAWAL BLOCK
•	ARI 04-1-02-P680-5A-C10, APRM DNSC/TRBL
•	ARI 04-1-02-P680-7A-C1, TURB CV/SV CLOSE TRIP BYP
•	ARI 04-1-02-P680-11A-E3, RWCU AREA AMBIENT TEMP HI
•	ARI 04-1-02-1H13-P680-11A-E3, RWCU HX RM TEMP HI / INOP
•	ARI 04-1-02-1H13-P680-11A-E4, RWCU HX RM VLV NEST AREA TEMP HI / INOP
•	05-1-02-III-5, Automatic Isolations ONEP
•	04-1-01-G33-1, Reactor Water Cleanup SOI
•	ARI 04-1-02-P680-2A-A12, RFPT B TRIP
•	ARI 04-1-02-P680-3A-A3, RX LVL 40"/32" HI/LO
•	ARI 04-1-02-P680-4A1-C4, RECIRC FCV B PARTIAL CLOSE/RFP TRIP
•	05-1-02-V-7, Feedwater Malfunctions ONEP
•	05-1-02-III-3, Reduction in Recirc Flow ONEP
•	IOI 03-1-01-2, Power Operations
•	05-1-02-I-1, Reactor Scram ONEP
•	05-1-02-I-2, Turbine and Generator Trip ONEP
•	04-1-01-N21-1, Feedwater System SOI
•	04-1-01-C41-1, SLC System SOI
•	04-1-01-E12-1, RHR System SOI
•	04-1-01-E61-1, Combustible Gas Control SOI
•	05-1-02-III-5, Automatic Isolations ONEP hardcard
•	05-S-01-EP-2, RPV CONTROL
•	05-S-01-EP-2A, ATWS RPV CONTROL
•	05-S-01-EP-3, PRIMARY CONTAINMENT CONTROL
•	05-S-01-EP-4, AUXILIARY BUILDING CONTROL
•	EN-OP-115, Conduct of Operations
•	02-S-01-43, Transient Mitigation Response
•	Tech Specs

GGNS 01-2024 NRC Scenario 1

SCENARIO ACTIVITIES:		
Start SBT report and any other required recording devices.		
Event 1		
Event Description: Swap EHC Pumps (Normal Evolution)		
TIME	Position	Applicant's Actions or Behavior
	CRS	Direct BOP to start EHC control fluid pump B and place EHC control fluid pump A in standby per 04-1-01-N32-1 Section 5.3.5, starting at step 5.3.5.2.
	BOP	- NAVIGATE to EHC HPU CONTROL (HMI Graphic 5591). - On HMI Graphic 5591 at EHC HPU CONTROL, PLACE STANDBY EHC Control Fluid Pump B 1N32-C300B in MANUAL mode of operation as follows: - SELECT pump symbol labeled 1N32-C300B. - SELECT Title Block labeled CONTROL FLUID PUMP 1N32-C300B. - CONFIRM Control Block is outlined in Cornsilk indicating it is ENABLED. - SELECT MANUAL button. - CONFIRM following: - MANUAL button is Cornsilk. - Pump symbol status window indicates M indicating pump is in MANUAL mode of operation. - Control Block status indicates following: - STOPPED - MANUAL - On HMI Graphic 5591 at EHC HPU CONTROL, START STANDBY EHC Control Fluid Pump B 1N32-C300B in MANUAL mode of operation as follows: - SELECT START button. - CONFIRM following: - Pump symbol is Red indicating pump is RUNNING. - Pump discharge pressure rises to greater than 1800 psig as indicated on CNTRL FLUID PUMP B DISCH PRESS XMTR 1N32-PT-N300B. - START button is Cornsilk. - Control Block status indicates following: - RUNNING - MANUAL

GGNS 01-2024 NRC Scenario 1

	BOP	• On HMI Graphic 5591 at EHC HPU CONTROL, STOP EHC Control Fluid Pump A, 1N32-C300A as follows: ○ SELECT pump symbol labeled 1N32-C300A. ○ SELECT Title Block labeled CONTROL FLUID PUMP 1N32-C300A. ○ CONFIRM Control Block is outlined in Cornsilk indicating it is ENABLED. ○ SELECT STOP button. ○ CONFIRM following: ▪ Pump symbol is Green indicating pump is STOPPED. ▪ Pump discharge pressure lowers to less than or equal to 20 psig as indicated on CNTRL FLUID PUMP A DISCH PRESS XMTR 1N32-PT-N300A. ▪ STOP button is Cornsilk. ▪ Control Block status indicates following: • STOPPED • MANUAL • On HMI Graphic 5591 at EHC HPU CONTROL, PLACE EHC Control Fluid Pump A, 1N32-C300A in STANDBY as follows: ○ SELECT AUTO button. ○ CONFIRM following: ▪ AUTO button is Cornsilk. ▪ Pump symbol status window indicates A indicating pump is in AUTO mode of operation. ▪ Control Block status indicates following: • STOPPED • AUTO • STANDBY
	Booth	If asked to locally check pump start/stop, report you have indications of a good start/stop.

GGNS 01-2024 NRC Scenario 1

Event 2 Event Description: Withdraw Control Rods (Normal Evolution)		
TIME	Position	Applicant's Actions or Behavior
	CRS	Directs the ATC to withdraw control rods to raise the rod line per the provided reactivity instructions
	Note	The crew has been directed to withdrawn control rods 24-33, 32-41, 40-33, and 32-25 from position 08 to position 12
	ATC	Withdraws control rods per the provided reactivity instructions and 01-1-02-C11-2: • Selects INDIVIDUAL MODE using DRIVE MODE pushbutton on OCM • Checks INDIV DRIVE light energized • Selects rod to be moved by DEPRESSING corresponding ROD SELECT pushbutton on Rod Select panel on 1H13-P680 • Checks rod position is displayed for selected rod on RDM • Checks that selected rod is allowed to be withdrawn by RPC BY: ○ OBSERVING WITHDRAW BLOCK light is OFF, - OR ○ DEPRESSING WITHDRAW OK pushbutton on OCM - AND ○ OBSERVING a green status light on RDM for that rod/rod gang • MOMENTARILY DEPRESS WITHDRAW pushbutton AND OBSERVE the following: ○ The IN light energizes momentarily, THEN goes Off. ○ The DATA FAULT light May flash On, THEN Off IF RAW DATA is selected. ○ The OUT light Will come On, THEN go Off. ○ SETTLE light comes On for approximately 6.0 seconds. ○ ROD/GANG position on RDM shows new ROD/GANG position. ○ MONITOR nuclear instrumentation for changes in indication. • WITHDRAW each rod/rod gang in accordance with selected sequence provided by Reactor Engineering
	BOP	Peer checks control rod selection. Monitors plant parameters.

GGNS 01-2024 NRC Scenario 1

Event 3		
Event Description: Two APRMs Fail Sequentially (Triggered by Lead Examiner)		
Booth: When directed by Lead Examiner, insert Trigger 1 to fail APRM 2 upscale		
TIME	Position	Applicant's Actions or Behavior
	ATC	Recognizes / reports annunciators: • P680-5A-B10, APRM UPSC/OPRM ALM • P680-7A-A11, APRM CH • P680-4A2-C5, CONT ROD WITHDRAWAL BLOCK Recognizes / reports APRM channel 2 has failed upscale
	CRS	Acknowledges reports Directs bypassing APRM channel 2
	ATC	Refers to ARIs Bypasses APRM channel 2 per 04-1-02-C51-1: • Places APRM bypass switch to CH-2 position • Observes BYP indication is present for APRM channel 2 on the APRM module • Observes BYP status light is backlit for APRM channel 2 on panel 680
	Booth	Once APRM channel 2 is bypassed, insert Trigger 2 to fail APRM 3 downscale

GGNS 01-2024 NRC Scenario 1

Event 3 (continued)																										
Event Description: Two APRMs Fail Sequentially (Triggered by Lead Examiner)																										
TIME	Position	Applicant's Actions or Behavior																								
	ATC	Recognizes / reports annunciators: P680-5A-C10, APRM DNSC/TRBL Recognizes / reports APRM channel 3 has failed downscale																								
	CRS	Acknowledges reports Determines Technical Specification impact: <table border="1"> <tr> <td colspan="3">Tech Specs should be referred to and the following LCOs identified:</td></tr> <tr> <td>3.3.1.1</td><td colspan="2">Condition A, One or more required channels inoperable</td></tr> <tr> <td></td><td>A.1</td><td>Place channel in trip (12 hours)</td></tr> <tr> <td></td><td>A.2</td><td>Place associated trip system in trip (12 hours)</td></tr> <tr> <td>TRM 3.3.2.1</td><td colspan="2">Condition A, One or more required channels nonfunctional</td></tr> <tr> <td></td><td>A.1</td><td>Enter the Condition referenced in Table TR3.3.2.1-2 for that channel (immediately)</td></tr> <tr> <td></td><td colspan="2">Condition B, As required by Required Action A.1 and referenced in Table TR3.3.2.1-2</td></tr> <tr> <td></td><td>B.1</td><td>Enter Condition C (7 days)</td></tr> </table>	Tech Specs should be referred to and the following LCOs identified:			3.3.1.1	Condition A, One or more required channels inoperable			A.1	Place channel in trip (12 hours)		A.2	Place associated trip system in trip (12 hours)	TRM 3.3.2.1	Condition A, One or more required channels nonfunctional			A.1	Enter the Condition referenced in Table TR3.3.2.1-2 for that channel (immediately)		Condition B, As required by Required Action A.1 and referenced in Table TR3.3.2.1-2			B.1	Enter Condition C (7 days)
Tech Specs should be referred to and the following LCOs identified:																										
3.3.1.1	Condition A, One or more required channels inoperable																									
	A.1	Place channel in trip (12 hours)																								
	A.2	Place associated trip system in trip (12 hours)																								
TRM 3.3.2.1	Condition A, One or more required channels nonfunctional																									
	A.1	Enter the Condition referenced in Table TR3.3.2.1-2 for that channel (immediately)																								
	Condition B, As required by Required Action A.1 and referenced in Table TR3.3.2.1-2																									
	B.1	Enter Condition C (7 days)																								
	Booth	If requested as I&C to report to the Control Room, report in 10 minutes. If called as Reactor Engineering, acknowledge reports/requests. If asked as I&C to place APRM 3 in trip, acknowledge request but delay any action.																								
	Booth Cue	Follow operator to V-Panel and report to operator at back panel that APRM 3 indicates downscale. (Virtual wall does not provide analog indication)																								

GGNS 01-2024 NRC Scenario 1

Event 4											
Event Description: RWCU Leak into Containment, RWCU Fails to Automatically Isolate (Triggered by Lead Examiner)											
Booth: When directed by Lead Examiner, insert Trigger 3 (RWCU heat exchanger leak at 75% severity, no ramp)											
TIME	Position	Applicant's Actions or Behavior									
	ATC / BOP	Recognizes / reports annunciators: • P680-11A-E3, RWCU AREA AMBIENT TEMP HI • P680-11A-A3, RWCU HX RM TEMP HI/INOP (later) • P680-11A-E4, RWCU AREA DT HI (later) Recognizes / reports steam leak from RWCU Recognizes / reports failure of RWCU to automatically isolate									
	CRS	Acknowledges reports Directs ARIs Enters 05-1-02-III-5, Automatic Isolations ONEP May enter EP-4, Aux Building Control, on high temperature (until location of high temperature is confirmed to be inside Containment) Directs isolation of RWCU per G33 SOI Attachment VII hard card or ARI Evacuates Containment Determines Technical Specification impact: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3">Tech Specs should be referred to and the following LCOs identified:</td></tr> <tr> <td style="width: 10%;">3.3.6.1</td><td style="width: 10%;">Condition B,</td><td>One or more automatic Functions with isolation capability not maintained.</td></tr> <tr> <td></td><td>B.1</td><td>Restore isolation capability (1 hour)</td></tr> </table>	Tech Specs should be referred to and the following LCOs identified:			3.3.6.1	Condition B,	One or more automatic Functions with isolation capability not maintained.		B.1	Restore isolation capability (1 hour)
Tech Specs should be referred to and the following LCOs identified:											
3.3.6.1	Condition B,	One or more automatic Functions with isolation capability not maintained.									
	B.1	Restore isolation capability (1 hour)									

GGNS 01-2024 NRC Scenario 1

	BOP	Refers to ARIs, as time permits Monitors RWCU temperatures at P632 Performs the following per 04-1-01-G33-1, Attachment VII hard card or ARI: MANUALLY ISOLATE RWCU by CLOSING the following open valves: G33-F004 RWCU PMP SUCT CTMT OTBD ISOL G33-F039 RWCU RTN CTMT OTBD ISOL G33-F054 RWCU PMP DISCH CTMT OTBD ISOL G33-F040 RWCU RTN CTMT INBD ISOL G33-F053 RWCU RTN CTMT INBD ISOL G33-F250 RWCU SPLY TO RWCU HXS (P870-3C) G33-F253 RWCU HX RTN TO RWCU PMPS (P870-3C) G33-F251 RWCU SPLY TO RWCU HXS (P870-9C) G33-F252 RWCU HX RTN TO RWCU PMPS (P870-9C) Verifies RWCU pumps have tripped. Notifies CRS RWCU system is isolated and pumps are tripped.
		Evaluator Note: Closing either F250 or F251 will isolate the suction side. Remaining leak would be based on reverse flow through the return line check valves. To isolate the return line, F039 or F040 needs to be closed.
	Booth	If dispatched to investigate RWCU room, wait 2 minutes, then report that steam is coming out of RWCU Heat Exchanger Room. If asked to provide RWCU temperatures at P632, then report that Point 10 is in alarm and indicating 95°F and rising at T-0 and is rising at a rate of 5°F every 30 seconds. If asked about peak room temperature after the RWCU system is isolated, respond that peak room temperature reached 140°F.

