NRC SRO ADMIN JPM CO1
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Determine Core Thermal Power Revision: NRC 2009

Task Number: Determine core thermal power using N2-REP-11, Attachment 3

Approvals:

_____ / _____
General Supervisor Date
Operations Training (Designee)

NA Exam Security _____ / _____
General Supervisor Date
Operations (Designee)

NA Exam Security _____ / _____
Configuration Control Date

Performer:_____(STA)

Trainer/Evaluator:_____

Evaluation Method: __X__Perform _____Simulate

Evaluation Location: _____Plant _____Simulator __X__ Classroom

Expected Completion Time: 15 Min. Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluators Signature:_____ Date:_____

Recommended Start Location: (Completion time based on the start location)
Any appropriate location with the required Reference Material.

Simulator Set-up (if required):
None

Directions to the Instructor/Evaluator:
Prior to performance of this JPM, obtain SM / CRS general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRS permission.

Directions to Operators:
Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SSS, CSO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

With the exception of accessing panels, NO plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self verification shall be demonstrated.
3. During Training JPM:
   - Self verification shall be demonstrated.
   - (Additional/Concurrent/No other) verification shall be demonstrated.

References:
1. N2-REP-11, Independent Methods of Determining Core Thermal Power
2. NUREG K/A General Knowledges and Abilities 2.1.19(3.0) 2.1.20(4.3) 2.1.25(2.8)

Tools and Equipment:
1. Calculator
2. OD-3, with % Core Thermal Power = 99.54%

Task Standard:

Core thermal power correctly calculated in accordance with N2-REP-11, Attachment 3. Candidate determines that the calculated power is not within 2% limit specified in the procedure and notifies SM and RE.

Initial Conditions:

1. The plant has been operating at >90% power for more than 8 hours.
2. MSR reheat steam is NOT optimized.
3. Turbine bypass valves are closed.
4. The Process Computer is available.
5. SM permission has been granted to perform this procedure.

Initiating Cues:

"(Operator's name), determine core thermal power using turbine first stage pressure in accordance with N2-REP-11. Any steps requiring an Independent Verification will be completed by another operator at the completion of the procedure. Discuss any discrepancies found with examiner when the task is complete.

Performance Steps	Standard	Grade
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary.*	Proper communications used for repeat back (GAP-OPS-O1/Operations Manual)	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure. Evaluator to provide Candidate with 3 JPM attachments/handouts and copy of N2-REP-11.	N2-REP-11 obtained. - Precautions & Limitations reviewed. - Attachment 3 referenced.	Sat/Unsat

3. Complete Preliminaries Section of REP-11, Att 3 for the following: ▪ Verifying all turbine bypass valves are fully closed. ▪ Verifying MSR reheat steam is NOT optimized. ▪ Verify reactor is operating in a steady state condition with core power level constant for the current control rod pattern and core flow.	Step completed using JPM Initial Conditions. Step completed using JPM Initial Conditions. Step completed using JPM Initial Conditions.	Sat/Unsat Sat/Unsat Sat/Unsat
4. Candidate may obtain SM permission; and/or notify the CSO of procedure performance.	Proper communications used (GAPS-OPS-01/ Operations Manual).	Sat/Unsat
5. Record data on N2-REP-11, Attachment 3. Evaluator to provide Candidate a copy of JPM Attachment 1.	Data correctly entered on Attachment 3.	Sat/Unsat
7. Obtain Plant Process Computer Program OD-3, Option 2 printout. Evaluator to provide Candidate a copy of JPM Attachment 2.	Obtains value from JPM Attachment 1.	Sat/Unsat
8. Calculate core thermal power.	Core thermal power calculations completed as follows: ▪ % Core Thermal Power based on computer points = 97.694 ▪ % Core Thermal Power from OD-3 printout = 99.99	**Pass/Fail**
9. Indicate if core thermal power values agree within ± 2%.	Determines core thermal power values do **NOT** agree within ± 2% (100 [99.99] – 97.69 = 2.3).	**Pass/Fail**
10. Immediately notifies SM and Reactor Engineering Supervisor that Core	SM and Reactor Engineering Supervisor notified that Core Thermal Power	**Pass/Fail**

Thermal Power determined using turbine first stage pressure does **NOT** agree within 2%.	determined using turbine first stage pressure does **NOT** agree within 2%.

Terminating Cue: **Core thermal power calculated using N2-REP-11, Attachment 3.**

RECORD STOP TIME _____

Initial Conditions:

1. The plant has been operating at >90% power for more than 8 hours.
2. MSR reheat steam is NOT optimized.
3. Turbine bypass valves are closed.
4. The Process Computer is available.
5. SM permission has been granted to perform this procedure.

Initiating Cues:

"(Operator's name), determine core thermal power using turbine first stage pressure in accordance with N2-REP-11. Any steps requiring an Independent Verification will be completed by another operator at the completion of the procedure. Discuss any discrepancies found with examiner when the task is complete."

N2-REP-11 Data Sheet

Computer Point	Value
Turbine First Stage Pressure (MSSPA07)	690 psia
FW A Correction Factor (FWSFE102)	0.9900
FW B Correction Factor (FWSFE103)	0.9900

JPM Attachment 2 SRO JPM CO1

OD-3 Core Thermal Power and APRM Calibration TODAY

Nine Mile Point 2

GMWE	CMWT	WT	WTSUB	WD	WT FLAG	IREC	ROD LIN
1182.52	3466.66	97.09	97.86	30.54	2.00	0	107.53

PR	RWL	DPCM	WFW	HFW	WD	DHS	CAEQ	CAQA
1034.6	185.54	15.44	14.93	400.8	525.4	22.80	.12	.15

	1-A	2-B	3-C	4-D
RAP	100.01	100.04	99.99	100.03
AGAP	1.0	1.0	1.0	1.0

NRC SRO ADMIN JPM CO2
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Determine the required actions for a mispositioned control rod, who must be notified, and the reactivity management severity level
Revision: NRC 2009

Approvals:

_____	NA EXAMINATION SECURITY
General Supervisor Operations Training (Designee) Date	General Supervisor Operations (Designee) Date

NA EXAMINATION SECURITY
Configuration Control Date

Performer:_____(SRO)

Trainer/Evaluator:_____

Evaluation Method: **PERFORM**

Evaluation Location: **SIMULATOR OR OTHER DESIGNATED AREA**

Expected Completion Time: 20 minutes Time Critical Task: NO Alternate Path Task: NO

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

Recommended Start Location: (Completion time based on the start location)
Simulator or other designated area.

Simulator Set-up:
N/A

Directions to the Instructor/Evaluator:
To be performed as an administrative JPM.

Directions to Operators:
Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:
1. Critical steps are identified as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:

1. CNG-OP-3.01-1000, REACTIVITY MANAGEMENT
2. N2-OP-96, REACTOR MANUAL CONTROL AND ROD POSITION INDICATION SYSTEM
3. K/A 2.1.7 (4.4), Ability to evaluate plant performance and make operational judgements based on operating characteristics, reactor behavior, and instrument interpretation.

Tools and Equipment:
1. None

Task Standard: Enter N2-OP-96, REACTOR MANUAL CONTROL AND ROD POSITION INDICATION SYSTEM, and immediately return the Control Rod to position 42. Notify the Shift Manager, On Call Reactor Engineer and the General Supervisor of Operations. Initiate a CR and determine a Severity Level 3 Reactivity Event occurred.

Initial Conditions:

1. The plant has completed a rod pattern exchange at 90% power at 06:00 this morning.
2. Reactor power was then raised to 93%.
3. At 8:30, the Reactor Engineer determines that a control rod 02-43 that was supposed to be at position 42 was actually at position 44.
4. The Reactor Engineer has determined no control rod tips were crossed.
5. SM has been notified.
6. No predictor case has been run with the Control Rod(s) mispositioned.
7. Ask the operator for any questions.

Initiating cue:

"(Operator's name), determine the required actions, who must be notified, and the reactivity management severity level of this event. Assume it is now 8:30 am.

Performance Steps	*Standard*	*Grade*
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary*	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
RECORD START TIME _____		
2. •Obtain a copy of N2-OP-96, REACTOR MANUAL CONTROL AND ROD POSITION INDICATION SYSTEM and review/utilize section H.1.0.	❑ N2-OP-96, obtained. Section H.1.0 referenced for required actions for a mispositioned control rod.	Sat/Unsat
3. • Determines that rod should **NOT** be immediately repositioned because it was discovered AFTER performing Control Rod movement,	❑ Places N/A in step 1.1.3.a and does NOT reposition the Control Rod to position 42	**Pass/Fail**
4. • Determines rod is **NOT** mispositioned by more than 3 notches AND that control rod tips were **NOT** crossed.	❑ Places N/A in step 1.1.3.b	Sat/Unsat
5. • Determines reactor power must be lowered 40 MWe.	❑ Directs immediately lowering reactor power 40 MWe	**Pass/Fail**
6. Reviews procedure step 1.1.5 and determines the step is N/A	Marks procedure step 1.1.5 N/A	Sat/Unsat

Performance Steps	Standard	Grade
7. Contacts the following: Reactor Engineer General Supervisor Operations Unit 2	❑ Contacts: Reactor Engineer General Supervisor Operations Unit 2	**Pass/Fail**
8. • Determines the control rod was mispositioned for two and one-half hours.	❑ Determines the control rod was mispositioned for two and one-half hours.	Sat/Unsat
9. • Provides the Reactor Engineer with the following: Location of Control Rod Position of the Control Rod Duration rod was mispositioned. ***CUE/NOTE: The candidate should determine that the duration is at least 2 ½ hours (6 am to 8:30 am). Additional time may be added to this for the time taken to get to this procedure step.***	❑ Provides the Reactor Engineer with the following: 02-43 44 SEE NOTE at left for duration	**Pass/Fail**
10. • Initiate a CR	❑ Ensures a CR is initiated	Sat/Unsat
11. •Determine the Reactivity Event Severity per CNG-OP-3.01-1000, REACTIVITY MANAGEMENT.	❑ Classifies event severity as **LEVEL 3**: Mispositioned Control Rod During Reactor Operation.	Sat/Unsat

End of JPM

TERMINATING CUE: The Control Rod remains in position 44. Notify the Shift Manager, On Call Reactor Engineer and the General Supervisor of Operations. Initiate a CR and determine a Severity Level 3 Reactivity Event occurred.

RECORD STOP TIME_____

Initial Conditions:

1. The plant has completed a rod pattern exchange at 90% power at 06:00 this morning.
2. Reactor power was then raised to 93%.
3. At 8:30, the Reactor Engineer determines that a control rod 02-43 that was supposed to be at position 42 was actually at position 44.
4. The Reactor Engineer has determined no control rod tips were crossed.
5. SM has been notified.
6. No predictor case has been run with the Control Rod(s) mispositioned.
7. Ask the operator for any questions.

Initiating cue:

"(Operator's name), determine the required actions, who must be notified, and the reactivity management severity level of this event. Assume it is now 8:30 am.