GGNS 01-2024 NRC Scenario 1

Event 5		
Event Description: Feedwater Pump Trip, Recirc FCV A Fails to Runback (Triggered by Lead Examiner)		
Booth: When directed by Lead Examiner, insert Trigger 4		
Time	Position	Applicant's Actions or Behavior
	ATC	Recognizes / reports annunciators: • P680-2A-A12, RFPT B TRIP • P680-3A-A3, RX LVL 40"/32" HI/LO • P680-4A1-C4, RECIRC FCV B PARTIAL CLOSE/RFP TRIP Recognizes / reports trip of Feedwater pump B Observes runback on Recirc FCV B Recognizes / reports Recirc FCV A failed to runback and Monitors for THI
	CRS	Enters and directs subsequent actions from 05-1-02-V-7, Feedwater System Malfunctions ONEP: <u>NOTE 1</u> A.1 <u>IF</u> Reactor Recirculation Pumps are Operating in Fast Speed, <u>AND</u> Reactor Water Level LOWERS to 32.7 in., <u>THEN PERFORM</u> the following actions: <u>ENSURE</u> Reactor Recirculation System Flow Control Valve runback occurs (62 Mlbm/hr). <u>ENSURE</u> Reactor Power is <75%, <u>USE</u> RE Instructions.
	CRS	Enters and directs subsequent actions from 05-1-02-III-3, Reduction in Recirculation System Flow Rate. A1. <u>MONITOR</u> APRMs, LPRMs, SRM period meters, <u>AND</u> OPRM Computer Trends for thermal hydraulic instability. A2. <u>PLOT</u> Reactor Power and Core Flow on the Power / Flow Map • <u>IF</u> Feedwater Temperature is Normal <u>THEN USE</u> Attachment 2 Power / Flow Map Normal Feedwater Temperature - Two Loop Ops. A3. <u>IF</u> in the OPRM ARMED REGION, <u>THEN CHECK AT LEAST 2</u> OPRM channels are OPERABLE: • PDS INDICATES APRM 1 (2) (3) (4) OPRM TRIPs are ENABLED. • PDS INDICATES APRM 1 (2) (3) (4) OPRMs are <u>NOT</u> INOP. A7. <u>IF</u> operating ABOVE the allowable operating boundary line of the power / flow map, <u>THEN RESTORE</u> reactor power <u>AND</u> core flow to within the allowed region of the power / flow map by <u>EITHER</u> method: • <u>INSERT</u> control rods, <u>USE</u> RE Instructions. • <u>ADJUST</u> Core Flow, <u>USE</u> RE Instructions. A9. <u>WITHIN 2 hours PERFORM</u> the requirements of TS 3.4.1, <u>ENSURE</u> Recirculation Pump Loop Flow Rates are matched within allowable limits: • Core Flow < 78.7 mlbm/hr a difference of ≤ 4460 gpm A11. <u>IF</u> Reactor Thermal Power CHANGES > 15% <u>WITHIN 1 Hour</u> <u>THEN DIRECT</u> Chemistry to perform 06-CH-1D17-V-0061, Startup, Shutdown, and 15% Power Change.

GGNS 01-2024 NRC Scenario 1

	ATC	Places Recirc FCV A control lever to close in fast detent until loop flow mismatch is within limits Performs plot on power/flow map Attachment 2 Performs other actions as directed
	BOP	Performs actions as directed
	Booth	If dispatched to investigate RFPT B trip, wait 2 minutes, then report that there is nothing obviously wrong at RFPT B. If dispatched to investigate Recirc FCV A, acknowledge request. If Chemistry is contacted of the power change and requirement to perform surveillance 06-CH-1D17-V-0061, Startup, Shutdown, and 15% Power Change, acknowledge the command. No action will be performed. When/if required to clear RFPT A high vibration alarm, insert Trigger 8.

GGNS 01-2024 NRC Scenario 1

Events 6 and 7		
Event Description: Coolant Leak in Drywell (Triggered by Lead Examiner); Automatic and Manual RPS Scrams Fail, ARI Works (Automatic)		
Booth: When directed by Lead Examiner, insert Trigger 5		
TIME	Position	Applicant's Actions or Behavior
	Crew	Recognizes / reports rising Drywell pressure and temperature
	CRS	Acknowledges reports May direct power reduction with recirc / rods Directs manual Reactor scram (critical task) Acknowledges failure of RPS to insert rods Acknowledges ARI inserts rods Enters the following: • Reactor Scram ONEP, 05-1-02-I-1 • Turbine and Generator Trips ONEP, 05-1-02-I-2 • EP-2, RPV Control • EP-3, Primary Containment Control Directs all personnel to evacuate Containment due to reactor scram Directs BOP to align feedwater on startup level control and maintain RPV level within a band of 11.4" to + 53.5" NR Directs ATC to maintain RPV pressure within a band of 800 to 1060 psig using bypass valves May direct ATC to lower RPV pressure to band of 450-600 psig
	ATC	May lower power with recirc / rods, as directed and time permits Attempts manual Reactor scram per 05-1-02-I-1, Reactor Scram ONEP: • Places Reactor Mode Switch in SHUTDOWN • Observes all control rods not fully inserting • Observes Reactor power not lowering • Arms and depresses Reactor MANUAL SCRAM Pushbuttons • Performs ACRO ATWS Hard Card: ○ Ensure Reactor Recirculation pump transfer to LFMGs ○ Initiates ARI/RPT (critical task) ○ Ensures Reactor Recirc pumps are tripped ○ Recognizes / reports all control rods insert • Performs ACRO Scram Hard Card: ○ Ensures Main Turbine and Generator trip ○ Checks CRD discharge volume vents and drain indicate closed ○ Inserts IRMs ○ Inserts SRMs ○ Switches to IRM mode on recorders and selects IRM scales Reports RPV pressure within band

GGNS 01-2024 NRC Scenario 1

		Using 04-1-01-N21-1 Feedwater System SOI, Attachment VII hardcard, performs the following: NOTE The following steps can be performed concurrently. 2. PERFORM the following: • MINIMIZE the output of 1C34-LK-R602, RX WTR LVL SU CONT to CLOSE N21-F513. • MINIMIZE the output of 1N21-HC-R609, FW CU RECIRC VLV to CLOSE N21-F510. • DEPRESS the CLOSE pushbutton for the N21-F040, FW SU BYP VLV AND ENSURE valve is closed. 3. OPEN the following valves: • N21-F001, SU FCV OUTL ISOL VLV. • N21-F010A, HP FW HTR STRNG A SU OUTL VLV. • N21-F010B, HP FW HTR STRNG B SU OUTL VLV. 4. SELECT MAN on FW LVL MASTER CONT (1C34-LK-R600). 5. CLOSE the following valves: • N21-F009A, FW HTR 6A OUTL VLV. • N21-F009B, FW HTR 6B OUTL VLV. 7. IF using a RFPT, THEN PLACE a RFPT in SPEED AUTO with respective RFPT discharge pressure approximately 250 psid above reactor pressure. 8. ENSURE OPEN RFP A(B) DISCH VLV N21-F014A(B) for RFPTs that are operating OR as needed to establish a flow path for Condensate. 9. ADJUST 1C34-LK-R602, RX WTR LVL SU CONT as necessary in MAN OR AUTO to control N21-F513 to maintain desired Reactor level. N21-F040 AND N21-F009A(B) <u>May</u> be OPENED/CLOSED as necessary to augment flow.
	Booth	Once the plant has been stabilized and initial scram actions are complete, and with lead examiner concurrence, insert trigger 6 to raise the severity of the leak and initiate subsequent events.

GGNS 01-2024 NRC Scenario 1

Events 6 (cont.), 8, and 9		
Event Description: Coolant Leak in Drywell; Condensate Pumps Trip; HPCS Pump Trip (Triggered by Lead Examiner)		
Booth: Once the plant has been stabilized and initial scram actions are complete, and with lead examiner concurrence, insert trigger 6 to raise the severity of the leak and initiate subsequent events.		
TIME	Position	Applicant's Actions or Behavior
	Crew	Recognizes / reports rising drywell pressure Recognizes / reports trip of Condensate pumps (occurs sequentially over 30 seconds)
	CRS	Re-enters EP-2 and EP-3 as necessary Directs verifying high drywell pressure isolations, initiations, and diesel generators Directs Reactor water level controlled 11.4" to + 53.5" NR using HPCS, CRD, and/or SLC May direct Reactor water level controlled -30" to +50" (as injection is challenged)
	ATC / BOP	Verifies isolations complete using the isolation status board as a quick reference and verifying the following alarms: • P870-9A-A4, CTMT-DRWL ISOL DIV 2 OPER annunciator sealed in • P870-9A-B3, AUX BLDG ISOL DIV 2 OPER annunciator sealed in Reports Div 2 isolation complete. Verifies ECCS initiations by observing initiation logic white lights on and reports the following ECCS Status: • HPCS – pump running • LPCS / RHR A – pumps running • RHR B / C – pumps running • RCIC – running Reports Div 2 and 3 diesel generators running with cooling water. Controls Reactor water level in assigned band using HPCS, CRD, and/or SLC
	Crew	Recognizes / reports trip of HPCS pump (occurs 2 minutes after inserting trigger 6)
	CRS	Directs Reactor water level controlled above -166" using CRD and SLC Directs inhibiting ADS
	Booth	Once HPCS trips, increase coolant leak to 10%.
	ATC / BOP	Places SLC A and B handswitches to start. Using 04-1-01-C41-1 hard card, verifies the following: CHECK system initiation by OBSERVING following: - CHECK Squib Valves fired on following: 1C41-F004A, SLC PUMP C001A DISCHARGE SQUIB VALVE White SQUIB VLV READY light OFF 1C41-F004B, SLC PUMP C001B DISCHARGE SQUIB VALVE

GGNS 01-2024 NRC Scenario 1

		• White SQUIB VLV READY light OFF 3) Annunciator SLC SYSTEM A OOSVC ON 4) Annunciator SLC SYSTEM B OOSVC ON 5) SLC A SYS STATUS SQUIB A LOSCONT/PWRLOSS light ON 6) SLC B SYS STATUS SQUIB B LOSCONT/PWRLOSS light ON b. CHECK OPEN Tank Outlet Valves: • 1C41 F001A • 1C41 F001B c. SLC Pump A RUNNING d. SLC Pump B RUNNING e. RWCU ISOLATES: (previously isolated) • G33-F004, RWCU PMP SUCT CTMT OTBD ISOL, CLOSED • G33-F001, RWCU PMP SUCT DRWL INBD ISOL, CLOSED • G33-F251, RWCU SPLY TO RWCU HXS, CLOSED CHECK SLC INJECTING INTO the RPV by observing following: • SLC Pump discharge pressure greater than reactor pressure • SLC Tank Level lowering Inhibits ADS by placing both ADS INHIBIT switches to INHIBIT (P601-19B).
	CRS	Determines Reactor water level cannot be restored and maintained above -166" Enters Emergency Depressurization leg of EP-2 Directs opening 8 ADS/SRVs (critical task) prior to reaching -191". Directs monitoring for injection from RHR/LPCS and report when RPV level is restored above TAF Directs restoring RPV level and maintaining a level band of -30 inches the +50" WR using RHR / LPCS After verifying RPV level can be maintained, directs placing RHR in suppression pool cooling Directs starting Hydrogen Igniters
	ATC / BOP	Opens 8 ADS/SRVs Observes injection from RHR / LPCS Throttles injection from RHR / LPCS to maintain a level band of -30 inches the +50" WR

GGNS 01-2024 NRC Scenario 1

	ATC / BOP	If directed to place RHR in suppression pool cooling, performs the following per SOI 04-1-01-E12-1, Attachment VI hard card: (1) On Panel 1H13-P601-20B(17B), CHECK SSW A(B) in service by observing > 7,900 gpm on indicator E12-R602A(B), SSW HX A(B) SSW FLO. (2) ENSURE the following lineup on Panel 1H13-P870-1B(7B): (a) SSW A(B) Pump, RUNNING. (b) P41-F001A(B), SSW PMP A(B) DISCH VLV, OPEN. (c) P41-F005A(B), SSW LOOP A(B) RTN TO CLG TWR A(B), OPEN. (d) P41-F014A(B), SSW INL TO RHR HX A(B), OPEN. (e) P41-F006A(B), SSW PMP A(B) RECIRC VLV, CLOSED. (3) ENSURE OPEN E12-F003A(B), RHR HX A(B) OUTL VLV. (5) ENSURE RHR PMP A(B) running. (6) BEGIN OPENING E12-F024A(B), RHR A(B) TEST RTN TO SUPP POOL. (7) CLOSE E12-F048A(B), RHR HX A(B) BYP VLV. (8) ENSURE OPEN E12-F024A(B), RHR A(B) TEST RTN TO SUPP POOL. (9) WHEN flow exceeds 1154 gpm, THEN ENSURE E12-F064A(B), RHR A(B) MIN FLO TO SUPP POOL, closes. (10) WHEN time permits, THEN REFER to Section 5.2 of this procedure.
	ATC / BOP	Using SOI 04-1-01-E61-1 hard card, performs the following: Energizes Div 2 Hydrogen Igniters by performing the following: • CONFIRM running A(B) CTMT and A(B) DW H2 Analyzers or START by placing hand switch(es) to START • CONFIRM the amber light on for the 0-10% scale on recorders 1E61-R602A(B) • ENSURE A(B) CTMT <u>AND</u> A(B) DW H2 Analyzers have been in service for > 60 seconds. • CONFIRM Containment hydrogen concentration is in the SAFE Region of the Hydrogen Deflagration Overpressure Limit Curve and Drywell hydrogen concentration is < 9% • ENERGIZE Div I H2 Igniters by PLACING H2 IGNITER SYS A hand switch to ON. • ENERGIZE Div II H2 Igniters by PLACING H2 IGNITER SYS B hand switch to ON
	Booth	If requested to investigate trip of Condensate pumps, wait 4 minutes and then report that they tripped due to low hotwell signal. If requested to investigate trip of HPCS, wait 2 minutes and then report that it tripped on overcurrent.

GGNS 01-2024 NRC Scenario 1

Once the Reactor has been Emergency Depressurized, and Reactor water level is controlled above top of active fuel, this scenario can be terminated.

Termination:

- When directed by Lead Evaluator:
 - Take the simulator to Freeze and turn horns off.
 - Stop and save the SBT report and any other recording devices.
 - Instruct the crew to not erase any markings or talk about the scenario until after follow-up questions are asked.

GGNS 01-2024 NRC Scenario 1

Give this page to the CRS

Crew Turnover:

Reactor Power:	84.8%, MOC
Core flow	89.8 mlbm/hr
PRA Risk:	GREEN
Integrated Risk:	LOW
Work Week:	Div 1
Inop Equipment:	CRD pump B is tagged out of service for maintenance.

Turnover:

Perform the following items in the order listed when turnover is complete:

- Start EHC control fluid pump B and place EHC control fluid pump A in standby per 04-1-01-N32-1 Section 5.3.5. The procedure is in progress up to step 5.3.5.2.
- Then, withdraw control rods to raise the rod line per the provided reactivity instructions.

GGNS 01-2024 NRC Scenario 2

Facility:	Grand Gulf	Scenario #:	NRC-2
Scenario Source:	New	Op. Test #:	2024
Examiners:		Applicants/	
		Operators:	
Initial Conditions:	The plant is operating at approximately 100% power. CCW pump C is out of service for maintenance. Suppression Pool level is low.		
Turnover:	Makeup to the Suppression Pool using HPCS per 04-1-01-E22-1. Then, lower Reactor power to 1400 MWe using Recirc flow per the provided reactivity instructions.		
Critical Tasks:	CT-1: Given a failure to scram with Reactor power above 5%, the crew will lower Reactor power by one or more of the following methods, in accordance with EOP-2A: • Terminating and preventing all RPV injection except SLC, RCIC and CRD • Tripping Recirc pumps The Reactor power reduction must be initiated within 90 seconds of the start of the failure to scram. CT-2: Given a failure to scram, the crew will initiate control rod insertion, in accordance with EOP-2A. All insertable control rods must be inserted within one hour of the start of the failure to scram. CT-3: Restore instrument air to the containment and drywell (to maintain MSIVs open) prior to SRVs cycling to control RPV pressure.		

GGNS 01-2024 NRC Scenario 2

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Makeup to the Suppression Pool from HPCS SOI 04-1-01-E22-1
2	N/A	R – ATC, SRO	Lower Reactor Power using Recirc IOI 03-1-01-2
3	p43152a	C – BOP, SRO MC – BOP	TBCW Pump Trip, Standby Pump Fails to Automatically Start EN-OP-200
4	e22054 e22054	I – BOP, SRO MC – BOP TS – SRO	DW Press instruments B21-PIS-N667C & G fail upscale causing Initiation of Div III ECCS, HPCS Initiates 04-1-01-E22-1 Attachment V, Technical Specifications 3.5.1, 3.3.5.1, 3.3.6.1, 3.3.8.1
5	rr012	C – ATC, SRO TS – SRO	Recirc Pump Trip ONEP 05-1-02-III-3, Technical Specifications 3.4.1, 3.3.1.1
6	rr071	M – All	Fuel Failure ONEP 05-1-02-II-2, ONEP 05-1-02-I-1, EP-2
7	c11167	C – All MC – ATC, BOP	RPS and ARI Fail to Insert Control Rods EP-2A
8	c41c001	C – BOP, SRO	SLC Pumps Trip EP-2A
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (TS)Tech Spec, (MC)Manual Control			

GGNS 01-2024 NRC Scenario 2

Initial Conditions:

- Plant is operating at approximately 100% power, Middle of Cycle
- Suppression Pool level is low.

Inoperable Equipment:

- CCW pump C is tagged out of service for maintenance.

Planned activities:

- Makeup to the Suppression Pool using HPCS per 04-1-01-E22-1. Raise Suppression Pool level to 18.5 feet.
- Then, lower Reactor power to 1400 MWe using Recirc flow per the provided reactivity instructions.

Scenario Notes:

- Validation Time: 60 minutes

GGNS 01-2024 NRC Scenario 2

SCENARIO ACTIVITIES:

Event 1 – Makeup to Suppression Pool Makeup using HPCS (Normal evolution)

After the crew assumes the shift, the BOP will makeup to the Suppression Pool makeup using HPCS per 04-1-01-E22-1, HPCS SOI.

Event 2 – Lower Reactor Power using Recirc (Reactivity evolution)

Following the normal evolution, the ATC will lower Reactor power to approximately 1400 MWe using Recirc flow.

Event 3 – TBCW Pump Trip, Standby Pump Fails to Automatically Start (Triggered by Lead Examiner)

A TBCW pump trip will occur and the standby pump will fail to auto start. The BOP operator should recognize the failure of the standby pump to start and start the standby pump.

Event 4 – Spurious Initiation of Div 3 ECCS, HPCS initiates (Triggered by Lead Examiner)

An upscale failure of DW Press instruments B21-PIS-N667 C & G causes initiation of Div III ECCS, HPCS initiates. The crew uses the hardcard 04-1-01-E22-1 Attachment V to secure HPCS, the failed drywell pressure instruments and HPCS overridden off results in entry into multiple LCOs. The SRO will determine the Technical Specification impact.

Tech Specs should be referred to and the following LCOs identified:		
3.5.1	Condition B, HPCS inoperable	
	B.1	Verify by administrative means RCIC is operable (1 hour)
	B.2	Restore HPCS to operable (14 days)
3.3.5.1	Condition A, One or more required channels inoperable	
	A.1	Enter the Condition referenced in Table 3.3.5.1-1 for the channel (Immediately)
	Condition B,	
	B.2	Declare HPCS INOP (1 hour)
3.3.6.1	Condition A, One or more required channels inoperable	
	A.1	Place channel in trip (24 hours)
	Condition F, as required by required action C .1	
	F.1	Isolate the affected penetration flow path. (1 hour)
Tech Specs should be referred to and the following LCOs identified:		
3.5.1	Condition B, HPCS inoperable	
	B.1	Verify by administrative means RCIC is operable (1 hour)
	B.2	Restore HPCS to operable (14 days)
3.3.5.1	Condition A, One or more required channels inoperable	
	A.1	Enter the Condition referenced in Table 3.3.5.1-1 for the channel (Immediately)
	Condition B,	
	B.2	Declare HPCS INOP (1 hour)
3.3.6.1	Condition A, One or more required channels inoperable	
	A.1	Place channel in trip (24 hours)
	Condition F, as required by required action C .1	
	F.1	Isolate the affected penetration flow path. (1 hour)

Event 5 – Recirc Pump Trip (Triggered by Lead Examiner)

GGNS 01-2024 NRC Scenario 2

A Recirc pump trip occurs. The CRS will enter 05-1-02-III-3, Reduction in Recirculation System Flowrate ONEP. The ATC should perform a plot on the Power / Flow operating map, verify OPRMs are armed, and assume THI monitoring. Control rod insertion will be required to gain entry to within the restraints of Attachment 3 of the ONEP. CRS will determine the Technical Specification impact.

Tech Specs should be referred to and the following LCOs identified:	
3.4.1	Establish single loop limits (12 hours)
3.3.1.1	Establish single loop limits (12 hours)
TRM should be referred to and the following identified:	
3.3.2.1	Establish single loop limits (12 hours)

Event 6 – Fuel Failure (Triggered by Lead Examiner)

Fuel failure will occur. High radiation alarms will be received for Drywell airborne, Offgas Pretreatment, and Main Steam Line radiation. The CRS should enter 05-1-02-II-2, Offgas Activity High ONEP. The CRS should determine that without action, Offgas Pre-treat radiation values will exceed 1400 mr/hr and direct core flow to be lowered to 70 mlbm/hr. With the lowering of core flow, 05-1-02-III-3, Reduction in Recirculation System Flow Rate ONEP should be entered. Offgas radiation levels will continue to worsen and the crew will attempt a manual Reactor scram.

Event 7 – RPS and ARI Fail to Insert Control Rods (Initial Setup)

When the crew attempts the manual Reactor scram, RPS and ARI will fail to insert control rods. The CRS will enter EP-2, RPV Control, and transition to EP-2A, ATWS RPV Control. The crew will take actions to lower Reactor power, including lowering Recirc flow, tripping Recirc pumps, intentionally lowering Reactor water level, and/or initiating boron injection with SLC (**critical task**). The crew will also take action to insert control rods by venting the scram air header, tripping RPS circuit breakers, and/or manually inserting control rods (**critical task**).

Event 8 – SLC Pumps Trip (Initial Setup)

When the crew starts SLC pumps, they will trip after one minute of operation. This will limit the negative reactivity from boron injection and lead to a higher power level for the remainder of the ATWS.

Once control rods are inserted and Reactor water level is controlled above top of active fuel, this scenario can be terminated.

GGNS 01-2024 NRC Scenario 2

Termination:

- When directed by Lead Evaluator, the booth operator will perform the following:
 - Take the simulator to Freeze and turn horns off.
 - Stop and save the SBT report and any other recording devices.
 - Instruct the crew to not erase any markings or talk about the scenario until after follow-up questions are asked.

GGNS 01-2024 NRC Scenario 2

Critical Task	CT-1, Given a failure to scram with Reactor power above 5%, the crew will lower Reactor power by one or more of the following methods, in accordance with EOP-2A: - Terminating and preventing all RPV injection except SLC, RCIC and CRD - Tripping Recirc pumps The Reactor power reduction must be initiated within 90 seconds of the start of the failure to scram.
Event	7
Safety Significance	Without operator action to lower Reactor power, the risk of damage to fission product barriers is significantly elevated.
Initiating Cue	Multiple annunciators and indications will provide evidence that the Reactor has failed to scram and that Reactor power remains above 5%. EP-2 and EP-2A provide direction to lower Reactor power.
Performance Feedback	Reactor water level and injection source flow rates will provide performance feedback regarding the success of rapidly lowering RPV water level. Recirc pump and SLC pump indications and flow rates will provide performance feedback regarding the success of operating those systems. Overall, multiple indications will provide performance feedback on the effect of these actions on Reactor power.
Success Path	The crew will manipulate injection sources to lower Reactor water level, Recirc pump controls, and/or SLC controls.
Measurable Performance Standard	Manipulating injection sources, Recirc pump controls, and/or SLC controls will provide the evaluation team with observable actions.

Critical Task	CT-2, Given a failure to scram, the crew will initiate control rod insertion, in accordance with EOP-2A. All insertable control rods must be inserted within one hour of the start of the failure to scram. The basis for the one hour time limit is that it provides sufficient time for the crew to complete the critical task without allowing excessive degradation of plant safety. This time limit has been endorsed by Operations and Operations Training.
Event	7
Safety Significance	Without operator action to insert control rods, the Reactor will not achieve a stable, long-term shutdown condition.
Initiating Cue	Multiple annunciators and indications will provide evidence of the failure of control rods to insert on the scram.
Performance Feedback	Control rod position indication and Reactor power indication will provide performance feedback regarding the success of control rod insertion.
Success Path	The crew will utilize one or more methods in EP-1 to insert control rods, such as venting the scram air header and/or manual insertion using RCIS.
Measurable Performance Standard	Manipulation of CRD/RCIS components and/or directions to field operators will provide observable actions for the evaluation team.

GGNS 01-2024 NRC Scenario 2

Critical Task	CT-3, Restore instrument air to the containment and drywell (to maintain MSIVs open) prior to SRVs cycling to control RPV pressure.
Event	7
Safety Significance	Instrument air to the containment and drywell automatically isolates on either high drywell pressure (1.23 psig) or low RPV level (-41.6" WR). Failure to restore instrument air to the containment and drywell will result in closure of the inboard MSIVs (after $\approx$ 8.5 minutes). If this occurs, the use of the main condenser as a heat sink is lost and energy will thereby be transferred to the suppression pool/containment through SRVs. This would in turn unnecessarily challenge the containment. Also, since both GGNS reactor feed pumps are steam driven, the reactor feed pumps would stop injecting once steam pressure downstream of the MSIVs deplete. This would require the crew to lower RPV pressure with SRVs to a band of 450-600 psig to enable condensate booster pumps to inject. Failure to lower RPV pressure would result in RPV level lowering to < -191" CFZ and require emergency depressurization. The lowering of RPV pressure would also add positive reactivity and result in a slightly higher reactor power level.
Initiating Cue	An automatic isolation signal is received and: • P53-F001, INST AIR SPLY HDR TO CTMT indicates closed (P870-3C) • P53-F007, INSTR AIR SPLY HDR TO DRWL indicates closed (P870-9C) (Note: valve position indication can also be observed on the isolation status board)
Performance Feedback	Observes red (open) lights for both valves. (Note: valve position indication can also be observed on the isolation status board).
Success Path	The crew will utilize guidance in EP-2A and EP-1 Attachment 7 to accomplish the task.
Measurable Performance Standard	30 seconds after the isolation signal is received, places the handswitches for P53-F001 and P53-F007 to the open position.

* If an operator or the crew significantly deviates from, or fails to follow procedures that affect the maintenance of basic safety functions, those actions may form the basis of a CT identified in the post-scenario review (NUREG 1021, Appendix D). An unintentional or unnecessary RPS or ESF actuation may result in the creation of a post-scenario Critical Task, if that actuation results in a significant plant degradation or significantly alters a mitigation strategy.

GGNS 01-2024 NRC Scenario 2

Simulator Setup:

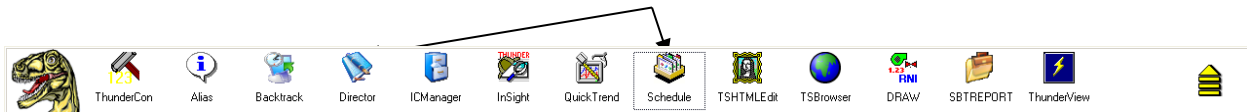
A. Initialization

1. Log off all simulator PDS and SPDS computers (PDS and SPDS must come up after the simulator load for proper operation).
2. Startup the simulator using Simulator Instructor's Job Aid section 7.3.