NRC SRO ADMIN JPM EC
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Review a Two Loop Jet Pump Operability Verification and take appropriate actions IAW N2 – OSP-LOG-D001 and Technical Specifications. Revision: NRC 2009

Task Number:

Approvals:

_____
General Supervisor Date
Operations Training (Designee)

N/A – Exam Security
General Supervisor Date
Operations (Designee)

N/A – Exam Security
Configuration Control Date

Performer:_____ (SRO)

Trainer/Evaluator:_____

Evaluation Method: Perform

Evaluation Location: Classroom

Expected Completion Time: 20 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

Recommended Start Location: Classroom

Simulator Set-up: N/A

Directions to the Instructor/Evaluator: None

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CSO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**.
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:

1. N2-OSP-LOG-D001
2. K/A 2.2.12 (3.7) Knowledge of surveillance procedures

Tools Forms and Equipment:

1. Completed N2-OSP-LOG-D001, Attachment 10, Section 4.0. for "A" Recirculation Loop Jet Pumps
2. Calculator

Task Standard:

Attachment 10, TWO LOOP JET PUMP OPERABILITY VERIFICATION, completed. Identifying Jet Pump 5 as operating outside its limits. Technical Specifications are identified, CR written and the condition is logged.

Initial Conditions:

1. You are the Control Room supervisor.
2. N2-OSP-LOG-D001, DAILY CHECKS LOG, ATTACHMENT 10: TWO LOOP JET PUMP OPERABILITY VERIFICATION has been completed.
3. Ask the operator for any questions

Initiating cue:

"(Operator's name), review ATTACHMENT 10: TWO LOOP JET PUMP OPERABILITY VERIFICATION, identify any issues and take the appropriate actions."

Performance Steps	*Standard*	*Grade*
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary*	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
RECORD START TIME _____		
2. Reviews Section 2.0, Comparison of Indicated Jet Pump Loop Flows to Predicted Jet Pump Loop Flows by Recirc Flow Control Valve Positions.	Reviews and verifies the comparison is satisfactory as recorded in Step 2.4	**Pass/Fail**
3. Reviews Section 3.0, Comparison of Indicated Jet Pump Loop Flows to Predicted Jet Pump Loop Flows by Recirc Loop Drive Flow	Reviews and verifies the comparison is satisfactory as recorded in Step 3.4	**Pass/Fail**
4. Reviews Section 4.0 Comparison of Individual Jet Pumps ΔP to Average Jet Pump Loop ΔP	Reviews and verifies the comparison is UN-satisfactory as recorded in Step 4.4	**Pass/Fail**
5. Determines (confirms) the lower ΔP ratio on Jet Pump 5 does not meet the surveillance requirements	Recognizes that Jet Pump #5 is below its limit.	Sat/Unsat
6. Reviews T.S. Surveillance 3.4.3.1 and determines that only one of the three requirements is NOT met.	Determines that with two surveillance criteria met, plant operation may continue.	**Pass/Fail**
NOTE: The jet pump has met the surveillance requirements. However, the candidate may also talk about an engineering determination being made in regard to operability of that jet pump. If engineering (or site management) deems the pump inoperable, the TS LCO		

Performance Steps	*Standard*	*Grade*
would be entered. The determination for continued operation is made based only the jet pump meeting the surveillance requirements for at least 2 of 3 criteria.		
7. Logged in the Shift Supervisors Log as a significant event.	Logged in Shift Supervisors log	Sat/Unsat
8. Ensures a CR is initiated. **CUE:** If directed and/or when the candidate states they will generate a CR respond that another operator will complete the CR	CR generated	Sat/Unsat

TERMINATING CUE:
Attachment 10, TWO LOOP JET PUMP OPERABILITY VERIFICATION, completed. Identifying Jet Pump 5 as operating outside its limits. Technical Specifications are identified, CR written and the condition is logged.

RECORD STOP TIME_____

Initial Conditions:

1. You are the Control Room Supervisor.
2. N2-OSP-LOG-D001, DAILY CHECKS LOG, ATTACHMENT 10: TWO LOOP JET PUMP OPERABILITY VERIFICATION has been completed.
3. Ask the operator for any questions

Initiating cue:

"(Operator's name), review ATTACHMENT 10: TWO LOOP JET PUMP OPERABILITY VERIFICATION, identify any issues and take the appropriate actions."

NRC SRO ADMIN JPM RC
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Generate and Approve an Emergency Exposure Authorization Revision: NRC 2009

Task Number: 3439100303

Approvals:

_____	NA EXAMINATION SECURITY
General Supervisor Operations Training (Designee) Date	General Supervisor Operations (Designee) Date

NA EXAMINATION SECURITY
Configuration Control Date

Performer:_____(SRO)

Trainer/Evaluator:_____

Evaluation Method: **PERFORM**

Evaluation Location: **SIMULATOR OR OTHER DESIGNATED AREA**

Expected Completion Time: 20 minutes Time Critical Task: NO Alternate Path Task: NO

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

Recommended Start Location: Any appropriate location with the required Reference Material.

Simulator Set-up:
None
Directions to the Instructor/Evaluator:
To be performed as an administrative JPM. A calculator should be provided.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the Radiation Protection, the SM, CRO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During evaluated JPM:
   - Self-verification shall be demonstrated.
3. During training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:

1. EPIP-EPP-15
2. K/A 2.3.4 (3.1), Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.

Tools and Equipment:
1. Calculator
2. Copy of EPIP-EPP-15 for the candidate

Task Standard:

Generate and approve an Emergency Exposure Authorization Form and estimate exposure.

Initial Conditions:

1. You have assumed the responsibilities of the Shift Manager/Emergency Director.
2. An SAE has been declared
3. Entry to the reactor building is required to manually close ICS*MOV121
4. Time to complete the task for an experienced operator will be approximately 12 minutes.
5. Time to complete the task for a new operator will be approximately 15 minutes
6. A RCIC steam leak into the Reactor Building can not be isolated without manually shutting ICS*MOV121.
7. Closing ICS*MOV121 will prevent serious damage to the facility.
8. Radiation levels at the valve are as high as 25 R/hr.
9. Four (4) individuals are available to perform the task.
   - Worker A is a volunteer who is an experienced Licensed Reactor Operator that has previously received a planned special exposure at another facility (TLD #1, Employee # - 00001, SSN: 111-11-1111).
   - Worker B is a volunteer who is an experienced Licensed Reactor Operator and is a declared pregnant worker and has received a dose of 15 mR this year (TLD #2, Employee # - 00002, SSN: 222-22-2222).
   - Worker C is a volunteer who is an experienced Licensed Reactor Operator that has received a dose of 1200 mR this year (TLD #3, Employee # 00003, SSN: 333-33-3333).
   - Worker D is a volunteer who is a new Licensed Reactor Operator that has received a dose of 250 mR this year (TLD #4, Employee # 00004, SSN: 444-44-4444).
10. Personnel will be provided dosimetry and debriefed at a later time.
11. Ask the operator for any questions.

Initiating Cue:

"(Operator's name), choose an individual to close ICS*MOV121, estimate the expected radiation exposure and document your authorization for an Emergency Exposure. State the reasons why that worker was chosen and why the others were not chosen."

Performance Steps	*Standard*	*Grade*
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary*	Proper communications used for repeat back (GAP-OPS-O1).	Sat/Unsat
RECORD START TIME ____		
2. •Obtain a copy of the reference procedure and review/utilize the correct section.	EPIP-EPP-15 is obtained and Attachments 1 and 1-1 are referenced.	Sat/Unsat

Performance Steps	Standard	Grade
3. •Determines the expected exposure for the task	For an experienced worker - Calculates that a 12 minute exposure in a 25 R/hr field will cause a dose of 5 R. For a new worker - Calculates that a 15 minute exposure in a 25 R/hr field will cause a dose of 6.25 R. • Since the action is required to limit dose to the public, 25 R is the limit. • 6.25 R is well within the 25 R limit. • The experienced worker will receive the lowest dose.	**Pass/Fail**
4. •Selects the best worker to perform the task.	Determines the best worker for the task: • Worker A has previously received a planned special exposure and cannot be used. • Worker B is a declared pregnant worker and cannot be used. • Worker C is an experienced Licensed Reactor Operator and will receive the lowest dose. • Worker D is a new Licensed Reactor Operator	**Pass/Fail**
5. •Determines worker's exposure limit. **EXAMINER NOTE:** The authorized Exposure limit may be 25 R or less based on whether the candidate limits the volunteer's exposure to the anticipated stay time (12 min) or a recommendation from RP.	The absolute exposure limit for the job is 25 R. If the recommendation of RP is used the limit is 10 R (60/24 x 25). If the limit is based on a stay time of 12 minutes the exposure limit is 5 R. Worker C is assigned to the task. Choosing this individual will result in the lowest total dose for the job if completed in 12 minutes (5R). This will result in an accumulated individual dose of 6.2R (Station ALARA total dose goal consideration) Worker D is assigned to the task. Choosing this individual will result in a total dose of 6.25 if completed in 15 minutes and an accumulated individual dose of 6.5R (Higher Individual dose goal consideration).	Sat/Unsat

Performance Steps	Standard	Grade
CUE: The Candidate may ask for an RWP to be generated.	***CUE: Role play as RP and state that an RWP has been generated.***	
6. •Generates an Emergency Exposure Authorization form.	• Candidate obtains a copy of EPIP-EPP-15 Attachment 1-1. • Candidate completes Section A.	**Pass/Fail**

End of JPM

TERMINATING CUE: When the Candidate completes the Emergency Exposure Authorization Form.

RECORD STOP TIME_____

OK TO PROVIDE AS APPLICANT HANDOUT

Initial Conditions:

1. You have assumed the responsibilities of the Shift Manager/Emergency Director.
2. An SAE has been declared.
3. Entry to the reactor building is required to manually close ICS*MOV121
4. Time to complete the task for an experienced operator will be approximately 12 minutes.
5. Time to complete the task for a new operator will be approximately 15 minutes
6. A RCIC steam leak into the Reactor Building can not be isolated without manually shutting ICS*MOV121.
7. Closing ICS*MOV121 will prevent serious damage to the facility.
8. Radiation levels at the valve are as high as 25 R/hr.
9. Four (4) individuals are available to perform the task.
   - Worker A is a volunteer who is an experienced Licensed Reactor Operator that has previously received a planned special exposure at another facility (TLD #1, Employee # - 00001, SSN: 111-11-1111).
   - Worker B is a volunteer who is an experienced Licensed Reactor Operator and is a declared pregnant worker and has received a dose of 15 mR this year (TLD #2, Employee # - 00002, SSN: 222-22-2222).
   - Worker C is a volunteer who is an experienced Licensed Reactor Operator that has received a dose of 1200 mR this year (TLD #3, Employee # 00003, SSN: 333-33-3333).
   - Worker D is a volunteer who is a new Licensed Reactor Operator that has received a dose of 250 mR this year (TLD #4, Employee # 00004, SSN: 444-44-4444).
10. Personnel will be provided dosimetry and debriefed at a later time.
10. Ask the operator for any questions.

Initiating Cue:

"(Operator's name), choose an individual to close ICS*MOV121, estimate the expected radiation exposure and document your authorization for an Emergency Exposure. State the reasons why that worker was chosen and why the others were not chosen."

EMERGENCY EXPOSURE AUTHORIZATION FORM	ATTACHMENT 1-1 Sheet 1 of 1

SECTION A - Emergency Pre-Exposure Information

Name	Employer/NMP Dept	SSN
TLD Badge No.	Authorized Exposure Limit	Date of Authorization
	AUTHORIZATION FOR EMERGENCY EXPOSURE SM/ED or ED/RM Signature/Date	
RAM Signature/Date		

SECTION B (for anticipated exposure > 25 rem TEDE)

I have volunteered to perform the task(s) during which I will receive emergency exposure and I have been briefed on the potential biological consequences of the proposed emergency exposure.	
Individual to Receive Exposure (Print/Initial):	Date

SECTION C - (Attach Exposure Evaluation Records)

TLD/Direct-Reading Dosimeter Results:	
Bioassay or Whole Body Counting Results:	
Medical Evaluation/Action:	
Dose Equivalent Assigned to Individual:	
RAM Signature:	Date

SECTION D

Disposition (Allow additional exposure, restrict access, etc.):	
RAM Signature:	Date

NRC SRO ADMIN JPM EP
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Event Classification, Notifications and Reclassification Revision: NRC 2009

Task Number: N/A

Approvals:

_____
General Supervisor Date
Operations Training (Designee)

NA EXAMINATION SECURITY
General Supervisor
Date
Operations (Designee)

NA EXAMINATION SECURITY
Configuration Control Date

Performer:_____(SRO)

Trainer/Evaluator:_____

Evaluation Method: **PERFORM**

Evaluation Location: **SIMULATOR OR OTHER DESIGNATED AREA**

Expected Completion Time: 35 minutes Time Critical Task: YES Alternate Path Task: NO

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

Recommended Start Location: (Completion time based on the start location)

Classroom or Simulator. Ensure sufficient copies of SM/ED Checklist Package are available

Simulator Set-up:

None

Directions to the Instructor/Evaluator:

To be performed as an administrative JPM. Ideally this JPM should be performed in the Control Room or Simulator to provide adequate procedural resources. If this JPM cannot be performed in one of these locations, then the complete SM/ED Checklist Package must be provided to the Candidate.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the Unit 1 SM, Security Supervisor, Communication Aid, and other personnel as necessary. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:

1. EPIP-EPP-02, Classification Of Emergency Conditions at Unit 2
2. EPIP-EPP-18, Attachment 1 SM/ED Checklist
3. EPIP-EPP-20, Emergency Notifications
4. K/A 2.4.29(4.0), Knowledge of the Emergency Plan.

Tools and Equipment:

1.0 EPIP-EPP-02, ATTACHMENT 2, UNIT 2 EAL FLOWCHART
2.0 SM/ED Checklist Package

Task Standard:

Classify the event within 15 minutes of the time that indications are available in the Control Room that an EAL has been exceeded and make all appropriate notifications within 15 minutes of the time the event is classified.

Initial Conditions:

1. You are the Shift Manager at NMP II. The STA is unavailable.
2. Unit 2 had been operating at 100% power.
3. The following conditions exist:

   - A Tornado hit the site causing a Station Blackout fifteen minutes ago and has moved out of the area.
   - The Division 1, 2 and 3 Emergency Diesels tripped immediately after starting and can NOT be restarted.
   - The Systems Operating Center (Load Dispatcher) expects power restoration within 3 hours.
   - Drywell Pressure is 1.1 psig and slowly rising.
   - RCIC is operating and maintaining Reactor Water Level in the normal band.
   - Reactor Building pressure is positive.
   - Meteorological Data:
     - Wind Speed @ 30' = 4 mph
     - Wind Speed @ 200' = 6 mph
     - Wind Dir @ 30' = 45°
     - Wind Dir @ 200' = 45°
     - Stability Class D
4. Unit 1 tripped 15 minutes ago and has NOT declared an emergency.
5. Ask the operator for any questions.

Initiating Cue:

> "(Operator's name), Based on the above conditions determine the event classifications per EPIP-EPP-02 and complete steps 1 through 9.a of EPIP-EPP-18, Attachment 1, SM/ED Checklist".

This is time critical.

After this event is classified and the notifications identified, the plant conditions will change as stated below and a reclassification will be required.

Initial Conditions #2:

1. The Division 3 Diesel Generator has been restored and has been started but NOT connected to any bus.
2. Reactor Level is normal.
3. Drywell Pressure is 1.1 psig and stable.
4. The Security Supervisor notified the Control Room that four armed intruders have taken control of the Division 1, 2, and 3 Switchgear Rooms.
5. The State Police report that road access is normal.

Initiating Cue:

> "(Operator's name), Based upon the above changes in the conditions, determine how would this effect your previous EPIP-EPP-02 classification.

This is time critical.

Performance Steps	Standard	Grade
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary*	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat

RECORD START TIME ____

2. •Obtain a copy of EPIP-EPP-02 and review/utilize the correct section.	EPIP-EPP-02 is obtained.	Sat/Unsat
3. •Reviews the given conditions and determines that a Site Area Emergency declaration is required.	Declares a Site Area Emergency within fifteen minutes of the start of the JPM in accordance with EAL 6.1.4.	**Pass/Fail**
4. •Enters EPIP-EPP-18, Attachment 1, SM/ED Checklist and completes Steps 1 through 9.a. Completes applicable portions of EPIP-EPP-20, Attachment 1A.	Completes Attachment 1A and Attachment 4 correctly.	**Pass/Fail**

EXAMINER NOTE:

Once Attachment 1A, NMP Notification Fact Sheet is completed, provide the Candidate with Initial Conditions #2.

NOTE: This is also Time Critical.

5. •Reviews the given conditions and determine that a General Emergency declaration is required per EAL 8.1.10.	Declares General Emergency within 15 minutes per EAL 8.1.10.	**Pass/Fail**

End of JPM

TERMINATING CUE: The event has been classified and re-classified and all appropriate notifications initiated.

RECORD STOP TIME_____

Initial Conditions:

1. You are the Shift Manager at NMP II. The STA is unavailable.
2. Unit 2 had been operating at 100% power.
3. The following conditions exist:

   - A Tornado hit the site causing a Station Blackout fifteen minutes ago and has moved out of the area.
   - The Division 1, 2 and 3 Emergency Diesels tripped immediately after starting and can NOT be restarted.
   - The Systems Operating Center (Load Dispatcher) expects power restoration within 3 hours.
   - Drywell Pressure is 1.1 psig and slowly rising.
   - RCIC is operating and maintaining Reactor Water Level in the normal band.
   - Reactor Building pressure is positive.
   - Meteorological Data:
     - Wind Speed @ 30' = 4 mph
     - Wind Speed @ 200' = 6 mph
     - Wind Dir @ 30' = 45°
     - Wind Dir @ 200' = 45°
     - Stability Class D

4. Unit 1 tripped 15 minutes ago and has NOT declared an emergency.
5. Ask the operator for any questions.

Initiating Cue:

"(Operator's name), Based on the above conditions determine the event classifications per EPIP-EPP-02 and complete steps 1 through 9.a of EPIP-EPP-18, Attachment 1, SM/ED Checklist".

This is time critical.

Initial Conditions #2

1. The Division 3 Diesel Generator has been restored and has been started but NOT connected to any bus.
2. Reactor Level is normal.
3. Drywell Pressure is 1.1 psig and stable.
4. The Security Supervisor notified the Control Room that four armed intruders have taken control of the Division 1, 2, and 3 Switchgear Rooms.
5. The State Police report that road access is normal.

Initiating Cue:

"(Operator's name), Based upon the above changes in the conditions, determine how would this effect your previous EPIP-EPP-02 classification.

This is time critical.

NRC ADMIN JPM CO1
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Evaluate Shift Log Reading Data per N2-OSP-LOG-D001 Revision: NRC 2009

Task Number: 3410320303

Approvals:

_____
General Supervisor Date
Operations Training (Designee)

NA EXAMINATION SECURITY
General Supervisor Date
Operations (Designee)

NA EXAMINATION SECURITY
Configuration Control Date

Performer:_____(RO)

Trainer/Evaluator:_____

Evaluation Method: **PERFORM**

Evaluation Location: **SIMULATOR OR OTHER DESIGNATED AREA**

Expected Completion Time: 38 minutes Time Critical Task: NO Alternate Path Task: NO

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

Recommended Start Location: (Completion time based on the start location)
Simulator or other designated location.

Simulator Set-up:
N/A

Directions to the Instructor/Evaluator:

To be performed as an administrative JPM.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CSO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:

1. N2-OSP-LOG-D001, Attachment 2
2. K/A 2.1.18 Ability to make accurate / clear and concise logs / records / status boards / and reports (2.9).

Tools and Equipment:
1. Calculator.

Task Standard: Identify missing, incorrect and out of specification entries on a partial Attachment 2 of N2-OSP-LOG-D001.

Initial Conditions:

1. The plant is operating at 100 % power
2. N2-OSP-LOG-D001 is in progress
3. SLS Tank Level was determined by dipping (sounding) the tank because normal level indication is inop.
4. Dipping the SLS Tank indicated the level was 128 inches.
5. SLS Tank Sodium Pentaborate Concentration is 14.03%
6. There are no liquid releases in progress
7. There are no additions in progress to Liquid Radwaste Tanks
8. Ask the operator for any questions.

Initiating cue:

"(Operator's name), given a portion of Attachment 2 of N2-OSP-LOG-D001 review the information entered through and including Item #27 and identify any out of spec items.. Also, complete any missing entries."

Performance Steps	*Standard*	*Grade*
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary* **EVALUATOR to provide to candidate** **1. N2-OSP-LOG-D001 Handout** **2. A copy of the OD-7 control rod position printout.** **RECORD START TIME ____**	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
2. •Obtain a copy of the reference procedure and review/utilize the correct section.	☐ N2-OSP-LOG-D001 Attachment 2, Daily Checks Log	Sat/Unsat
3. •Use SLS Tank Level from the initial conditions determines SLS Tank Level Item #2.	Using the Table OR the formula in Table 2-1 calculates SLS Tank level of ~4695.7 gallons.	**Pass/Fail**
4. Determines Suppression Pool level is above the operating limit but below the ITS Limit. Item #13.	Determines level is out of spec and makes note of unsat condition in the margin in reference to a note in the Remarks Section of the procedure.	**Pass/Fail**
5. Determines Reactor Building ΔP is above the Technical Specification limit but below the Operational limit. Item #15.	Determines Reactor Building ΔP is out of spec and makes note of unsat condition in the margin in reference to a note in the Remarks Section of the procedure.	**Pass/Fail**

Performance Steps	*Standard*	*Grade*
6. Determines the Average Drywell Temperature is above its operating limit. Item #16.	Determines Average Drywell Temperature is out of spec and makes note of unsat condition in the margin in reference to a note in the Remarks Section of the procedure.	**Pass/Fail**
7. Calculates the actual wind direction for Item 20	Actual wind direction is 145°	Sat/Unsat
8. Verifies all control rods indicate position	Reviews OD-7 (Handout) and determines that all control rods indicate a position and places "YES" in VALUE column	Sat/Unsat
9. Verifies status of item 25, BPWS	Determine item 25 BPWS is not required due to >10% Thermal power	Sat/Unsat
10. Determines ITS for Primary Containment AC circuit Breakers is not met Refers to Attachment 3 Item # 27	Determines Primary Containment AC circuit Breaker for Communications Paging System is out of spec and makes note of unsat condition in the margin in reference to a note in the Remarks Section of the procedure.	**Pass/Fail**
11.Informs CRS / SM that • Calculates SLS Tank level of ~4695.7 gallons. (May not inform CRS of tank level because the level meets the requirement) • Suppression Pool level is above the operating limit but below the ITS Limit. • Reactor Building ΔP is above the Technical Specification limit but below the Operational limit. • Average Drywell Temperature is above its operating limit. • ITS for Primary Containment AC circuit Breakers is not met **Cue**: As CRS / SM acknowledge the notification End of JPM	CRS /SM informed	**Pass/Fail**

TERMINATING CUE: Identifies four items of non compliance with Attachment 2 of N2-OSP-LOG-D001 and informs CRS / SM. Calculates/Determines SLC Tank Level

RECORD STOP TIME_____

Performance Steps	Standard	Grade

Initial Conditions:

1. The plant is operating at 100% power
2. N2-OSP-LOG-D001 is in progress
3. SLS Tank Level was determined by dipping (sounding) the tank because normal level indication is inop.
4. Dipping the SLS Tank indicated the level was 128 inches.
5. SLS Tank Sodium Pentaborate Concentration is 14.03%
6. There are no liquid releases in progress
7. There are no additions in progress to Liquid Radwaste Tanks
8. Ask the operator for any questions.