Note:

Prior to running the Schedule File, ensure no Event Files are Open. If an existing Event File is Open prior to running the Schedule File, then any associated Event Files will not automatically load.

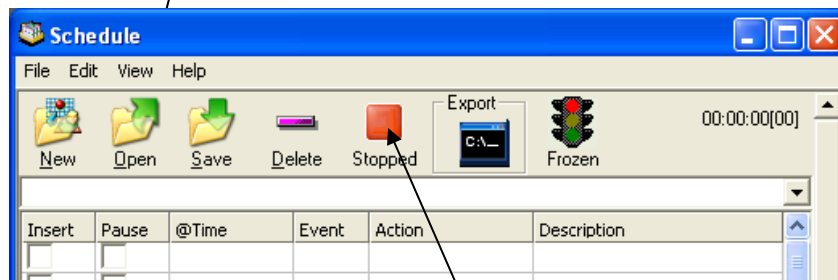
3. Open Schedule.exe and Director.exe by clicking on the Icon in the Thunder Bar.



4. Set the Simulator to **IC-257** and perform switch check (Using Quick Reset in Director).

OR

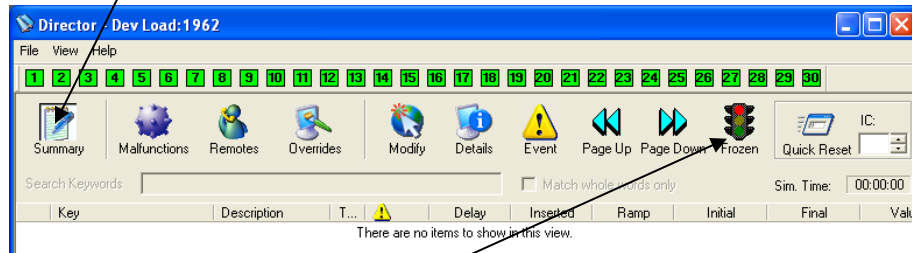
- 4a. Reset to IC-1 (MOC 100% power) and perform the following:
5. Click on **"Open"** in the Schedule window and Open Schedule File **"n24scen2.sch"** (in the Schedule Directory)



6. In Schedule window, click on the **"Stopped"** red block. The red block will change to a green arrow and indicate the scenario is active (**"Running"**).

GGNS 01-2024 NRC Scenario 2

- Click the Summary tab in the Director window. Verify the schedule files are loaded and opened per Section B below. (Note: Any actions in the schedule file without a specific time will not load into the director until triggered.)



- Take the simulator out of freeze.
- Log on to all simulator PDS and SPDS computers.

GGNS 01-2024 NRC Scenario 2

10. Verify or perform the following:

•	On P601-22 verify:
•	CCW pump A running
•	CCW pump B running
•	CCW pump C indicating lights off
•	Place red tags on the following handswitches:
•	CCW pump C
•	Verify Ovation screens NOT frozen.

11. Run through any alarms and ensure alarms are on. **(Note: On T-Rex, to verify alarms are ON, the indicator will indicate “Alarms On”).**

12. Place the simulator in Freeze.

13. Provide marked up copies of the following for crew turnover;

- Reactivity instructions for lowering Reactor power to 1400 MWe using Recirc flow
- Marked up copy of IOI-2, Attachment VIII indicating notifications have been made for lowering power

GGNS 01-2024 NRC Scenario 2

Procedures that may be used in this scenario:

•	04-1-01-E22-1, High Pressure Core Spray System SOI
•	IOI 03-1-01-2, Power Operations
•	04-1-01-E12-1, RHR System SOI
•	04-1-01-E61-1, Combustible Gas Control System SOI
•	05-1-02-V-2, Loss of Turbine Building Cooling Water ONEP
•	05-1-02-II-2, Off-Gas High Activity ONEP
•	05-1-02-III-3, Reduction in Recirculation System Flow Rate ONEP
•	05-S-01-EP-4, Auxiliary Building Control
•	05-1-02-I-1, Reactor Scram ONEP
•	05-1-02-I-2, Turbine and Generator Trip ONEP
•	05-S-01-EP-2, RPV CONTROL
•	05-S-01-EP-2A, ATWS RPV CONTROL
•	04-1-01-C41-1, Standby Liquid Control System SOI
•	04-1-01-C11-1, Control Rod Drive Hydraulic System SOI
•	EN-OP-115, Conduct of Operations
•	02-S-01-43, Transient Mitigation Response
•	Tech Specs

GGNS 01-2024 NRC Scenario 2

SCENARIO ACTIVITIES: Start SBT report and any other required recording devices.		
Event 1 Event Description: Makeup to the Secure Suppression Pool from HPCS. (Normal Evolution)		
TIME	Position	Applicant's Actions or Behavior
	CRS	Directs BOP to makeup to the Suppression Pool makeup using HPCS per 04-1-01-E22-1 to raise suppression pool level to 18.55 feet (to clear the low level alarms).
	BOP	Perform Suppression Pool makeup using HPCS per 04-1-01-E22-1 to raise suppression pool level to 18.55 feet (to clear the low level alarms). - Verify prerequisites. - PLACE HPCS MOV TEST handswitch on 1H13-P601-16B to TEST position. - VERIFY that "HPCS SYS OOSVC" annunciator (1H13-P601-16A-H5) Alarms. - VERIFY that status light HPCS MOV IN TEST STATUS (1H13-P601-16B) comes On. - THROTTLE OPEN F023, HPCS TEST RTN TO SUPP POOL, UNTIL desired rate of level increase is attained. - CHECK CST level is falling AND suppression pool level is rising. - When suppression pool level reaches 18.55 feet (to clear the low level alarms) CLOSE F023. - Reports suppression pool level to the CRS.

GGNS 01-2024 NRC Scenario 2

Event 2		
Event Description: Lower Reactor Power using Recirc (Reactivity Evolution)		
TIME	Position	Applicant's Actions or Behavior
	CRS	Directs the ATC to lower Reactor power to 1400 MWe using Recirc flow per the provided reactivity instructions
	ATC	Using Recirc FCVs (P680-3B), lowers reactor power to achieve approximately 1400 MWe power
	BOP	Monitors plant parameters

GGNS 01-2024 NRC Scenario 2

Event 3		
Event Description: TBCW Pump Trip, Standby Pump Fails to Automatically Start (Triggered by Lead Examiner)		
Booth: When directed by lead examiner, insert Trigger 3		
Time	Position	Applicant's Actions or Behavior
	BOP	Recognizes / reports annunciators: • P870-5A-B3, TBCW PMP A TRIP • P870-5A-C4, TBCW PMPS DISCH PRESS LO Recognizes / reports trip of TBCW pump A Recognizes / reports failure of TBCW pump C to automatically start Starts TBCW pump C
	Note	The Standby TBCW pump should be started prior to reaching step B3 of the LOSS OF TBCW ONEP IAW EN-OP-200 which states: Failed Automatic Actions a. ENSURE operators backup automatic action when they fail to occur. b. IF an automatic control malfunctions, THEN ESTABLISH manual control.
	CRS	Acknowledges reports May reference 05-1-02-V-2, Loss of Turbine Building Cooling Water
	BOP	Monitors TBCW parameters per 05-1-02-V-2 Attachment 2
	Booth	If directed to perform post-start checks on TBCW pump C and investigate TBCW pump A trip: • Wait 3 minutes and report locally at TBCW pump, there is no indication for the A pump trip and pump C is operating normally. • Wait 3 minutes and report breaker 152-1313 is tripped with 86 device lockout and instantaneous trip flags.

GGNS 01-2024 NRC Scenario 2

Event 4

Event Description: DW Press Instruments B21-PIS-N667C &G Fail Upscale Causing Initiation of Div III ECCS, HPCS Initiates (Triggered by Lead Examiner)

Booth: When directed by lead examiner, insert Trigger 1

TIME	Position	Applicant's Actions or Behavior																																				
	BOP	Recognizes / reports annunciator P601-16A-B4 DRWL PRESS HI Recognizes / reports spurious Div III ECCS initiation Recognizes / reports annunciators Recognizes / reports initiation of HPCS																																				
	CRS	Acknowledges reports Directs the BOP to verify the initiation was spurious Directs the BOP to secure HPCS using the handcard. (Attachment V of HPCS SOI) Directs I&C to investigate. Determines Technical Specification impact: <table border="1" style="width: 100%;"> <tr> <td colspan="3">Tech Specs should be referred to and the following LCOs identified:</td></tr> <tr> <td>3.5.1</td><td colspan="2">Condition B, HPCS inoperable</td></tr> <tr> <td></td><td>B.1</td><td>Verify by administrative means RCIC is operable (1 hour)</td></tr> <tr> <td></td><td>B.2</td><td>Restore HPCS to operable (14 days)</td></tr> <tr> <td>3.3.5.1</td><td colspan="2">Condition A, One or more required channels inoperable</td></tr> <tr> <td></td><td>A.1</td><td>Enter the Condition referenced in Table 3.3.5.1-1 for the channel (Immediately)</td></tr> <tr> <td></td><td colspan="2">Condition B,</td></tr> <tr> <td></td><td>B.2</td><td>Declare HPCS INOP (1 hour)</td></tr> <tr> <td>3.3.6.1</td><td colspan="2">Condition A, One or more required channels inoperable</td></tr> <tr> <td></td><td>A.1</td><td>Place channel in trip (24 hours)</td></tr> <tr> <td></td><td colspan="2">Condition F, as required by required action C .1</td></tr> <tr> <td></td><td>F.1</td><td>Isolate the affected penetration flow path. (1 hour)</td></tr> </table>	Tech Specs should be referred to and the following LCOs identified:			3.5.1	Condition B, HPCS inoperable			B.1	Verify by administrative means RCIC is operable (1 hour)		B.2	Restore HPCS to operable (14 days)	3.3.5.1	Condition A, One or more required channels inoperable			A.1	Enter the Condition referenced in Table 3.3.5.1-1 for the channel (Immediately)		Condition B,			B.2	Declare HPCS INOP (1 hour)	3.3.6.1	Condition A, One or more required channels inoperable			A.1	Place channel in trip (24 hours)		Condition F, as required by required action C .1			F.1	Isolate the affected penetration flow path. (1 hour)
Tech Specs should be referred to and the following LCOs identified:																																						
3.5.1	Condition B, HPCS inoperable																																					
	B.1	Verify by administrative means RCIC is operable (1 hour)																																				
	B.2	Restore HPCS to operable (14 days)																																				
3.3.5.1	Condition A, One or more required channels inoperable																																					
	A.1	Enter the Condition referenced in Table 3.3.5.1-1 for the channel (Immediately)																																				
	Condition B,																																					
	B.2	Declare HPCS INOP (1 hour)																																				
3.3.6.1	Condition A, One or more required channels inoperable																																					
	A.1	Place channel in trip (24 hours)																																				
	Condition F, as required by required action C .1																																					
	F.1	Isolate the affected penetration flow path. (1 hour)																																				
	BOP	Secures HPCS using the 04-1-01-E22-1 Att V SPURIOUS HPCS INITIATION HARD CARD 1. CONFIRM by at least two independent means, that HPCS initiation was spurious. 2. IF HPCS initiation is confirmed to have been spurious, THEN TAKE following actions: a. TRIP HPCS Pump as soon as possible. b. CLOSE 1E22-F004, HPCS INJ SHUTOFF VLV. (N/A IF HPCS CANNOT be promptly secured, THEN PLACE Reactor Mode Switch in SHUTDOWN.)																																				
	ATC	Monitor reactor level transient from the HPCS initiation. Reports to the CRS that feedwater level control is responding to the transient.																																				

GGNS 01-2024 NRC Scenario 2

	Booth	If contacted by the control room to investigate, say that it sounds like someone may have keyed a radio in the area where the transmitters are and that you will ask the Aux Building Operator if he was in the area. Wait 3 minutes and call the control room to confirm that the Aux Building Operator accidentally keyed his radio while taking rounds in a “no radio transmission” area on 135’ inside Containment. If operator brings up P625 on the V-panel, the booth should follow operator and if necessary tell the operator that N667C and G are reading upscale and trip lights are on. If requested for I&C to report to the control room, wait 3 minutes and report to the control room. Go with an operator to the virtual wall. Bring up panel P625 if not already done and pointing out the failures on N667C and G upscale. Tell the CRS that you will initiate a work order for troubleshooting and repair. They keying of the radio may have cause damage to the circuit boards. If control room contacts an operator to monitor the HPCS diesel, acknowledge the request.