Initiating cue:

"(Operator's name), given a portion of Attachment 2 of N2-OSP-LOG-D001, review the information entered through and including Item #27 and identify any out of spec items. Also, complete any missing entries."

NRC ADMIN JPM CO2
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Perform an APRM Gain Adjustment Revision: NRC 2009

Task Number: 3410320303

Approvals:

_____
General Supervisor Date
Operations Training (Designee)

NA EXAMINATION SECURITY
General Supervisor Date
Operations (Designee)

NA EXAMINATION SECURITY
Configuration Control Date

Performer:_____(RO)

Trainer/Evaluator:_____

Evaluation Method: **PERFORM**

Evaluation Location: **SIMULATOR OR OTHER DESIGNATED AREA**

Expected Completion Time: 35 minutes Time Critical Task: NO Alternate Path Task: NO

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

Recommended Start Location: Simulator

Simulator Set-up:

- IC-20
- Set the APRM 2 to read 97.4%power.

Directions to the Instructor/Evaluator:

To be performed as an administrative JPM.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CSO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:

1. N2-OSP-NMS-@004
2. K/A 2.1.19 (3.9) Ability to use plant computers to evaluate system or component status.

Tools and Equipment:
1. Calculator.

Task Standard: Perform an APRM gain adjustment IAW N2-OSP-NMS-@004.

Initial Conditions:

1. The Plant Process Computer is available for service
2. The Core Power value (%) from the 3D Monicore Periodic Log is 99.9%
3. Ask the operator for any questions.

Initiating cue:

"(Operator's name), Perform an APRM gain adjustment IAW N2-OSP-NMS-@004."

Performance Steps	*Standard*	*Grade*
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary* **EVALUATOR to provide N2-OSP-NMS-@004 and 3D Monicore to candidate.** **RECORD START TIME ____**	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
2. • Records the Core Power value (%) from the 3D Monicore Periodic Log (Initial Conditions) in Sects 8.3.3 and 8.4.1.	99.9% recorded in Sects 8.3.3 and 8.4.1.	Sat/Unsat
3. • Records the "As Found" APRM readings for Reactor Power from Panel 601 in Sect 8.4.3. **NOTE:** Panel 608 is not simulated for all APRMs. Only APRM #2 is available. Provide the candidate with the following APRM readings once they demonstrate the ability to determine APRM #2 reading on the 608 Panel #1 - ~99.9% #3 - ~99.9% #4 - ~99.9%	"As Found" APRM readings for Reactor Power from Panel 608 (and as provided by examiner cue) recorded in Sect 8.4.3.	Sat/Unsat
4. Determines APRM 2 reading recorded in Step 8.4.3 is NOT within the allowable range specified in Step 8.4.2.	Determines APRM 2 is reading greater than 2% different than the other APRMs this in step 8.4.4.	**Pass/Fail**

Performance Steps	Standard	Grade
5. Bypasses APRM 2 using the joystick on the 601 panel. **CUE:** If permission is requested from the CRS/SM acknowledge the request and direct bypassing APRM 2.	APRM 2 bypassed on the 601 panel	Sat/Unsat
6. Press ETC softkey on the APRM 2 chassis until ENTER SET MODE appears then press the softkey for ENTER SET MODE.	Presses ETC softkey on the APRM 2 chassis then presses the softkey for ENTER SET MODE.	**Pass/Fail**
7. Enters password **CUE:** If password is requested tell the candidate the password is 1234.	Password 1234 entered.	**Pass/Fail**
8. Verify APRM GAIN is highlighted then press SET PARAMETERS softkey.	Verifies APRM GAIN is highlighted then presses SET PARAMETERS softkey.	Sat/Unsat
9. Adjust DESIRED APRM GAIN until PROJECTED FLUX reading equals APRM SETTING reading from Step 8.4.1. NOTE: APRM #2 will oscillate during adjustment. A reading of approximately 99.9% is sufficient to meet this step	Adjusts APRM 2 GAIN until PROJECTED FLUX reading equals ~100%	**Pass/Fail**
10. Press ACCEPT softkey, then press EXIT softkey.	Presses ACCEPT softkey, then presses EXIT softkey.	**Pass/Fail**
11. Press EXIT SET MODE softkey, then press the YES softkey.	Presses EXIT SET MODE softkey, then presses the YES softkey.	**Pass/Fail**
12. Unbypass APRM 2 **CUE:** If permission is requested from the CRS/SM acknowledge the request and direct un-bypassing APRM 2.	Unbypass APRM 2 using the joystick on the 601 panel.	Sat/Unsat

Performance Steps	Standard	Grade

13. Informs CRS / SM that a gain adjustment has been made on APRM 2 and that APRM 2 reads 100%.

CRS /SM informed

Sat/Unsat

Cue: As CRS / SM acknowledge the report.

End of JPM

TERMINATING CUE: APRM gain adjustment performed per N2-OSP-NMS-@004 Sect 8.3 and 8.5.2. Indicated power raised to approx. 100% and informs CRS / SM.

RECORD STOP TIME_____

Initial Conditions:

1. The Plant Process Computer is available for service
2. The Core Power value (%) from the 3D Monicore Periodic Log is 99.9%
3. Ask the operator for any questions.

Initiating cue:

"(Operator's name), Perform an APRM gain adjustment IAW N2-OSP-NMS-@004."

NRC ADMIN JPM EC
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Perform Jet Pump ΔP Comparison

Revision: NRC 2009

Task Number: N/A

Approvals:

_____
General Supervisor Date
Operations Training (Designee)

N/A – Exam Security
General Supervisor Date
Operations (Designee)

N/A – Exam Security
Configuration Control Date

Performer:_____ (SRO)

Trainer/Evaluator:_____

Evaluation Method: Perform

Evaluation Location: Classroom

Expected Completion Time: 30 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

Recommended Start Location: Classroom

Simulator Set-up:

1. Reset Simulator to IC-20
2. Insert Malfunction RR51F, Jet Pump 6 Blockage at 10%

Directions to the Instructor/Evaluator: None

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CSO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**.
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:

1. N2-OSP-LOG-D001
2. K/A 2.2.12 (3.7) Knowledge of surveillance procedures

Tools Forms and Equipment:

1. N2-OSP-LOG-D001, Attachment 10, Section 4.0.
2. Calculator

Task Standard:

Attachment 10, Section 3.0, Comparison of Indicated Jet Pump Loop Flows to Predicted Jet Pump Loop Flows by Recirc Loop Drive Flows, for Recirculation Loop "A", completed. Identifying Jet Pump 6 as operating outside its limits and the CRS/SM notified.

Initial Conditions:

1. You are the Balance of Plant Operator.
2. The plant is at 100% power
3. Previous to your shift the Comparison of Indicated Jet Pump Loop Flows to Predicted Jet Pump Loop Flows by Recirc Loop Drive Flows, for Recirculation Loop "A" was not completed.

Initiating cue:

"(Operator's name), Perform Comparison of Indicated Jet Pump Loop Flows to Predicted Jet Pump Loop Flows by Recirc Loop Drive Flows, for Recirculation Loop "A" IAW N2-OSP-LOG-D001, Attachment 10, Section 4.0.

Performance Steps	*Standard*	*Grade*
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary* **Provide candidate N2-OSP-LOG-D001, Attachment 10, Section 4.0. handout**	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
RECORD START TIME _____		
2. At PNL619 record the value for each Jet Pump ΔP in Loop A, as read on2CEC-PNL619.	Records the individual Jet Pump ΔPs in the left hand column of Table 10-3 for 75 to 100% power.	Sat/Unsat
3. Calculate Loop A Average Jet pump ΔP and record in table 10-3 Step 4.2 **NOTE: These #'s are approximate. They may vary slightly between candidates based on slight changes in plant conditions. In all cases, Jet Pump #6 will be inoperable**	Calculates Loop A average ΔP and record in Table 10-3 Average = ~ 37.4	Sat/Unsat

Performance Steps	Standard	Grade
4. Divide each Loop A jet pump ΔP by Loop A Average Jet pump ΔP and record resulting individual to average ΔP ratios in table 10-3 Step 4.3 **NOTE: These #'s are approximate. They may vary slightly between candidates based on slight changes in plant conditions. In all cases, Jet Pump #6 will be inoperable**	Divides each jet pump ΔP by the average and record in table 10-3 Jet pump 1 = 1.04 Jet pump 2 = 1.04 Jet pump 3 = 1.02 Jet pump 4 = 0.96 Jet pump 5 = 1.02 Jet pump 6 = 0.86 Jet pump 7 = 1.02 Jet pump 8 = 1.02 Jet pump 9 = 1.02 Jet pump 10 = 1.02	Sat/Unsat
5. For all Jet pumps in Loop A compare each Jet pump's individual to average ΔP ratio to the Limits gives in Table 10-3 and indicate whether the actual values are within the limits Step 4.4.	Compare results and recognizes that the actual limits are within the limits of Table 10-3 for all Jet Pumps EXCEPT #6 which is below its limit.	**Pass/Fail**
6. Informs CRS / SM that Jet Pump 6 is not within the limits of Table 10-3 **Cue**: As CRS/SM inform candidate that appropriate actions will be taken for Jet pump 6.	CRS /SM informed to take actions for Jet pump 6.	**Pass/Fail**

TERMINATING CUE:
Attachment 10, Section 3.0, Comparison of Indicated Jet Pump Loop Flows to Predicted Jet Pump Loop Flows by Recirc Loop Drive Flows, for Recirculation Loop "A", completed. Identifying Jet Pump 6 as operating outside its limits and the CRS/SM notified.

RECORD STOP TIME_____

Initial Conditions:

1. You are the Balance of Plant Operator.
2. The plant is at 100% power.
3. Previous to your shift the Comparison of Indicated Jet Pump Loop Flows to Predicted Jet Pump Loop Flows by Recirc Loop Drive Flows, for Recirculation Loop "A" was not completed.

Initiating cue:

"(Operator's name), Perform Comparison of Indicated Jet Pump Loop Flows to Predicted Jet Pump Loop Flows by Recirc Loop Drive Flows, for Recirculation Loop "A" IAW N2-OSP-LOG-D001, Attachment 10, Section 4.0.

ADMIN NRC JPM EP
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Fire Fighting Response to a Fire in the Protected Area Revision: NRC 2009

Task Number: 2009190601

Approvals:

_____
General Supervisor Operations Training (Designee) Date

N/A- Exam Security
General Supervisor Operations (Designee) Date

N/A- Exam Security
Configuration Control Date

Performer:_____(RO)

Trainer/Evaluator:_____

Evaluation Method: **PERFORM**

Evaluation Location: **SIMULATOR OR OTHER DESIGNATED LOCATION**

Expected Completion Time: 25 minutes Time Critical Task: NO Alternate Path Task: NO

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

Recommended Start Location: (Completion time based on the start location)

N/A

Simulator Set-up:

Any IC with no Elevated Release rates indicated on DRMS

Directions to the Instructor/Evaluator:

At the appropriate time, provide candidate with the attached EPIP-EPP-5A, Attachment 1 announcement.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CSO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:

1. EPIP-EPP-28, Section 3.2, Attachment 1
2. K/A 2.4.39 (3.3) Knowledge of ROs responsibilities in Emergency Plan Implementation.

Tools and Equipment:

1. None

Task Standard: EPIP-EPP-28, Attachment 1 actions completed, including all required notifications and announcements.

Initial Conditions:
1. You are the on-shift CRO.
2. The SM has been notified of a confirmed fire in the Unit 2 Turbine Building, 250' Elevation Truck Aisle.
3. Ask the operator for any questions.

Initiating cue:
"(Operator's name), perform CRO actions for the fire IAW EPIP-EPP-28 Section 3.2, Att.1."

Performance Steps	*Standard*	*Grade*
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary* **RECORD START TIME _____**	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
2. Obtain a copy of the reference procedure and review/utilize the correct section. **CUE: Provide BLANK copy of Attachment 1**	*EPIP-EPP-28 obtained.* - *Section 3.2 referenced.* - *Attachment 1 selected for implementation*	Sat/Unsat
3. Make announcement as directed by Attachment 1 of EPIP-EPP-28 ***Cue: If asked, report that the OSC has not been activated.*** ***Note: The SM was already notified this is a confirmed fire*** ***Cue: Approx. 45 seconds after completion of announcement, inform candidate that the Fire Brigade Leader has responded, and is in route to the fire***	❑ *Places GAItronics in MERGE* ❑ *Sounds FIRE alarm for 10 seconds* ❑ *Makes required Announcement* ❑ *Takes GAItronics out of MERGE* *Notifies SM that the fire is confirmed and notes time*	**Pass/Fail**
4. Turn up volume on station radio console, including Oswego County fire frequency	*Turns up volume on station radio console, including Oswego County fire frequency.*	Sat/Unsat
5. If this is a confirmed fire and it is outside of the protected area, then request offsite fire assistance per next step. ***Cue: Inform candidate that the Fire Brigade Leader has confirmed the fire, and that a number of empty resin barrels are the source of the fire***	*Recognizes that fire is inside of the protected area, and marks step as **N/A.***	Sat/Unsat
6. If offsite assistance is requested, then inform the Security Central Alarm Station ***CUE: Offsite assistance is NOT requested***	Asks if offsite assistance is requested, marks step as **N/A**	Sat/Unsat

Performance Steps	Standard	Grade
7. If requested by Fire brigade Leader, then call Oswego County 911 Center ***CUE: Fire brigade leader does not request 911 center notification***	May ask if 911 center call is needed, marks step as **N/A**	
8. If required, initiate any Special Operating Procedures or Emergency Operating Procedures **CUE: No SOPs or EOPs are required**	*Marks step as **N/A.***	Sat/Unsat
9. Check Process Radiation Monitors **CUE: No unusual readings are on DRMS**	*Check DRMS for any rise in effluent activity. With no rise observed, continues to monitor*	Sat/Unsat
10. IF SM implements a local area / building evacuation, then perform duties in EPP-EPIP-5A ***CUE: If asked about Gaitronics, tell candidate to leave it in MERGE*** ***CUE: As SM, inform candidate that the Turbine Building is to be evacuated, and provide candidate with a prepared EPIP-EPP-5A, Att. 1 Evacuation form.*** ***Provide JPM Handout #2***	*Candidate makes evacuation announcement per the provided EPIP-EPP-5A "Local Area/Building Evacuation" form*	**Pass/Fail**
11. IF fire is confirmed, then ensure the unaffected Unit SM is notified ***CUE: SM is notified***	*Notifies the Unit 1 SM*	Sat/Unsat
12. When notification received that the fire is out and may be terminated, make appropriate announcement. ***Cue: As Fire Brigade Leader, inform candidate that the fire has been extinguished, and the event is terminated.***	❑ *Places GAItronics in MERGE* ❑ *Sounds Station alarm for 10 seconds* ❑ *Makes required Announcement* ❑ *Takes GAItronics out of MERGE*	**Pass/Fail**
13. Forward all the completed checklists generated for a confirmed fire to the EP Department	*Completed checklists for a confirmed fire forwarded to the EP Department*	Sat/Unsat

End of JPM

TERMINATING CUE: Fire Event has been terminated, Attachment 1 complete, and all announcements made

RECORD STOP TIME_____

LOCAL AREA/BUILDING EVACUATION

(No emergency has been declared)

Instructions: (check boxes to select appropriate announcement)

1. Place GAItronics in Merge,
2. Sound the EVACUATION alarm for 10 seconds
3. Announce (if checked, include in announcement),

☒ a. *Attention, Attention all personnel, this (is / **is not**) _____ a drill.*

☒ b. *Nine Mile Point (Unit 1 or **2**) is ordering an evacuation of the (Unit 1 or **2**): (Provide specific location or building to be evacuated)*
Turbine Building

☒ c. *Due to: (provide conditions necessitating the evacuation)*
Fire in Turbine Building 250' Truck Aisle

☒ d. *All personnel are to leave the (Unit 1 or 2) **Turbine** (area/building)*

☒ 1. *Staying clear of **250'Elev Truck Aisle** (area/elevation) and report to **RP Access Area**.*

OR

☐ 2. *Using the closest possible exit, and report to _____.*

☐ e. *Accountability is being performed, all personnel shall report to an assembly area, card in and remain in the area until further notice.*

☒ f. *Personnel in protective clothing should* (select appropriate)*:*

☒ 1. *Leave the area removing PC's as indicated at the step off pad.*

OR

☐ 2. *Leave the area immediately and obtain Radiation Protection assistance at the control point.*

☒ g. *I repeat this (is / **is not**) a drill.*

4. Repeat the alarm and announcement.

5. Consult with opposite unit SSS and determine if GAItronics should be left in Merge (required for declared emergencies for the duration of the event.

Initial Conditions:

1. You are the on-shift CRO.
2. The SM has been notified of a confirmed fire in the Unit 2 Turbine Building, 250' Elevation Truck Aisle.
3. Ask the operator for any questions.

Initiating cue:

"(Operator's name), perform CRO actions for the fire IAW EPIP-EPP-28 Section 3.2, Att.1."

NRC JPM S-1
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Transfer Operating RCS HPU Subloops (with motion inhibit) Revision: NRC 2009

Task Number: N2-202001-01005

Approvals:

_____
General Supervisor Date
Operations Training (Designee)

NA EXAMINATION SECURITY
General Supervisor Date
Operations (Designee)

NA EXAMINATION SECURITY
Configuration Control Date

Performer:_____(RO/SRO)

Trainer/Evaluator:_____

Evaluation Method: __X_____Perform _____Simulate

Evaluation Location:_____Plant ____X_Simulator

Expected Completion Time: 20 minutes Time Critical Task: NO Alternate Path Task: YES

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

NRC JPM S-1
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Recommended Start Location:

Simulator

Simulator Set-up:

1. Reset to IC 20
2. HPU "A", Subloop 2 is in service
3. Insert triggers as follows:
   TRG1, Event Action = zdrra1lead>0, Command = ior 11a1s19lo3114 (0 8) on
   TRG2, Event Action = zdrra1lead>0, Command = ior 11a1s16lo3014 (0 8) off
   TRG5, Event Action = zdrra1lead>0, Command = imf an602103 (0 8) crywolf

   TRG3, Event Action = zdrra2redy>0, Command = dor 11a1s19lo3114
   TRG4, Event Action = zdrra2redy>0, Command = ior 11a1s16lo3014 (0 0) on
   TRG6, Event Action = zdrra2redy>0, Command = dmf an602103

TRG1, 2,& 5 is when the READY PB on Sub-loop 1 is depressed, after a TD of 8sec the READY light on Sub-loop 2 goes out and the MAINT light comes on and AN602103 alarms
TRG3, 4, & 6 is when the READY PB on Sub-loop 1 is depressed, the MAINT light goes out, the READY light comes back on, and AN602103 clears

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Do not use the plant page to make plant announcements.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

NRC JPM S-1
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

1. Critical steps are identified as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:

1. N2-OP-29, Sect. F 2.0
2. NUREG K/A 202002 A4.02

Tools and Equipment:

1. None

Task Standard:

Hydraulic Power Unit "A" has been transferred such that Subloop 1 is in "LEAD" operation and Subloop 2 is in a "READY" status.

NRC JPM S-1
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Initial Conditions:

1. Plant is operating at 100% power.
2. Routine equipment rotations are taking place.
3. Accumulator pressure decay times not to be monitored.
4. Instructor to ask operator for any questions.

Initiating cue:

"(Operator's name), In accordance with N2 OP-29 section F.2.0, Shift sub loops on HPU 'A' from SUB LOOP 2 in LEAD, SUB LOOP 1 READY to SUB LOOP 1 in LEAD, SUB LOOP 2 READY

Performance Steps	*Standard*	*Grade*
1. Provide repeat back of initiating cue. Evaluator Acknowledge repeat back providing correction if necessary	Proper communications used for repeat back	Sat/Unsat
RECORD START TIME ____		
2. Obtain a copy of the reference procedure and review/utilize the correct section.	N2-OP-29 obtained. Precautions & limitations reviewed & section F.2.0 referenced.	Sat/Unsat
3. Verify SUB LOOP 2 HPU operational and controlling Flow Control Valve. IAW OP -29 step F.2.1	Verify HPU 'A' SUBLOOP 2 in LEAD, OPERATIONAL, and PRESSUREIZED	Sat/Unsat
4. Verify SUBLOOP 1 HPU readiness for operation. IAW OP -29 step F.2.2 Observes:	Observe SUBLOOP 1 **READY** light illuminated.	Sat/Unsat
	Observe SUBLOOP 1 **MAINTENANCE** light extinguished.	Sat/Unsat
READY light illuminated.		
MAINTENANCE light extinguished.		