GGNS 01-2024 NRC Scenario 2

Event 5		
Event Description: Recirc Pump Trip (Triggered by Lead Examiner)		
Booth: When directed by lead examiner, insert Trigger 2.		
TIME	Position	Applicant's Actions or Behavior
	Crew	Recognizes / reports annunciator P680-3A-B4, RECIRC PMP A OVERLD/TRIP Recognizes / reports Recirc pump trip Recognizes / reports lowering Reactor power and core flow
	CRS	Acknowledges reports Enters and directs subsequent actions from 05-1-02-III-3, Reduction in Recirculation System Flow Rate ONEP. Performs update. C1. MONITOR APRMs, LPRMs, SRM period meters, AND OPRM Computer Trends for thermal hydraulic instability. C2. PLOT Reactor Power and Core Flow on the Power / Flow Map USE Attachment 3 Power / Flow Map, Reduced Feedwater Temperature / Single Loop Ops. C4. IF in the OPRM ARMED REGION, THEN CHECK AT LEAST 2 OPRM channels are OPERABLE: • PDS INDICATES APRM 1 (2) (3) (4) OPRM TRIPs are ENABLED. • PDS INDICATES APRM 1 (2) (3) (4) OPRMs are NOT INOP. C6. WITHIN 30 minutes PERFORM requirements of TRM TR3.4.1, ENSURE OPERATING Recirculation Pump Loop Flow Rate is < 44,600 gpm. DOCUMENT the time and date operating Recirculation Pump Flow Loop Rate is confirmed to be < 44,600 gpm, Time: _____ Date: _____ C7. CHECK that operation is WITHIN ALL of the following limits: • Core Power < 2705 MWth (61.4% rated thermal power) • Control Rod Load Line ≤ 91.3% • Core Flow > 40% (45 mlbm/hr) AND Core Flow ≤ 54.1% (60.8 mlbm/hr) • Operating recirculation pump drive flow > 25,000 gpm AND Operating recirculation pump drive flow < 44,600 gpm C8. IF reactor power AND core flow are NOT WITHIN allowable operating conditions, THEN RESTORE reactor power AND core flow to within the allowed region of the power / flow map by EITHER method: • INSERT control rods, USE RE Instructions. • ADJUST Core Flow, USE RE Instructions. C9. CLOSE RECIRC PMP A(B) DISCH VLV B33-F067A(B) for the TRIPPED Pump

GGNS 01-2024 NRC Scenario 2

		C10. WHEN > 5 minutes elapsed from recirculation pump discharge valve closure, THEN OPEN RECIRC PMP A(B) DISCH VLV B33-F067A(B) for the TRIPPED Pump. C11. ENSURE RECIRC FCV A(B) in the TRIPPED Recirculation loop is ~96% OPEN. C12. WITHIN 12 hours PERFORM the requirements of TS 3.4.1 (LCO 3.2.1, 3.2.2 AND 3.2.3), DIRECT Reactor Engineering to IMPLEMENT single-loop operating limits in accordance with the COLR. ENSURE 06-RE-1J11-V-0001 is completed within 12 hours of the pump trip. DOCUMENT the time and date of completion. Time: _____ Date: _____ C13. WITHIN 12 hours PERFORM the requirements of TS 3.4.1, 3.3.1.1-1, AND TRM TR3.3.2.1-2, DIRECT I&C to IMPLEMENT single-loop operations set points ENSURE 06-IC-1C51-O-0001 is completed DOCUMENT the time and date of completion. Time: _____ Date: _____ C14. IF Reactor Thermal Power CHANGES > 15% WITHIN 1 Hour THEN DIRECT Chemistry to perform Procedure 06-CH-1D17-V-0061, Startup, Shutdown, and 15% Power Change. Recognizes control rod insertion is required to achieve <91.3% Rod Line. Directs ATC to insert control rods. Determines Technical Specification impact: <table><tr><td colspan="2">Tech Specs should be referred to and the following LCOs identified:</td></tr><tr><td>3.4.1</td><td>Establish single loop limits (12 hours)</td></tr><tr><td>3.3.1.1</td><td>Establish single loop limits (12 hours)</td></tr><tr><td colspan="2">TRM should be referred to and the following identified:</td></tr><tr><td>3.3.2.1</td><td>Establish single loop limits (12 hours)</td></tr></table>	Tech Specs should be referred to and the following LCOs identified:		3.4.1	Establish single loop limits (12 hours)	3.3.1.1	Establish single loop limits (12 hours)	TRM should be referred to and the following identified:		3.3.2.1	Establish single loop limits (12 hours)
Tech Specs should be referred to and the following LCOs identified:												
3.4.1	Establish single loop limits (12 hours)											
3.3.1.1	Establish single loop limits (12 hours)											
TRM should be referred to and the following identified:												
3.3.2.1	Establish single loop limits (12 hours)											
	BOP	Re-adjusts RFPT B Speed Controller to match output with RFPT A. Performs the following as directed: • Reports all OPRMs are Enabled and not tripped • Reports operating loop flow is ≈ 42,500 gpm • Closes B33-F067A, RECIRC PMP A DISCH VLV. Marks time when valve is full closed.										
	ATC	Performs the following as directed: • Using Attachment 3 Power / Flow Map, performs plot • Monitors for THI Inserts control rods to achieve < 91.3% rod line										

GGNS 01-2024 NRC Scenario 2

Event 5 (continued) Event Description: Jet Pump Failure (Triggered by Lead Examiner)		
	Booth	When directed as Reactor Engineering to perform 06-RE-1B33-D-0001, Jet Pump Functional Test, acknowledge request. After 3 minutes inform control room as RE that jet pump surveillance does not meet acceptance criteria. Acknowledge any notifications made to management.

GGNS 01-2024 NRC Scenario 2

Event 6		
Event Description: Fuel Failure (Triggered by Lead Examiner)		
Booth: When directed by lead examiner, insert Trigger 4		
TIME	Position	Applicant's Actions or Behavior
	Crew	Recognizes / reports the following annunciators: • P870-3A-C2, DRWL AIRB RAD HI • P870-3A-C1, DRWL AIRB RAD HI-HI • P601-19A-E7, OG PRE-TREAT RAD HI • P601-19A-D7, OG PRE-TREAT RAD HI-HI • P601-19A-D4, MSL RAD HI
	CRS	Acknowledges reports Enters 05-1-02-II-2, Offgas Activity High ONEP Directs inserting control rods Directs reducing core flow to 70 Mlbm/hr Requests Chemistry to obtain an Offgas effluent sample AND Reactor coolant sample Notifies Radiation Protection and directs verifying Offgas Pre-Treatment Monitor reading is rising by confirming monitor readings on the backup Offgas Pre-Treatment Radiation monitor OR performing a survey of Area 1/EI. 113 Notifies Reactor Engineering to implement 17-S-02-701, Failed Fuel Action Plan May direct further power reduction by inserting control rods Directs manual Reactor scram
	ATC	Reduce core flow and Inserts control rods, as directed Attempts to insert a manual Reactor scram: • Places the Reactor Mode switch in SHUTDOWN • Arms and depresses RPS pushbuttons
	BOP	Verifies proper operation of RWCU Monitors plant parameters
	Note	Initial scram actions are scripted here. Further actions in the failure to scram are scripted in the next events.

GGNS 01-2024 NRC Scenario 2

Events 7, 8, and 9		
Event Description: RPS and ARI Fail to Insert Control Rods (Initial Setup)		
TIME	Position	Applicant's Actions or Behavior
	ATC	Recognizes / reports failure of control rods to insert on manual scram attempt
	CRS	Acknowledges reports Enters Reactor Scram, 05-1-02-I-1, ONEP Enters EP-2, RPV Control Verifies Reactor Mode Switch is in SHUTDOWN Exits EP-2 and enters EP-2A and performs the following actions: • Verifies Reactor Recirc pumps transferred to LFMG • Verifies ARI/RPT initiation (critical task due to recirc pumps tripping) • Verifies Reactor Recirc pump tripped • Verifies ADS Inhibited • Verifies HPCS Injection override • Verifies RPV Level 2 isolations Directs terminate and prevent all injection into RPV except SLC, CRD, and RCIC until RPV level is below -70" (critical task) Directs RPV level controlled -70" to -130" Directs initiation of SLC (critical task) • Acknowledges trip of SLC pumps (after one minute of injection) Directs ensuring RWCU isolation Directs installation of Attachment 7 and Attachment 8 (performed by I&C) Directs reset of ARI Directs inserting control rods using Table Q-1 methods (critical task) • May direct maximizing CRD for flow to drive rods • May direct installation of Attachments 18, 19, and 20 (performed by I&C) to allow driving rods. • May direct maximizing CRD for pressure and driving control rods • Based on failure to vent and RPS failure, should either direct venting the scram air header per Attachment 23 or de-energize scram solenoids per Attachment 21. Directs Reactor pressure controlled 800-1000 psig using EHC, SRVs, and/or RCIC Acknowledges when all control rods are inserted Exits EP-2A and enters EP-2 Directs RPV level controlled 11.4" to 53.5"
	Booth	After the mode switch is taken to SHUTDOWN, reduce the severity of the fuel failure to 2%.

GGNS 01-2024 NRC Scenario 2

	ATC	Performs immediate operator actions for ATWS per Reactor Scram, 05-1-02-I-1, ONEP • Verifies Reactor Recirc Pumps are transferred to LFMGs ○ Verifies Recirc pump breaker alignment is for slow speed operation (CB 3, 4, & 5 open, CB 1 and 2 closed) if not then depress TRANSFER TO LFMG pushbutton on P680-3C. • Initiates ARI/RPT (critical task) ○ Arms and depresses ATWS ARI/RPT MAN TRIP CHANNEL 1 AND CHANNEL 2 pushbuttons on P680-3C. • Inhibits ADS by placing ADS A and ADS B MANUAL INHIBIT key-locked switches on P601-19B to INHIBIT. • Initiates and overrides HPCS by performing the following on P601-19C: ○ While holding HPCS SYS INJECTION VLV (E22-F004) handswitch in "CLOSE" position, ARM and DEPRESS the manual system initiation push-button for HPCS. ○ AFTER indication of pump start, THEN TRIP the HPCS pump. ○ ENSURE the HPCS pump and E22-F004 valve override alarms are sealed in. • Terminates and prevents low pressure ECCS: ○ Arm and depress manual system initiation push-buttons for Division I and II ○ After indication of Division I and II pump(s) start: ▪ Trip LPCS and RHR C ▪ Override and close all Division I and II injection valves ▪ Check associated Division I, II, and III ECCS override alarms in in alarm • Maximizes Suppression Pool Cooling per SOI 04-1-01-E12-1 hard card: ○ On Panel 1H13-P601-20B(17B), CHECK SSW A(B) in service by observing > 7,900 gpm on indicator 1E12-R602A(B), RHR HX A(B) SSW FLO ○ IF SSW A(B) is NOT in service, THEN PRESS BOTH SSW Div 1(2) MAN INIT, LOGIC A(B) and LOGIC C(D) pushbuttons, and ENSURE the following lineup on Panel 1H13-P870-1B(7B): ▪ SSW A(B) Pump, RUNNING. ▪ P41-F001A(B), SSW PMP A(B) DISCH VLV, OPEN ▪ P41-F005A(B), SSW LOOP A(B) RTN TO CLG TWR A(B), OPEN ▪ P41-F014A(B), SSW INL TO RHR HX A(B), OPEN ▪ P41-F006A(B), SSW PMP A RECIRC VLV, CLOSED ○ ENSURE OPEN E12-F003A(B), RHR HX A(B) OUTL VLV ○ IF necessary, THEN RESET Ctmt Spray Logic A(B), by performing the following: ▪ DEPRESS CTMT SPR A(B) RESET pushbutton ▪ ENSURE white light above CTMT SPR A(B) RESET pushbutton extinguishes ▪ OVERRIDE E12F042A(B) RHR A(B) INJ SHUTOFF VLV CLOSED (Unless overridden by previous EP step) ▪ ENSURE E12F028A(B) CTMT SPRAY A(B) SPARGER INJ VLV Closes ○ ENSURE RHR PMP A(B) running

GGNS 01-2024 NRC Scenario 2

		○ INITIATE OPEN E12-F024A(B), RHR A(B) TEST RTN TO SUPP POOL ○ CLOSE E12-F048A(B), RHR HX A(B) BYP VLV ○ ENSURE OPEN E12-F024A(B), RHR A(B) TEST RTN TO SUPP POOL ○ WHEN flow exceeds 1154 gpm, THEN ENSURE E12-F064A(B), RHR A(B) MIN FLO TO SUPP POOL, closes ● Attempts to ensure SLC injection, recognizes/reports trip of SLC pumps
	BOP	Places SLC A and B handswitches to start. (critical task) Using 04-1-01-C41-1 hard card, verifies the following: CHECK system initiation by OBSERVING following: a. CHECK Squib Valves fired on following: 1) 1C41-F004A, SLC PUMP C001A DISCHARGE SQUIB VALVE White SQUIB VLV READY light OFF 2) 1C41-F004B, SLC PUMP C001B DISCHARGE SQUIB VALVE ● White SQUIB VLV READY light OFF 3) Annunciator SLC SYSTEM A OOSVC ON 4) Annunciator SLC SYSTEM B OOSVC ON 5) SLC A SYS STATUS SQUIB A LOSCONT/PWRLOSS light ON 6) SLC B SYS STATUS SQUIB B LOSCONT/PWRLOSS light ON b. CHECK OPEN Tank Outlet Valves: ● 1C41 F001A ● 1C41 F001B c. SLC Pump A RUNNING d. SLC Pump B RUNNING e. RWCU ISOLATES: ● G33-F004, RWCU PMP SUCT CTMT OTBD ISOL, CLOSED ● G33-F001, RWCU PMP SUCT DRWL INBD ISOL, CLOSED ● G33-F251, RWCU SPLY TO RWCU HXS, CLOSED CHECK SLC INJECTING INTO the RPV by observing following: ● SLC Pump discharge pressure greater than reactor pressure ● SLC Tank Level lowering Recognizes / reports SLC pumps trip (after one minute)
	BOP	Terminates and prevents Feedwater injection: (critical task)

GGNS 01-2024 NRC Scenario 2

		• Initiates closure of: ○ 1N21-F009A, FW HTR 6A OUTL VLV ○ 1N21-F009B, FW HTR 6B OUTL VLV • Checks Reactor Recirculation is tripped • Depresses MAN pushbutton on FW LVL MASTER CONT 1C34-LK-R600 • Depresses and holds the OUT ↓ on FW LVL MASTER CONT 1C34-LK-R600 until output is -5.00% • Ensures closed: ○ 1N21-F513, FW SU LVL CONT VLV ○ 1N21-F510, FW CU RECIRC VLV ○ 1N21-F040, FW SU BYP VLV • Initiates open: ○ 1N21-F010A, HP FW HTR STRNG A SU OUTL VLV ○ 1N21-F001, SU FCV OUTL ISOL VLV ○ 1N21-F010B, HP FW HTR STRNG B SU OUTL VLV • Ensures closed: ○ 1N21-F009A, FW HTR 6A OUTL VLV ○ 1N21-F009B, FW HTR 6B OUTL VLV • Ensures open 1N21-F014A(B), RFP A(B) DISCH VLV for OPERATING RFP • Report when RPV level is below -70" • IF REQUIRED to maintain RPV Level WITHIN the specified band, THEN THROTTLE the following valves to AUGMENT level control: ○ 1N21-F009A, FW HTR 6A OUTL VLV ○ 1N21-F009B, FW HTR 6B OUTL VLV ○ 1N21-F040, FW SU BYP VLV • ENSURE OPEN: ○ 1N21-F001, SU FCV OUTL ISOL VLV AND EITHER: ○ 1N21-F010A, HP FW HTR STRNG A SU OUTL VLV OR ○ 1N21-F010B, HP FW HTR STRNG B SU OUTL VLV • ADJUST 1C34-LK-R602, RX WTR LVL SU CONT in MAN, MAINTAIN RPV Level directed by CRS Verifies and reports RPV Level 2 isolations complete using the isolation status board as a quick reference and verifying the following alarms: • P870-3A-A4, CTMT-DRWL ISOL DIV 1 OPER annunciator sealed in • P870-3A-B3, AUX BLDG ISOL DIV 1 OPER annunciator sealed in • P870-9A-A4, CTMT-DRWL ISOL DIV 2 OPER annunciator sealed in • P870-9A-B3, AUX BLDG ISOL DIV 2 OPER annunciator sealed in Verifies Div 2 and Div 3 D/Gs are running with cooling water Restores Instrument air to containment by opening the following valves: (critical task)