Performance Steps	*Standard*	*Grade*
5. Start SUBLOOP 1 Pump/Fan Motor. IAW OP-29 Step F.2.3	Momentarily depress SUBLOOP 1 **"PUMP/FAN MOTOR RUN"** pushbutton	**Pass/Fail**
	Verify SUBLOOP 1 **"PUMP/FAN MOTOR RUN"** light illuminated.	Sat/Unsat
CUE: When requested, function as the AO and report local gauge pressure for SUBLOOP 1 reads approximately 1900 psig	Verify SUBLOOP 1 **"PRESSURIZED"** light illuminated **AND** local pressure gauge indicates 1850~1950 psi.	Sat/Unsat
NOTE: Step F.2.4 will not be required		
6. Place SUBLOOP 1 HPU into "LEAD" operation. IAW OP-29 step F.2.5	Depress SUBLOOP 1 "LEAD" pushbutton	**Pass/Fail**
	Verify SUBLOOP 1, **"LEAD"** light illuminates.	Sat/Unsat
	SUBLOOP 1, **"OPERATIONAL"** light illuminates.	Sat/Unsat
	SUBLOOP 1, **"PRESSURIZED"** light illuminates **OR** local pressure gauge indicates 1850~1950 psi.	Sat/Unsat
CUE: <u>If asked, function as the AO and report local gauge pressure is still reading of approximately 1900 psig.</u>		
	SUBLOOP 2, **"PUMP/FAN MOTOR STOP"** light illuminates.	Sat/Unsat
	SUBLOOP 2, **"READY"** light illuminates.	Sat/Unsat
7. Respond to Annunciator 602105 **"RECIRC FCV "A" MOTION INHIBIT"**.	References the ARP for Annunciator 602105 RECIRC FCV 'A' MOTION INHIBIT	Sat/Unsat
Note: The annunciator will clear immediately after alarming		
CUE: <u>Inform Candidate that they must respond to the Annunciator.</u>		
<u>Role Play</u> As System engineer acknowledge AN602105 alarmed, you will enter data for trending	ARP. States that the system engineer needs to be notified for trending purposes	Sat/Unsat

Performance Steps	*Standard*	*Grade*
ALTERNATE PATH STARTS HERE AND IS COMPLETED IN STEP 8		
Note: AFTER a time delay, the READY light for SUPLOOP2 goes out and the MAINT light illuminates and AN602103 RECIRC FCV A BACK UP HYDR INOPERABLE Alarms	Observe SUBLOOP 2 **READY** light extinguished	Sat/Unsat
	Observe SUBLOOP 2 **MAINTENANCE** light illuminated	Sat/Unsat
8. Depress READY push button to place SUBLOOP 2 in standby (READY status). IAW OP-29 step F.2.7	Momentarily depress SUBLOOP 2 **"READY"** pushbutton	**Pass/Fail**
	Observe SUBLOOP 2 **"READY"** light illuminated.	Sat/Unsat
Note: When READY push button is depressed, AN602103 also clears	Observe SUBLOOP 2 **"MAINTENANCE"** extinguished	Sat/Unsat
9. Initiate an ACR to correct potential nitrogen bladder leakage. (May say CR based on new CR procedure). <u>Role Play</u> State that as CRS you will have an ACR initiated	State that an ACR/CR must be initiated to correct potential nitrogen bladder leakage	Sat/Unsat

TERMINATING CUE: Hydraulic Power Unit "A" SUBLOOP 1 is in "LEAD" and SUBLOOP 2 is in "READY"

RECORD STOP TIME_____

NRC JPM S-1
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

For the Examiner ONLY

Initial Conditions:

1. Plant is operating at 100% power.
2. Routine equipment rotations are taking place
3. Accumulator pressure decay times not to be monitored
4. Instructor to ask operator for any questions

Initiating cue:

"(Operator's name), In accordance with N2 OP-29 section F.2.0, Shift sub loops on HPU 'A' from SUB LOOP 2 in LEAD, SUB LOOP 1 READY to SUB LOOP 1 in LEAD, SUB LOOP 2 READY

NRC JPM S-2
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Add Water to the Suppression Pool Using the HPCS System Revision: NRC 2009

Approvals:

_____ /_____
General Supervisor Date
Operations Training (Designee)

_____ /_____
General Supervisor Date
Operations (Designee)

_____ /_____
Configuration Control Date

Performer:_____(RO/SRO)

Trainer/Evaluator:_____

Evaluation Method: _X_ Perform _____Simulate

Evaluation Location: _Plant __X__ Simulator

Expected Completion Time: 15 min. Time Critical Task: No Alternate Path Task: Yes

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluators Signature:_____ Date:_____

NRC JPM S-2
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Recommended Start Location: (Completion time based on the start location)
Simulator

Simulator Set-up (if required):
IC 20
1. Malfunction **CS05** on TRG -1, (imf cs05 (1 8) true), [trips CSH Pump eight (8) seconds after pump start]
2. Set TRG 1: hzlcshps2(2) >0 [Red CHS pmp run light illuminated]

Directions to the Instructor/Evaluator:
Prior to performance of this JPM, obtain SM / CRS general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRS permission.

Directions to Operators:
Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

With the exception of accessing panels, NO plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Do not use the plant page to make plant announcements.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self verification shall be demonstrated.
3. During Training JPM:
   - Self verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:
1. N2-OP-33, Section H.3 and Section H.2
2. N2-ARP-01, 601710 & 601728
3. NUREG K/A 295030 EA1.03 3.4/3.4

NRC JPM S-2
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Tools and Equipment:
1. None

Task Standard:

Using the High Pressure Core Spray System raise Suppression Pool water level to 199.9 feet.

Initial Conditions:

1. EOP-PC has been entered on Low Suppression Pool water level
2. Suppression Pool water level is currently 199.3 feet
3. Instructor to ask for any questions

Initiating Cues:

"(Operator's name), As directed by EOP-PC, Raise Suppression Pool water level to 199.9 feet using the High Pressure Core Spray System, IAW N2-OP-33, Section H.3.0."

Performance Steps	Standard	Grade
1. Provide repeat back of initiating cue. Evaluator Acknowledge repeat back providing correction if necessary	Proper communications used for repeat back	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure.	N2-OP-33 obtained. Precautions & limitations reviewed and section H.3.0 referenced.	Sat/Unsat
CUE: Tell candidate that Subsection F.1.0 has been completed.		
3. Verify operational status of the CSH System with the SM.	Request Operational status of the CSH System.	Sat/Unsat
CUE: Responding as the SM, state that the CSH System HAS been declared inoperable.		

Performance Steps	Standard	Grade
4. Start CSH*P1.	Verify pump suction aligned to the CST.	Sat/Unsat
	Places control switch for CSH*P1 in the "START" position. • Checks for "RED" light (Breaker closed). • Checks CSH pump motor amps.	**Pass/Fail**
5. Verify open CSH*MOV105, Minimum Flow Bypass Valve.	• Checks valve "RED" light on.	Sat/Unsat
6. Monitor CST AND Suppression Pool levels.	Monitors Suppression Pool water level on either SPDS screen or 2CMS-LI11B or A at P601	Sat/Unsat
Note: Candidate may not monitor CST level due to responding to the CSH pmp trip	Monitors Panel 851, CNS-LI-08A & B for CST water level.	Sat/Unsat
7. Respond to CSH*P1 trip.	Notify SM that CSH*P1 has tripped on an electrical fault.	Sat/Unsat
Annunciator alarms: -AN601710 HPCS PUMP 1 MOTOR ELECTRIC FAULT -AN601728 HPCS PUMP 1 AUTO TRIP/ OUT OF SER	• Place control switch for CSH*P1 in the "PULL-TO-LOCK" position.	Sat/Unsat
	• Dispatch an Plant Operator to investigate the cause of the electrical fault on CSH*P1.	Sat/Unsat
CUE: As the SM, acknowledge the candidates' report that CSH*P1 has tripped._Notify them that another operator will investigate the alarms.		
CUE: As the SM, direct the candidate , Using the guidance provided by EOP-PC, continue filling the Suppression Pool using the CSH System and raise pool level to 199.9 feet.		

Performance Steps	Standard	Grade
8. Review/utilize the correct section of the procedures	References N2-EOP-PC step SPL3 and N2-OP-33 Section H.2.0 Suppression Pool Fill By Gravity Drain	Sat/Unsat
9. Verify suction flow path.	Verify open CSH*MOV101, PUMP SUCTION FROM CST's.	Sat/Unsat
10. Monitor and maintain CSH discharge pressure to ensure system operability.	Throttle OPEN CSH*MOV111, TEST RETURN TO SUPPRESION POOL. • Monitor 2CSH*PI117 • Throttle OPEN CSH*MOV111 • Maintain System pressure ≥ 65 psig.	**Pass/Fail**
•11. Monitor CST AND Suppression Pool levels.	Monitors Suppression Pool water level on either SPDS screen or 2CMS-LI11B or A. at P601	Sat/Unsat
	Monitors Panel 851, CNS-LI-08A & B for CST water level.	Sat/Unsat
CUE: At the Examiners discretion, cue the operator that Suppression Pool Level is at 199.9 feet.		
12. Secure filling the Suppression Pool.	Check either SPDS or 2CMS-LI11B to ensure Suppression Pool water level is 199.9 feet and holding.	Sat/Unsat
	Closes CSH*MOV111, TEST RETURN TO SUPPRESION POOL.	**Pass/Fail**
Notifies CRS/SM that they have secured filling the Suppression Pool.	Notifies the CRS/SM that CSH*MOV111 is closed, Suppression Pool level is 199.9 feet AND the operability concern per *DER 2-98-0557* no longer exists, but the pump trip has left the CSH System inoperable.	Sat/Unsat
CUE: As the SM, acknowledge the candidates report concerning the closure of CSH*MOV111 and the operability concern per *DER 2-98-0557* no longer exists concerns.		

NRC JPM S-2
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Terminating Cue: **Suppression Pool water level at 199.9 feet as read on SPDS or 2CMS-LI11B and the fill lineup secured.**

RECORD STOP TIME _____

For The Examiner ONLY

Low Level (Below El. 199.5 ft) (17)

CAUTION: Operating ECCS or RCIC with suppression pool water level below El. 195 ft may cause system damage.

Maintain suppression pool water level above El. 192 ft (bottom of scale) (OP-31, Sections H.6.0; OP-33, Sections H.2.0 and H.3.0).

☛ Low suppression pool water level affects the availability of suppression pool temperature instruments. Check Detail X.

IF	THEN
You cannot maintain suppression pool water level above El. 192 ft (bottom of scale)	1. **ENTER RPV CONTROL:** Enter EOP-RPV while continuing here. ↓ 2. **BLOW DOWN:** Enter EOP-C2 while continuing here. ↓

SPL-3

NRC JPM S-2
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Initial Conditions:

1. EOP-PC has been entered on Low Suppression Pool water level
2. Suppression Pool water level is currently 199.3 feet.
3. Instructor to ask for any questions

Initiating Cues:

"(Operator's name), As directed by EOP-PC, Raise Suppression Pool water level to 199.9 feet using the High Pressure Core Spray System, IAW N2-OP-33, Section H.3.0."

NRC JPM S-3
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Manual stopping LPCS after an inadvertent initiation and injection (Alternate)

Revision: NRC 2009

Approvals:

_____/_____
General Supervisor Operations Training (Designee) Date

_____/_____
General Supervisor Operations (Designee) Date

_____/_____
Configuration Control Date

Performer:_____(RO/SRO/AO)

Trainer/Evaluator:_____

Evaluation Method: __X____Perform _____Simulate

Evaluation Location: _____Plant _____X____Simulator

Expected Completion Time: 10 min. Time Critical Task: No Alternate Path Task: Yes

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature:_____ Date:_____

NRC JPM S-3
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Recommended Start Location: (Completion time based on the start location)

Unit 2 Simulator

Simulator Set-up (if required):

1. IC-6 Approach to Criticality, all rods in
2. Open 2 SRVs
3. Insert Malfunction RH13A, ECCS Inadvertent Initiation (DIV 1)
4. Override shut LPCI-A injection valve, 2RHS*MOV24A
5. Let run until RPV is full and flow established out of the 2 SRVs, Snap IC and run JPM

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRS general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRS permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

With the exception of accessing panels, NO plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Do not use the plant page to make plant announcements.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.

3. During Training JPM:
   - Self-verification shall be demonstrated.
   - (Additional/Concurrent/No other) verification shall be demonstrated.

References:

1. N2-OP-32, Section F.2.4
2. NUREG K/A: 209001 A4.01 3.8/3.6

Tools and Equipment: None

Task Standard: Manually stopping LPCS injection flow, CSL pump in PTL and Injection Overridden closed

Initial Conditions:

1. LPCS is injecting after an inadvertent auto initiation.
2. Adequate core cooling has been assured
3. LPCS injection is not required.
4. Instructor to ask operator for any questions.

Initiating Cues:

"(Operator's name), In accordance with N2-OP-32, Section F.2.4, stop LPCS injection flow."

Performance Steps	Standard	Grade
1. Provide repeat back of initiating cue. Evaluator Acknowledge repeat back providing correction if necessary.	Proper communications used for repeat back	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure.	N2-OP-32 obtained. Precautions & limitations reviewed & section F.2.4 referenced.	Sat/Unsat
3. Depress "LPCI A/LPCS Reset" pushbutton.	At P601 Operator locates and verifies "LPCI A/LPCS Reset" pushbutton then depresses the Reset button.	Sat/Unsat
4. Verifies white seal in light is off.	At P601 Operator locates and verifies "LPCI A/LPCS Reset" white seal in light.	Sat/Unsat
5. "LPCI A/LPCS Reset" white seal in light remains lit.	Operator observes white seal in light remains lit.	**Pass/Fail**

Performance Steps	Standard	Grade
6. Operator reports LPCI A/LPCS initiation fails to reset. Cue: Acknowledge report. **NOTE:** JPM performer may request further direction at this point. Direct the performer to: Continue in N2-OP-32.	Reports LPCI A/LPCS fails to reset.	Sat/Unsat
7. Stop LPCS pump 2CSL*P1.	At P601 Operator locates and verifies 2CSL*P1 control switch then places it in "Pull to Lock" by turning it in a counter-clockwise direction to the "Pull to Lock" (black flag) position and pulls the control switch up. Green light OFF, red light OFF. (Amp Meter AM-2CSLN51 can also be used.)	**Pass/Fail**
8. Shuts injection valve. (2CSL*MOV104)	At P601 Operator locates and verifies 2CSL*MOV104 then shuts it by turning the switch counter-clockwise to the close position. Green light ON, red light OFF.	**Pass/Fail**
9. Verifies minimum flow valve opens. (2CSL*MOV107) Note: Min Flow valve will not auto reopen, operator must reposition to open	At P601 Operator locates and positions control switch to the open position, verifies 2CSL*MOV107 green light OFF and red light ON.	**Pass/Fail**
10. Notifies CRS/SM that they have secured LPCS injection.		
CUE: As the CRS/SM, acknowledge the candidates report concerning shutting down LPCS and the failure of the initiation signal to reset.	Notifies the CRS/SM that LPCS is shutdown and the failure of the initiation signal to reset.	Sat/Unsat

Terminating Cue: LPCS pump shutdown and 2CSL*MOV104 closed.

RECORD STOP TIME _____

Initial Conditions:

1. LPCS is injecting after an inadvertent auto initiation.
2. Adequate core cooling has been assured
3. LPCS injection is not required.
4. Instructor to ask operator for any questions.

Initiating Cues:

"(Operator's name), In accordance with N2-OP-32, Section F.2.4, stop LPCS injection flow."

NRC JPM S-4
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Isolate Main Steamlines (Alternate) Revision: NRC 2009

Approvals:

_____/_____
General Supervisor Date
Operations Training (Designee)

_____/_____
General Supervisor Date
Operations (Designee)

_____/_____
Configuration Control Date

Performer:_____(RO/SRO/AO)

Trainer/Evaluator:_____

Evaluation Method: __X____Perform _____Simulate

Evaluation Location: _____Plant _____X____Simulator

Expected Completion Time: 6 min. Time Critical Task: No Alternate Path Task: Yes

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature:_____ Date:_____

NRC JPM S-4
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Recommended Start Location: (Completion time based on the start location)

Simulator

Simulator Set-up (if required):

1. IC20, Mode Switch to shutdown, execute SOP-101C to start the Vacuum Pumps, allow the turbine to trip and annunciators to settle
2. Start 2RHR*P1A then arm and depress ADS initiation PB's to open the ADS valves
3. Insert Remote RC02, then initiate RCIC (Arm & Depress PB)
4. Insert Malfunction RR27 All level instruments fail upscale
5. Insert Over Rides on MSIV switches as follows: (prevents the Close, Auto, Test switches from closing the MSIVs)
   MSIV 6D
   02a2s041di3240, off
   02a2s041di3241, off
   MSIV 6C
   02a2s042di32613, off
   02a2s042di32614, off
   MSIV 7D
   02a2s081di3248, off
   02a2s081di3249, off
   MSIV 7C
   02a2s082di3273, off
   02a2s082di3274, off

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CSO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

With the exception of accessing panels, NO plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Do not use the plant page to make plant announcements.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - Additional/Concurrent verification shall be demonstrated.

References:

1. N2-SOP-83,
2. NUREG 1123, 223002 K1.01 3.8/3.8 and A4.01 3.6/3.6

NRC JPM S-4
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Tools and Equipment:

None

Task Standard: All 8 MSIVs closed.

Initial Conditions:

1. Plant Conditions exist that require closing all the MSIVs
2. Instructor to ask operator for any questions

Initiating Cues:

"(Operator's name), the CRS has entered N2-SOP-83, Primary Containment Isolation Failure/Reset, and determined a manual isolation of the MSIVs is required. Using N2-SOP-83, proceed with the isolation of the MSIVs using the preferred method.

Performance Steps	Standard	Grade
1. Provide repeat back of initiating cue. Evaluator Acknowledge repeat back providing correction if necessary.	Proper communications used for repeat back	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure.	N2-SOP-83 obtained and referenced	Sat/Unsat
3. Place control switches for MSIV 6A, 6B, 6C, 6D, 7A, 7B, 7C and 7D in the CLOSE position.	Control switches for MSIVs 6A, 6B, 6C, 6D, 7A, 7B, 7C and 7D moved from AUTO to CLOSE.	**Pass/Fail**
4. MSIVs 6C, 6D, 7C and 7D stroke Closed. MSIVs 6A, 6B, 7A, and 7B do not reposition (remain open)	Observe CLOSED position for MSIVs 6C, 6D, 7C and 7D Observe OPEN position indication on MSIVs 6C, 6D, 7C, and 7D.	Sat/Unsat

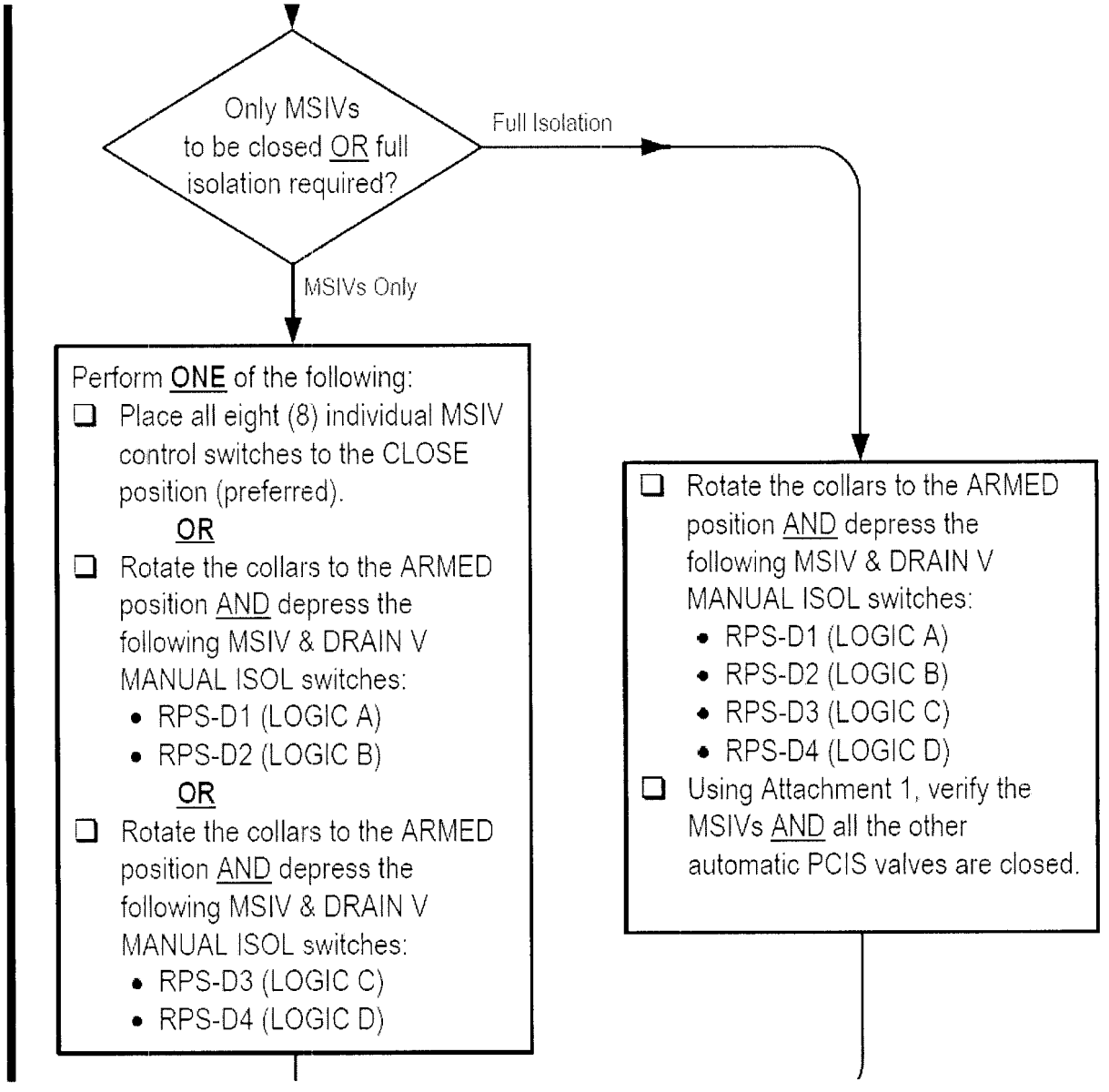
Performance Steps	Standard	Grade
5. Report closure of MSIVs 6A, 6B, 7A, and 7B and MSIVs 6C, 6D, 7C, and 7D failed to close. Cue: Acknowledge report.	Report closure of MSIVs 6A, 6B, 7A, and 7B and non-closure of MSIVs 6C, 6D, 7C, and 7D	Sat/Unsat
NOTE: JPM performer may request further direction at this point. For an **RO**; direct them to isolate the Main Steam lines by closing all MSIVs IAW SOP-83. For an **SRO** ask what they would recommend.		
6. IAW N2-SOP-83 Rotate collars and depress MSIV and Drain V. Manual Isol switches RPS-D1 (Logic A) and RPS-D2 (Logic B) **NOTE:** These will not work and the operator must proceed to the next step in the SOP	Refers to SOP-83 Primary Containment Isolation Failure / Reset Rotate collars and depress MSIV and Drain V. Manual Isol switches RPS-D1 (Logic A) and RPS-D2 (Logic B) pushbuttons to close MSIVs 6A, 6B, 7A, and 7B.	**Pass/Fail**
7. IAW N2-SOP-83 Rotate collars and depress MSIV and Drain V. Manual Isol switches RPS-D3 (Logic C) and RPS-D4 (Logic D)	Refers to SOP-83 Primary Containment Isolation Failure / Reset Rotate collars and depress MSIV and Drain V. Manual Isol switches RPS-D3 (Logic C) and RPS-D4 (Logic D) pushbuttons to close MSIVs 6A, 6B, 7A, and 7B.	**Pass/Fail**
8. Observe Close indications on MSIVs 6C, 6D, 7C, and 7D	Observe green closed indications for MSIVs 6C, 6D, 7C, and 7D	Sat/Unsat

Performance Steps	Standard	Grade
9. Report Main Steam lines are isolated. Cue: Acknowledge report.	Report all MSIVs are closed; the Main Steam lines are now isolated. **NOTE:** Applicant may also mention that the MS Drains have also been isolated.	Sat/Unsat

Terminating Cue: All 8 MSIVs closed.