GGNS 01-2024 NRC Scenario 2

		• P53-F001 (P870-3C) • P53-F007 (P870-9C)
	ATC	Inserts control rods using Table Q-1 methods, as directed: (critical task) May maximize CRD for flow and attempt to drift rods per 04-1-01-C11-1, Attachment VIII: • All controls are located on panel 1H13-P601-22B OR 22C. • ENSURE oil pump is running on the non-running CRD pump • With one CRD pump already running, THEN START standby CRD pump • PLACE CRD SYS FLO CONT C11-R600 in MANUAL • USING CRD SYS FLO CONT C11-R600, fully OPEN C11-F002A, CRD FLO CONT VLV • IF maximizing CRD for flow, THEN FULLY OPEN C11-F003, CRD DRIVE WTR PRESS CONT VLV May maximize CRD for pressure per 04-1-01-C11-1, Attachment VIII: • IF maximizing CRD for pressure, THEN FULLY CLOSE C11-F003, CRD DRIVE WTR PRESS CONT VLV, on 1H13-P601-22C to maximize drive water pressure May drive control rods: • Select control rods using ROD SELECT pushbuttons on 1H13-P680-6C • Control rods should be selected near the center of the reactor should be selected first then move outward • Depress DRIVE MODE pushbutton until GANG DRIVE button is backlit on P680-6C • Depress IN TIMER SKIP pushbutton on 1H13-P680-6C until selected control rods indicate '00'

GGNS 01-2024 NRC Scenario 2

	Booth	When asked to install EP attachments, using triggers below: • Attachment 19 – Trigger 14 • Attachment 20 – Trigger 15 • Attachment 23 – Trigger 16 • Attachment 21 – Trigger 17 (wait 5 minutes) • Manually INSTALL any other requested EP1 Attachment As each Attachment completes installation, notify CRS. When attachment 21 installed, watch the timer, when 30 seconds left, activate trigger 18 and when timer reaches 0, activate trigger 19 (deletes malfunctions and all rods insert.)

GGNS 01-2024 NRC Scenario 2

Once control rods are inserted and Reactor water level is controlled above top of active fuel, this scenario can be terminated.

Termination:

- When directed by Lead Evaluator:
 - Take the simulator to Freeze and turn horns off.
 - Stop and save the SBT report and any other recording devices.
 - Instruct the crew to not erase any markings or talk about the scenario until after follow-up questions are asked.

GGNS 01-2024 NRC Scenario 2

Give this page to the CRS

Crew Turnover:

Reactor Power:	99.8%, MOC
Core flow	106.9 mlbm/hr
PRA Risk:	GREEN
Integrated Risk:	LOW
Work Week:	Div 1
Inop Equipment:	CCW pump C is tagged out of service for maintenance.

Turnover:

Perform the following items in the order listed when turnover is complete:

- Makeup to the Suppression Pool using HPCS per 04-1-01-E22-1. Raise Suppression Pool level to 18.55 feet (to clear the suppression pool low level alarms).
- Then, lower Reactor power to 1400 MWe using Recirc flow per the provided reactivity instructions to prepare for testing on the next shift. All required notifications have been made in IOI-2.

GGNS 01-2024 NRC Scenario 3

Facility:	Grand Gulf	Scenario #:	NRC-3
Scenario Source:	New	Op. Test #:	2024
Examiners:		Applicants/	
		Operators:	
Initial Conditions:	The plant is operating at approximately 4% power during startup.		
Turnover:	IRM B is bypassed. Return IRM B to service per 04-1-01-C51-1 section 5.3. Then, continue the startup by withdrawing control rods per the provided reactivity instructions. Step 68 is complete. Start at step 69. Raise power in preparation for transitioning to Mode 1.		
Critical Tasks:	CT-1: Given a leak from the Suppression Pool and lowering Suppression Pool water level, isolate the leak, in accordance with EP-4. The leak must be isolated in time to prevent Suppression Pool water level from lowering below 14.5'. CT-2: Given the plant operating at power with an un-isolable primary system discharging into Secondary Containment, the crew will insert a manual Reactor scram, in accordance with EP-4. The scram must be inserted before two areas reach a Maximum Safe Temperature. CT-3: Given an un-isolable primary system discharging into Secondary Containment and two areas exceeding Maximum Safe Temperatures, the crew will perform an Emergency Depressurization, in accordance with EP-4. The Emergency Depressurization must be initiated within 15 minutes of when the second Maximum Safe Temperature is exceeded.		

GGNS 01-2024 NRC Scenario 3

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Return IRM to Service 04-1-01-C51-1
2	N/A	R – ATC, SRO	Withdraw Control Rods 04-1-01-C11-2
3	z021021	C – ATC, SRO TS – SRO	Control Rod Drift In ONEP 05-1-02-IV-1, Technical Specification 3.1.3
4	e12278C ct219c	C – BOP, SRO TS – SRO	Suppression Pool Leak from RHR, RHR Room Door Fails EP-3, EP-4, Technical Specification 3.5.1
5	fw274	I – ATC, SRO MC – ATC	Startup Level Control Valve Drifts Closed in Auto ONEP 05-1-02-V-7
6	e51050 e51187a e51187b ms066a	M – All	RCIC Steam Leak in Auxiliary Building, RCIC Isolation Valve Breaker Trip on Stroke. >Max Safe in 2 areas. EP-4, ONEP 05-1-02-I-1, EP-2, EP-2 ED Leg
7	e51319 e51320	C – BOP, SRO MC – BOP	RCIC Fails to Automatically Isolate EP-4
8	tc248	C – ATC, SRO MC – ATC	EHC Pumps Trip EP-2
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor, (TS)Tech Spec, (MC)Manual Control			

Initial

Conditions:

- Plant is operating at approximately 4% power during a startup

Inoperable Equipment:

- IRM B is bypassed

Planned activities:

- Return IRM B to service per 04-1-01-C51-1 section 5.3.
- Then, continue the startup by withdrawing control rods per the provided reactivity instructions. Step 68 is complete. Start at step 69. Raise power in preparation for transitioning to Mode 1.

GGNS 01-2024 NRC Scenario 3

Scenario Notes:

- Validation Time: 60 minutes

GGNS 01-2024 NRC Scenario 3

SCENARIO ACTIVITIES:

Event 1 – Return IRM to Service (Normal evolution)

After the crew assumes the shift, the BOP will return IRM B to service per 04-1-01-C51-1 section 5.3.

Event 2 – Withdraw Control Rods (Reactivity evolution)

Following the normal evolution, the ATC will withdraw control rods to continue the plant startup.

Event 3 – Control Rod Drift In (Triggered by Lead Examiner)

Control rod 56-53 will drift in. The crew will execute 05-1-02-IV-1, Control Rod/Drive Malfunctions ONEP. Per the ONEP, direction should be given to fully insert 56-53 by using the IN TIMER SKIP pushbutton. and to maintain an insert signal until the HCU can be isolated by closing C11-103 and C11-105 located inside containment. The CRS will determine the Technical Specification impact.

Tech Specs should be referred to and the following LCO identified:		
3.1.3	Condition C, One or more control rods inoperable for reasons other than Conditions A or B	
	C.1	Fully insert inoperable control rod (3 hours)
	C.2	Disarm the associated CRD (4 hours)

Event 4 – Suppression Pool Leak from RHR, RHR Room Door Fails (Triggered by Lead Examiner)

A leak will develop from RHR C piping. Additionally, the watertight door for the associated room will fail. This will cause Suppression Pool water level to lower. The crew will enter EP-4 on area water level above the Operating Limit and EP-3 on Suppression Pool level below 18.34 ft. The crew will isolate the leak by closing RHR C suction valve E12-F004C (**critical task**). RHR C jockey pump will trip due to submergence (supplies keepfill for suppression pool level instrumentation reference legs.)The crew may initiate Suppression Pool Makeup to restore Suppression Pool level, as time permits. The CRS will determine the Technical Specification impact.

Tech Specs should be referred to and the following LCOs identified:		
3.5.1	Condition A, One low pressure ECCS injection/spray subsystem inoperable	
	A.1	Restore low pressure ECCS injection/spray subsystem to operable status (7 days)
3.6.2.2	Condition A, Suppression pool water level not within limits	
	A.1	Restore suppression pool water level to within limits (2 hours)
3.3.6.4	SPMU System Instrumentation (Function3)	
	C.1	Declare SPMU subsystem INOP (1 hour)
	C.2	Restore channel to operable status (24 hours)

Event 5 – Startup Level Control Valve Drifts Closed in Auto (Triggered by Lead Examiner)

The startup level controller, C34-R602 (P680-1B), output will start lowering and Reactor level will slowly lower, resulting in receipt of alarm P680-3A-A3, RX LVL 40"/32" HI/LO. The crew will execute 05-1-02-V-7, Feedwater System Malfunctions ONEP. The ATC will take manual control of the controller and adjust to maintain Reactor level.

Event 6 – RCIC Steam Leak in Auxiliary Building, RCIC Isolation Valve Breaker Trip on Stroke (Triggered by Lead Examiner)

A steam leak will develop from RCIC into the Auxiliary Building. The leak will be unisolable due to trip of breakers to isolation valves E51-F063 and E51-F064 after manual isolation is attempted. The crew will execute EP-4 due to high area temperatures. With an unisolable primary system discharging into the Auxiliary Building and area temperatures approaching/exceeding a Max Safe value, the crew will enter EP-2 and scram the Reactor (**critical task**). Area temperatures will continue to degrade. When a 2nd area exceeds the Max Safe temperature, the crew will perform an Emergency Depressurization (**critical task**).

GGNS 01-2024 NRC Scenario 3

Event 7 – RCIC Fails to Automatically Isolate (Initial Setup)

RCIC will fail to automatically isolate on high temperature. The crew will attempt to manually isolate RCIC. The breakers for isolation valves E51-F063 and E51-F064 will trip while the valves are stroking, resulting in the inability to fully isolate the steam leak from RCIC.

Event 8 – EHC Pumps Trip (Automatic)

When Reactor pressure lowers below approximately 830 psig, the running EHC pump will trip. Additionally, the standby EHC pump will receive a trip signal. This will result in a loss of ability to use Turbine Bypass Valves to control Reactor pressure. This will limit the crew's ability to lower Reactor pressure prior to Emergency Depressurization. The crew will use alternate systems (SRVs, RCIC) to control Reactor pressure, as required.

Termination:

- When directed by Lead Evaluator, the booth operator will perform the following:
 - Take the simulator to Freeze and turn horns off.
 - Stop and save the SBT report and any other recording devices.
 - Instruct the crew to not erase any markings or talk about the scenario until after follow-up questions are asked.

GGNS 01-2024 NRC Scenario 3

Critical Task	CT-1, Given a leak from the Suppression Pool and lowering Suppression Pool water level, isolate the leak, in accordance with EP-4. The leak must be isolated in time to prevent Suppression Pool water level from lowering below 14.5'.
Event	4
Safety Significance	With no operator action, Suppression Pool water level will continue to lower, challenging its ability to perform its various functions. Additionally, flooding of the Auxiliary Building will occur, which challenges the operability of equipment in the building.
Initiating Cue	Multiple annunciators and indications will provide information that a leak is occurring from the Suppression Pool into the Auxiliary Building from RHR C. A field report will confirm the leak.
Performance Feedback	Valve position indication and Suppression Pool level trend will provide performance feedback regarding the success of the isolation.
Success Path	The crew will close the RHR C suction valve to isolate the leak.
Measurable Performance Standard	Manually closing the RHR C suction valve will provide an observable action for the evaluation team.

Critical Task	CT-2, Given the plant operating at power with an un-isolable primary system discharging into Secondary Containment, the crew will insert a manual Reactor scram, in accordance with EP-4. The scram must be inserted before two areas reach a Maximum Safe Temperature.
Event	6
Safety Significance	With no operator action, a primary system will continue to discharge into the Secondary Containment. As temperatures continue to rise, the continued operability of equipment needed to carry out EOP actions may be compromised.
Initiating Cue	Multiple annunciators will provide indications that the RCIC system has sustained a steam leak and is unisolable. Also, secondary containment temperatures will be rising while the steam leak is occurring. EP-4 provides direction to enter EP-2 and EP-2 provides direction to scram the Reactor.
Performance Feedback	Control rod position and Reactor power indications will provide performance feedback regarding the success of the scram.
Success Path	The crew will place the Reactor Mode Switch in SHUTDOWN and/or arm and depress the Reactor MANUAL SCRAM Pushbuttons.
Measurable Performance Standard	Placing the Reactor Mode Switch in SHUTDOWN and/or arming and depressing the Reactor MANUAL SCRAM Pushbuttons will provide observable actions for the evaluation team.

GGNS 01-2024 NRC Scenario 3

Critical Task	CT-3, Given an un-isolable primary system discharging into Secondary Containment and two areas exceeding Maximum Safe Temperatures, the crew will perform an Emergency Depressurization, in accordance with EP-4. The Emergency Depressurization must be initiated within 15 minutes of when the second Maximum Safe Temperature is exceeded. The basis for the 15 minute time limit is that it provides sufficient time for the crew to complete the critical task without allowing excessive degradation of plant safety. This time limit has been endorsed by Operations and Operations Training.
Event	6
Safety Significance	An un-isolable primary system discharging outside of Primary Containment resulting in two area temperatures above the maximum safe limit indicates a wide-spread problem posing a direct and immediate threat to Secondary Containment. A blowdown minimizes flow through the break, rejects heat to the suppression pool in preference to outside the containment, and places the primary system in the lowest possible energy state.
Initiating Cue	Multiple annunciators will provide indications that the RCIC system has sustained a steam leak and is unisolable. Also, secondary containment temperatures will be rising while the steam leak is occurring. EP-4 provides direction to perform an Emergency Depressurization
Performance Feedback	Reactor pressure and level indications, as well as SRV indications, will provide performance feedback regarding the success of Emergency Depressurization.
Success Path	The crew will open SRVs by arming and depressing ADS logic initiation pushbuttons or manipulating SRV control switches.
Measurable Performance Standard	Arming and depressing the ADS logic initiation pushbuttons or manipulating SRV control switches will provide observable actions for the evaluation team.

* If an operator or the crew significantly deviates from, or fails to follow procedures that affect the maintenance of basic safety functions, those actions may form the basis of a CT identified in the post-scenario review (NUREG 1021, Appendix D). An unintentional or unnecessary RPS or ESF actuation may result in the creation of a post-scenario Critical Task, if that actuation results in a significant plant degradation or significantly alters a mitigation strategy.

GGNS 01-2024 NRC Scenario 3

Simulator Setup:

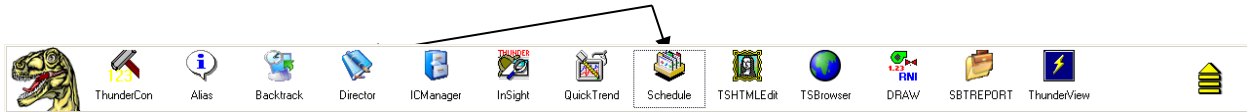
A. Initialization

1. Log off all simulator PDS and SPDS computers (PDS and SPDS must come up after the simulator load for proper operation).
2. Startup the simulator using Simulator Instructor's Job Aid section 7.3.

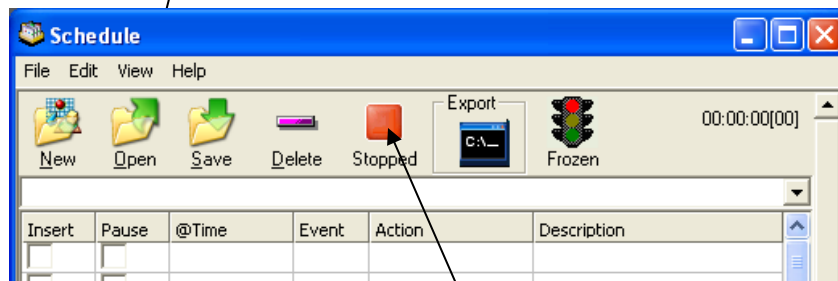
Note:

Prior to running the Schedule File, ensure no Event Files are Open. If an existing Event File is Open prior to running the Schedule File, then any associated Event Files will not automatically load.

3. Open Schedule.exe and Director.exe by clicking on the Icon in the Thunder Bar.



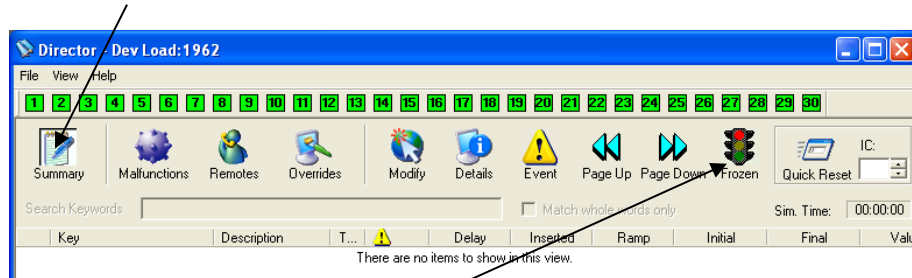
4. Set the Simulator to **IC-255** and perform switch check (Using Quick Reset in Director).
5. Click on **"Open"** in the Schedule window and Open Schedule File **"n24scen3.sch"** (in the Schedule Directory)



6. In Schedule window, click on the **"Stopped"** red block. The red block will change to a green arrow and indicate the scenario is active (**"Running"**).

GGNS 01-2024 NRC Scenario 3

- Click the Summary tab in the Director window. Verify the schedule files are loaded and opened per Section B below. (Note: Any actions in the schedule file without a specific time will not load into the director until triggered.)



- Take the simulator out of freeze.
- Log on to all simulator PDS and SPDS computers.

GGNS 01-2024 NRC Scenario 3

10. Verify or perform the following:

•	On P680-5C verify:
•	IRM bypass switch in position "CH-B"
•	All neutron monitor recorders selected to IRM

11. Run through any alarms and ensure alarms are on. **(Note: On T-Rex, to verify alarms are ON, the indicator will indicate "Alarms On").**

12. Place the simulator in Freeze.

13. Provide marked up copies of the following for crew turnover;

- 04-1-01-C51-1 section 5.3
- Startup control rod sequence marked up to current rod (step 68 complete, starting on step 69)
- Marked up copy of IOI 03-1-01-1 completed to Attachment XV Step 58 and Attachment XIV step 9 (approaching mode change to RUN)

GGNS 01-2024 NRC Scenario 3

Procedures that may be used in this scenario:

•	04-1-01-C51-1, Neutron Monitoring SOI
•	04-1-01-C11-2, Control Rod Drive Hydraulic SOI
•	03-1-01-1, Cold Shutdown to Generator Carrying Minimum Load IOI
•	05-1-02-IV-1, Control Rod/Drive Malfunctions ONEP
•	04-1-01-E30-1, Suppression Pool Makeup System SOI
•	05-1-02-V-7, Feedwater System Malfunctions ONEP
•	04-1-01-E12-1, RHR System SOI
•	05-1-02-I-1, Reactor Scram ONEP
•	05-S-01-EP-2, RPV CONTROL
	05-S-01-EP-3, PRIMARY CONTAINMENT CONTROL
•	05-S-01-EP-4, AUXILIARY BUILDING CONTROL
•	EN-OP-115, Conduct of Operations
•	02-S-01-43, Transient Mitigation Response
•	Tech Specs

GGNS 01-2024 NRC Scenario 3

<u>SCENARIO ACTIVITIES:</u> Start SBT report and any other required recording devices.		
Event 1 Event Description: Return IRM to Service (Normal Evolution)		
TIME	Position	Applicant's Actions or Behavior
	CRS	Direct BOP to return IRM B to service per 04-1-01-C51-1 section 5.3
	BOP	Returns IRM B to service per 04-1-01-C51-1 section 5.3: - UNBYPASS an IRM channel by SELECTING appropriate BYPASS SELECT joystick on 1H13-P680 - PLACE joystick in center position - ENSURE the appropriate BYPASS light is out for channel un-bypassed on P671 for IRM B

GGNS 01-2024 NRC Scenario 3

Event 2 Event Description: Withdraw Control Rods (Reactivity Evolution)		
TIME	Position	Applicant's Actions or Behavior
	CRS	Directs the ATC to continue the startup by withdrawing control rods per the startup sequence
	Notes	Startup sequence step 68 is complete. The crew will start on step 69. Each time a control rod is withdrawn, when it reaches its target position (withdraw limit) a withdraw rod block annunciator is received.
	ATC	Withdraws control rods per the startup sequence and 04-1-02-C11-2: • Selects INDIVIDUAL MODE using DRIVE MODE pushbutton on OCM • Checks INDIV DRIVE light energized • Selects rod to be moved by DEPRESSING corresponding ROD SELECT pushbutton on Rod Select panel on 1H13-P680 • Checks rod position is displayed for selected rod on RDM • Checks that selected rod is allowed to be withdrawn by RPC by OBSERVING WITHDRAW BLOCK light is OFF • MOMENTARILY DEPRESS WITHDRAW pushbutton AND OBSERVE the following: ○ IN light comes ON and then goes OFF ○ OUT light comes ON and then goes OFF ○ ROD/ROD GANG position on RDM is indicating position of rod ○ CONTINUOUSLY MONITOR nuclear instrumentation for changes in indications • WITHDRAW each rod in accordance with startup sequence
	BOP	Peer checks control rod selection. Monitors plant parameters.

GGNS 01-2024 NRC Scenario 3

Event 3														
Event Description: Control Rod Drift In (Triggered by Lead Examiner)														
Booth: When control rod 56-53 is fully withdrawn to position 48, insert Trigger 1.														
TIME	Position	Applicant's Actions or Behavior												
	ATC	Recognizes and reports the following: - Alarm P680-4A2-E4, CONT ROD DRIFT - P680-6C, ROD DRIFT status light Selects control rod 56-53 and determines control rod 56-53 is drifting IN Reports control Rod 56-53 is drifting IN Refers to ARI												
	Note	When the drifting control rod reaches position 12, RPC actuates an insert rod block (continuous insert will stop working), however the rod will continue to drift to position 00.												
	CRS	Acknowledges reports Enters 05-1-02-IV-1, Control Rod/Drive Malfunctions ONEP Directs fully inserting control rod 56-53 and maintaining CONTINUOUS INSERT signal using IN TIMER SKIP Directs NLO to isolate the associated HCU Directs ATC to release IN TIMER SKIP pushbutton and verify control rod 56-53 settles to position "00" Determines Technical Specification impact: <table border="1" style="margin-left: 40px;"> <tr> <td colspan="3">Tech Specs should be referred to and the following LCO identified:</td></tr> <tr> <td>3.1.3</td><td colspan="2">Condition C, One or more control rods inoperable for reasons other than Conditions A or B</td></tr> <tr> <td></td><td>C.1</td><td>Fully insert inoperable control rod (3 hours)</td></tr> <tr> <td></td><td>C.2</td><td>Disarm the associated CRD (4 hours)</td></tr> </table>	Tech Specs should be referred to and the following LCO identified:			3.1.3	Condition C, One or more control rods inoperable for reasons other than Conditions A or B			C.1	Fully insert inoperable control rod (3 hours)		C.2	Disarm the associated CRD (4 hours)
Tech Specs should be referred to and the following LCO identified:														
3.1.3	Condition C, One or more control rods inoperable for reasons other than Conditions A or B													
	C.1	Fully insert inoperable control rod (3 hours)												
	C.2	Disarm the associated CRD (4 hours)												
	ATC	Fully inserts control rod 56-53 using IN TIMER SKIP Maintains CONTINUOUS INSERT signal until associated HCU is isolated Releases IN TIMER SKIP pushbutton and determines control rod 56-53 has settled at position "00"												
	Booth	If directed to close associated valves C11-103xx and C11-105xx, acknowledge the command. After 2 minutes, delete drift-in malfunction and then notify the control room C11-103xx and C11-105xx are isolated.												

GGNS 01-2024 NRC Scenario 3

Event 4																										
Event Description: Suppression Pool Leak from RHR, RHR Room Door Fails (Triggered by Lead Examiner)																										
Booth: When directed by Lead Examiner, insert Trigger 2 (Initiates suppression pool leak (malf E12278C: suppression pool leak downstream of F004C) at 10 % and trips the RHR C Jockey Pump)																										
TIME	Position	Applicant's Actions or Behavior																								
	CREW	Recognizes / reports annunciators: 1H13-P680-8A1-C2, RHR RM C SMP LVL HI-HI (EP-4) 1H13-P870-4A-C3(10A-C3), SUPP POOL LVL HI/LO 1H13-P870-10A-G2, RHR C PMP RM FLOODED (EP-4) 1H13-P870-4A-A3 (10A-A3), SUPP POOL LVL LO-LO 1H13-P601-17A-C4 RHR PMP C DISCH PRESS ABNORMAL Recognizes / reports lowering Suppression Pool level Recognizes / reports high area water level in RHR room C Recognizes / reports RHR C Jockey pump tripped.																								
	CRS	Acknowledges reports Enters EP-4 due to high area water level Enters EP-3 due to low Suppression Pool level Directs verification that RHR C room sump pumps are operating Directs dispatching operator to investigate Directs isolation of RHR C (critical task) Directs makeup to the Suppression Pool with either SPMU (if Suppression Pool level is less than 17.5 feet) or HPCS. Determines Technical Specification impact: <table border="1" data-bbox="456 1333 1515 1612"> <tr> <td colspan="3">Tech Specs should be referred to and the following LCOs identified:</td></tr> <tr> <td>3.5.1</td><td>Condition A, One low pressure ECCS injection/spray subsystem inoperable</td><td></td></tr> <tr> <td></td><td>A.1</td><td>Restore low pressure ECCS injection/spray subsystem to operable status</td></tr> <tr> <td>3.6.2.2</td><td>Condition A, Suppression pool water level not within limits</td><td></td></tr> <tr> <td></td><td>A.1</td><td>Restore suppression pool water level to within limits (2 hours)</td></tr> <tr> <td>3.3.6.4</td><td>SPMU System Instrumentation (Function3)</td><td></td></tr> <tr> <td></td><td>C.1</td><td>Declare SPMU subsystem INOP (1 hour)</td></tr> <tr> <td></td><td>C.2</td><td>Restore channel to operable status (24 hours)</td></tr> </table>	Tech Specs should be referred to and the following LCOs identified:			3.5.1	Condition A, One low pressure ECCS injection/spray subsystem inoperable			A.1	Restore low pressure ECCS injection/spray subsystem to operable status	3.6.2.2	Condition A, Suppression pool water level not within limits			A.1	Restore suppression pool water level to within limits (2 hours)	3.3.6.4	SPMU System Instrumentation (Function3)			C.1	Declare SPMU subsystem INOP (1 hour)		C.2	Restore channel to operable status (24 hours)
Tech Specs should be referred to and the following LCOs identified:																										
3.5.1	Condition A, One low pressure ECCS injection/spray subsystem inoperable																									
	A.1	Restore low pressure ECCS injection/spray subsystem to operable status																								
3.6.2.2	Condition A, Suppression pool water level not within limits																									
	A.1	Restore suppression pool water level to within limits (2 hours)																								
3.3.6.4	SPMU System Instrumentation (Function3)																									
	C.1	Declare SPMU subsystem INOP (1 hour)																								
	C.2	Restore channel to operable status (24 hours)																								
	Booth	If dispatched to investigate RHR C room, wait 2 minutes, then report that there is water leaking from the RHR C room watertight door and you can hear running water in the room. If dispatched to investigate RHR C room from the 119-foot elevation through the grates, report that leak is from downstream of E12-F004C, SUPP POOL SUCTION VLV.																								

GGNS 01-2024 NRC Scenario 3

	BOP	Verifies RHR C Pump Room Sump Pumps operating using PDS computer points. Monitors and reports Suppression Pool level and trend on 1E30-LR-R600A(B) on 1H13-P870-4B(10B) (PDS trend may be used also) Dispatches operator to investigate. Closes E12-F004C, SUPP POOL SUCTION VLV If directed makeup to the Suppression Pool using HPCS per 04-1-01-E22-1 section 6.4: • PLACE HPCS MOV TEST handswitch on 1H13-P601-16B to TEST position • VERIFY that "HPCS SYS OOSVC" annunciator (1H13-P601-16A-H5) Alarms • VERIFY that status light HPCS MOV IN TEST STATUS (1H13-P601-16B) comes On • IF HPCS pump is NOT running, THEN MAKE UP from CST USING gravity flow as follows: ○ THROTTLE OPEN F023, HPCS TEST RTN TO SUPP POOL, UNTIL desired rate of level increase is attained ○ CHECK CST level is falling AND suppression pool level is rising ○ CLOSE F023 WHEN desired suppression pool level is attained if directed, manually initiate Suppression Pool Makeup per 04-1-01-E30-1, Attachment V hard card: • Place the SPMU MODE SEL handswitch to AUTO • Place the SPMU DUMP TEST switch in TEST • Depress both SPMU MAN INIT pushbuttons • Verify suppression pool level is rising
	Booth	1 minute after E12-F004C, SUPP POOL SUCTION VLV is closed, report to the control room the leak had stopped. If dispatched to verify sump pumps running, wait 2 minutes, then report sump pumps are running.

GGNS 01-2024 NRC Scenario 3

Event 5		
Event Description: Startup Level Control Valve Drifts Closed in Auto (Triggered by Lead Examiner)		
Booth: When directed by lead examiner, insert Trigger 3		
Time	Position	Applicant's Actions or Behavior
	ATC	Recognizes / reports Reactor water level lowering Recognizes / reports annunciator P680-3A-A3, RX LVL 40"/32" HI/LO Recognizes / reports Startup Level Control valve drifting closed
	CRS	Enters 05-1-02-V-7, Feedwater System Malfunctions ONEP Directs ATC to control Reactor water level using 1C34-R602, RX WTR LVL SU CONT, in manual
	ATC	Places 1C34-R602, RX WTR LVL SU CONT, in manual (immediate operator action in ONEP 05-1-02-V-7) Controls Reactor water level using 1C34-R602
	Booth	If dispatched to investigate the startup level controller, acknowledge direction (no action will be performed).

GGNS 01-2024 NRC Scenario 3

Events 6, 7, and 8		
Event Description: RCIC Steam Leak in Auxiliary Building, RCIC Isolation Valve Breaker Trip on Stroke (Triggered by Lead Examiner); RCIC Fails to Automatically Isolate (Automatic); EHC Pumps Trip (Automatic)		
Booth: When directed by Lead Examiner, insert Trigger 4 (insert RCIC steam leak at 35%)		
TIME	Position	Applicant's Actions or Behavior
	Crew	Recognizes / reports annunciators: • P601-21A-H2, RCIC PIPE/EQUIP AMBIENT TEMP HI • P601-21A-H3, RCIC EQUIP AREA DT HI • P601-21A-G3, RCIC EQUIP AREA TEMP HI/INOP (EP-4 entry alarm) Recognizes / reports steam leak from RCIC Recognizes / reports failure of RCIC to automatically isolate Recognizes / reports annunciators for 2nd area temp: • P601-18A-A3 MSL PIPE TNL CH-B TEMP HI/INOP • P601-18A-A4 MSL PIPE TNL CH-C TEMP HI/INOP • P601-19A-A3 MSL PIPE TNL CH-A TEMP HI/INOP • P601-19A-A4 MSL PIPE TNL CH-D TEMP HI/INOP
	Note	High temperature in the main steam tunnel will cause the MSIVs to automatically close.

GGNS 01-2024 NRC Scenario 3

	CRS	Acknowledges reports Enters EP-4 on high area temperature Directs evacuation of affected area Directs isolation of RCIC Directs verifying SBGT start Directs starting RCIC room fan coil unit Acknowledges failure of RCIC to isolate Acknowledges an area temperature approaching/exceeding the Max Safe value Enters EP-2 from EP-4 Directs manual Reactor scram (critical task) Enters Reactor Scram ONEP, 05-1-02-I-1 Directs all personnel to evacuate Containment due to reactor scram Directs BOP to align feedwater on startup level control and maintain RPV level within a band of 11.4" to + 53.5" NR Directs ATC to maintain RPV pressure within a band of 800 to 1060 psig using bypass valves May direct cooldown using EHC • Acknowledges trip of EHC pumps and unavailability of TBVs Acknowledges two area temperatures exceeding the Max Safe value Enters Emergency Depressurization leg of EP-2 Directs opening 8 ADS/SRVs (critical task) May direct placing RHR in suppression pool cooling, as time permits

GGNS 01-2024 NRC Scenario 3

Events 6, 7, and 8 (continued) Event Description: RCIC Steam Leak in Auxiliary Building, RCIC Isolation Valve Breaker Trip on Stroke (Triggered by Lead Examiner); RCIC Fails to Automatically Isolate (Automatic); EHC Pumps Trip (Automatic) RCIC Room Cooler Fails to Start		
TIME	Position	Applicant's Actions or Behavior
	ATC	Performs manual Reactor scram per 05-1-02-I-1, Reactor Scram ONEP: - Places Reactor Mode Switch in SHUTDOWN - Observes all control rods fully inserted - Observes Reactor power lowering - Performs ACRO Scram Hard Card: - Ensures Main Turbine and Generator trip - Checks CRD discharge volume vents and drain indicate closed - Inserts IRMs - Inserts SRMs - Switches to IRM mode on recorders and selects IRM scales May initiate a cooldown using EHC - Recognizes / reports trip of EHC pumps and unavailability of TBVs
	BOP	May attempt to isolate RCIC by depressing RCIC MAN ISOL pushbutton (disabled by same simulator programming that defeats automatic isolation) Attempts to isolate RCIC by closing E51-F063 and E51-F064 Recognizes / reports breakers for E51-F063 and E51-F064 trip and valves fail to isolate RCIC Verifies SBGT start Recognizes RCIC room fan coil unit fails to start. Controls RPV level within a band of 11.4" to + 53.5" NR using startup level control
	Note	Regardless if the RCIC isolation valves are closed manually or close automatically, the breakers for E51-F063 and E51-F064 will trip when the valves begin to stroke preventing isolation of RCIC.
	Booth	After the reactor is scrammed and initial actions taken, activate trigger 12. (Auxiliary building steam tunnel leak at severity of 2 % to simulate distribution of steam from the RCIC steam leak in the Auxiliary Building.)

GGNS 01-2024 NRC Scenario 3

Events 6, 7, and 8 (continued)		
Event Description: RCIC Steam Leak in Auxiliary Building, RCIC Isolation Valve Breaker Trip on Stroke (Triggered by Lead Examiner); RCIC Fails to Automatically Isolate (Automatic); EHC Pumps Trip (Automatic)		
TIME	Position	Applicant's Actions or Behavior
	ATC / BOP	Opens 8 ADS/SRVs (critical task) If directed to place RHR in suppression pool cooling, performs the following per SOI 04-1-01-E12-1, Attachment VI hard card: (1) On Panel 1H13-P601-20B(17B), CHECK SSW A(B) in service by observing > 7,900 gpm on indicator E12-R602A(B), SSW HX A(B) SSW FLO. (2) ENSURE the following lineup on Panel 1H13-P870-1B(7B): (a) SSW A(B) Pump, RUNNING. (b) P41-F001A(B), SSW PMP A(B) DISCH VLV, OPEN. (c) P41-F005A(B), SSW LOOP A(B) RTN TO CLG TWR A(B), OPEN. (d) P41-F014A(B), SSW INL TO RHR HX A(B), OPEN. (e) P41-F006A(B), SSW PMP A(B) RECIRC VLV, CLOSED. (3) ENSURE OPEN E12-F003A(B), RHR HX A(B) OUTL VLV. (5) ENSURE RHR PMP A(B) running. (6) BEGIN OPENING E12-F024A(B), RHR A(B) TEST RTN TO SUPP POOL. (7) CLOSE E12-F048A(B), RHR HX A(B) BYP VLV. (8) ENSURE OPEN E12-F024A(B), RHR A(B) TEST RTN TO SUPP POOL. (9) WHEN flow exceeds 1154 gpm, THEN ENSURE E12-F064A(B), RHR A(B) MIN FLO TO SUPP POOL, closes. (10) WHEN time permits, THEN REFER to Section 5.2 of this procedure.
	Booth	If dispatched to investigate steam leak prior to evacuation, wait 2 minutes, then report a lot of steam in the Aux Building that appears to be coming from RCIC. If dispatched after evacuation, report that prior to evacuation, saw a lot of steam in the Aux Building that appeared to be coming from RCIC.

GGNS 01-2024 NRC Scenario 3

Once the Reactor has been Emergency Depressurized, and Reactor water level is controlled in assigned band, this scenario can be terminated.

Termination:

- When directed by Lead Evaluator:
 - Take the simulator to Freeze and turn horns off.
 - Stop and save the SBT report and any other recording devices.
 - Instruct the crew to not erase any markings or talk about the scenario until after follow-up questions are asked.

GGNS 01-2024 NRC Scenario 3

Give this page to the CRS

Crew Turnover:

Reactor Power:	4%, MOC, startup in progress
Core flow	31 mlbm/hr
PRA Risk:	GREEN
Integrated Risk:	NORMAL
Work Week:	Div 1
Inop Equipment:	IRM B is bypassed

Turnover:

IOI 03-1-01-1 completed to step for raising power to clear APRM downscale alarms in preparation for mode change to RUN.

Plant equipment is lined up and operating in accordance with IOI 03-1-01-1 for current reactor power level:

- Reactor water level is being maintained with the startup level control valve in automatic.
- Reactor is at rated reactor pressure being maintained by turbine bypass valves.

Perform the following items in the order listed when turnover is complete:

- Return IRM B to service per 04-1-01-C51-1 section 5.3. It is desired for this to be performed by the BOP operator.
- Then, continue the startup by withdrawing control rods per the provided reactivity instructions. Step 68 is complete. Start at step 69. Raise power in preparation for transitioning to Mode 1.

Form 3.4-1 Events and Evolutions Checklist

Facility: Grand Gulf				Date of Exam: Jan 2024				Operating Test No.: 2024							
A P P L I C A N T	E V E N T T Y P E	Scenarios													
		1			3						T O T A L	M I N I M U M (*)			
		CREW POSITION			CREW POSITION			CREW POSITION							
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P					
												R	I	U	
U2	RX					2						1	1	1	0
	NOR	1										1	1	1	1
	I/C	3,4,5,7,8,9				3,5,8						9	4	4	2
	MAJ	6				6						2	2	2	1
	Man. Ctrl					5,8						2	1	1	0
	TS	3,4										2	0	2	2
U1	RX											0	1	1	0
	NOR	1										1	1	1	1
	I/C	3,4,5,7,8,9										6	4	4	2
	MAJ	6										1	2	2	1
	Man Ctrl											0	1	1	0
	TS	3,4										2	0	2	2
I3	RX					2						1	1	1	0
	NOR	1										1	1	1	1
	I/C	3,4,5,7,8,9				3,5,8						9	4	4	2
	MAJ	6				6						2	2	2	1
	Man Ctrl					5,8						2	1	1	0
	TS	3,4										2	0	2	2
I2	RX		2									1	1	1	0
	NOR				1							1	1	1	1
	I/C		3,5,7,8,9		3,4,5,7,8							10	4	4	2
	MAJ		6		6							2	2	2	1
	Man Ctrl		3,5,7,9									4	1	1	0
	TS				3,4							2	0	2	2

A P P L I C A N T	E V E N T T Y P E	Scenarios												
		1			3						T O T A L	M I N I M U M (*)		
		CREW POSITION			CREW POSITION			CREW POSITION						
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P		R	I	U
R1	RX		2								1	1	1	0
	NOR						1				1	1	1	1
	I/C		3,5,7,8 ,9				4,7				7	4	4	2
	MAJ		6				6				2	2	2	1
	Man Ctrl		3,5,7,9				7				5	1	1	0
	TS										0	0	2	2

Form 3.4-1 Instructions for the Events and Evolutions Checklist

1. Mark the applicant license level for each simulator operating test number.
2. For the set of scenario columns, fill in the associated event number from Form 3.3-1, "Scenario Outline," to show the specific event types being used for the applicant while in the assigned crew position for that scenario.

* Minimums are subject to the instructions in Section C.2, "License Level Criteria."

KEY: RX = Reactivity Manipulation; NOR = Normal Evolution; I/C = Instrument/Component Failure; MAJ = Major Transient; Man. Ctrl = Manual Control of Automatic Function; TS = Technical Specification Evaluation; RO = Reactor Operator; SRO-I or I = Instant Senior Reactor Operator; SRO-U or U = Upgrade Senior Reactor Operator; SRO = Senior Reactor Operator; ATC = At the Controls; and BOP = Balance of Plan