RECORD STOP TIME _____

For the Examiner ONLY



Initial Conditions:

1. Plant Conditions exist that require closing all the MSIVs.
2. Instructor to ask operator for any questions.

Initiating Cues:

"(Operator's name), the CRS has entered N2-SOP-83, Primary Containment Isolation Failure/Reset, and determined a manual isolation of the MSIVs is required. Using N2-SOP-83, proceed with the isolation of the MSIVs using the preferred method.

NRC JPM S-5
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Load, Unload, and Secure 2EGS*EG1 Revision: NRC 2009

Approvals:

_____ / _____
General Supervisor Date
Operations Training (Designee)

_____ / _____
General Supervisor Date
Operations (Designee)

_____ / _____
Configuration Control Date

Performer:_____(RO/SRO/AO)

Trainer/Evaluator:_____

Evaluation Method: __X____Perform _____Simulate

Evaluation Location: _____Plant _____X____Simulator

Expected Completion Time: 15 min. Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluators Signature:_____ Date:_____

NRC JPM S-5
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Recommended Start Location: (Completion time based on the start location)

Simulator

Simulator Set-up (if required):

1. Start EG1 using N2-OSP-EGS-M@001 complete through step 8.2.22.
2. Copy of N2-OSP-EGS-M@001 marked up to but not including step 8.2.23.
3. At Panel P849, place Fire Zones 402SW, 403SW, and 404SW in Alarm Only
4. Any IC with 2EN* SWG101 powered from off site.

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRS general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRS permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

With the exception of accessing panels, NO plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Do not use the plant page to make plant announcements.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self verification shall be demonstrated.
3. During Training JPM:
   - Self verification shall be demonstrated.
   - Additional/Concurrent verification shall be demonstrated.

NRC JPM S-5
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

References:

1. N2-OSP-EGS-M@001, Section 8.2
2. NUREG 264000, A4.02, 3.4/3.4 and A4.04 3.7/3.7

Tools and Equipment:

None
Task Standard:

Load, Unload, and secure EG1.

Initial Conditions:

1. The surveillance, N2-OSP-EGS-M@001, has been started and completed up through step 8.2.22
2. EG1 is running with voltages matched to the switchgear.
3. The Control Room Supervisor has determined that the grid operating state is "Normal" and that there are no unusual external conditions present or imminent.
4. A Plant Operator is at the diesel and has been briefed on the emergency shutdown procedure.
5. All required data has been recorded in the appropriate attachments.
6. Communications with the local operator will be simulated with the examiner acting as the local operator
7. Instructor to ask operator for any questions.

Initiating Cues:

"(Operator's name), the operator performing surveillance N2-OSP-EGS-M@001 on Division 1 Diesel Generator has been temporarily called away. Continue the surveillance starting at 8.2.23 and continue until relieved.

	Performance Steps	*Standard*	*Grade*
1.	Provide repeat back of initiating cue. Evaluator Acknowledge repeat back providing correction if necessary.	Proper communications used for repeat back	Sat/Unsat
2.	**RECORD START TIME** _____		
3.	Provide a copy N2-OSP-EGS-M@001 marked up complete to and including step 8.2.22	N2-OSP-EGS-M@001 obtained. Precautions & limitations reviewed & Section 8.2 referenced (next step 8.2.23).	Sat/Unsat

Performance Steps	*Standard*	*Grade*
4. Adjust GOVERNOR to establish slow clockwise rotation on SYNCHROSCOPE (slow in fast direction) as indicated by: a. Meter movement between 1/2 to 1 inch per second b. 12 to 24 seconds for 360 degree meter sweep	Using the Governor Control Switch raises or lowers as appropriate to cause the Synchroscope to rotate in the clock-wise direction at the speed of either: 1) Meter movement between ½ to 1 inch per second OR 2) 12 to 24 seconds for 360 degree meter sweep	**Pass/Fail**
5. WHEN SYNCHROSCOPE reaches 5 minutes before 12 o'clock (11 o'clock position), perform the following: a. Close 2ENS*SWG101-1. b. Verify generator picks up load as indicated on WM-2EGPA20	Observes rotation of Synchroscope, when needle indicates 5 minutes to 12 o'clock, Closes breaker 101-1 Observes the generator has picked up load (approximately 50 kw)	**Pass/Fail**
6. Place SYNCHRONIZE TO BUS 101 switch to OFF	Positions Synch Key to OFF	Sat/Unsat
NOTE: At the examiner's discretion Time Compression maybe used for the next steps		
7. Using GOVERNOR switch, raise Generator Load at a rate of about 500 KW per minute as follows: a. Raise Generator Load to 1100 KW. Remain at 1100 KW for 5 minutes. b. AFTER 5 minutes, raise Generator Load to 2200KW c. Remain at 2200 KW for 10 minutes	Positions the Governor Control switch to the RAISE position Observes generator KW raise. Raises KW load to approximately 500Kw and begins one minute wait for next KW increase Raises KW to 1100 and commences 5 minute wait After 5 minutes, Raises KW to 2200 in 500 KW increments. Commences 10 Minute wait	**Pass/Fail** Sat/Unsat
CUE: For each step (a. b. c.) after applicant has verified Generator Load STATE; "**The required time is satisfied proceed with the procedure**.		

Performance Steps	*Standard*	*Grade*
8. WHEN Generator Load is at 2200 KW AND using VOLTAGE REGULATOR switch, adjust VARS to 900 A-C KILOVARS TO BUS as indicated on VARM-2EGPA20 (VARM-2EGPB20), VARS	Using the Voltage Regulator Control Switch, Adjusts EG1 KVAR load to 900 KVAR	Sat/Unsat
CUE: After KVARs are adjusted; Inform applicant that the Plant Manager has directed the surveillance must be secured and to back out of the surveillance. The SM directs you to go to surveillance step 8.2.35 and shut down the DG	Applicant resumes surveillance on step 8.2.35	Sat/Unsat
9. Using EMERGENCY DSL GEN 1 GOVERNOR switch, reduce Diesel Generator Load to about 1100 KW. **CUE:** After applicant has verified Generator Load STATE; "**The required time is satisfied proceed with the procedure.**	Positions the Governor Control Switch in the lower direction. Observes KW lower to approx. 1100 KW Commences 15 minute cool down of the engine at this load	Sat/Unsat
10. Using EMERGENCY DSL GEN 1 GOVERNOR switch, reduce Diesel Generator Load to about 100 KW.	Positions the Governor Control Switch in the lower direction Observes KW lower to approx 100 Kw	Sat/Unsat
11. Using EMERGENCY DSL GEN 1 VOLTAGE REGULATOR switch, adjust VARS to >0 but <100 A-C KILOVARS TO BUS.	Using the Voltage Regulator Control Switch, positions the control switch in the LOWER direction Observes and Lowers KVAR to >0 but less than 100 KVAR TO BUS	Sat/Unsat

Performance Steps	*Standard*	*Grade*
12. Open 2ENS*SWG101-1, OUTPUT BREAKER 101-1.	Positions control switch for breaker 101-1 to the OPEN position Observes the breaker position indication change from Red to Green Observes EG1 KW go to zero	**Pass/Fail**
13. Place EMERGENCY DSL GEN 1 PARALLEL switch to OFF.	Positions EG1 Parallel Switch to the OFF position	Sat/Unsat
14. Place DIVISION 1 2EGS*EG1 START switch to STOP.	Place START – STOP switch to STOP.	**Pass/Fail**

NOTE: Engine starts an automatic 5 minute cool down, then stops without further operator action

CUE: After applicant has placed the switch in STOP, STATE; "**This completes your assignment another operator will complete the procedure.**

Terminating Cue: EG1 is in cooldown.

RECORD STOP TIME _____

Initial Conditions:

1. The surveillance, N2-OSP-EGS-M@001, has been started and completed up through step 8.2.22
2. EG1 is running with voltages matched to the switchgear.
3. The Control Room Supervisor has determined that the grid operating state is "Normal" and that there are no unusual external conditions present or imminent.
4. A Plant Operator is at the diesel and has been briefed on the emergency shutdown procedure.
5. All required data has been recorded in the appropriate attachments.
6. Communications with the local operator will be simulated with the examiner acting as the local operator
7. Instructor to ask operator for any questions.

Initiating Cues:

"(Operator's name), the operator performing surveillance N2-OSP-EGS-M@001 on Division 1 Diesel Generator has been temporarily called away. Continue the surveillance starting at 8.2.23 and continue until relieved.

NRC JPM S-6
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Shifting on RBCLC Pumps with an Isolation of the Reactor Building Nonessential Header

Revision: NRC 2009

Approvals:

_____	_____
General Supervisor Operations Training (Designee) Date	General Supervisor Operations (Designee) Date

NA EXAMINATION SECURITY
Configuration Control Date

Performer:_____(RO/SRO)

Trainer/Evaluator:_____

Evaluation Method: __X____Perform _____Simulate

Evaluation Location:_____Plant ____X__Simulator

Expected Completion Time: 20 minutes Time Critical Task: NO Alternate Path Task: YES

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

NRC JPM S-6
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Recommended Start Location:

Simulator

Simulator Set-up:

1. Reset to IC 20
2. Ensure 2CCP-P1A and B running, 2CCP-P1C secured
3. Set Event Trigger #1: hzlcw2ccppmp1a(1)>0, [CCP-P1A green light illuminating]
   Set Action for Event Trigger #1: ior 01a1s028di0116 (1 0) on, [this Over Ride causes 2SWP-MOV19B to close] and inf an601132 (1 7) crywolf
4. Set Trigger #2: zdcw2swpmov19b(2), [Cntl Sw for 2SWP*MOV19B positioned to Open]
   Set Action for Event Trigger #2: dor 01a1s028di0116, [This deletes the Over Ride on 2SWP*MOV19B control switch; which allows 2SWP*MOV19B to stroke back open, after the operator positions the switch to the OPEN position]

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Do not use the plant page to make plant announcements.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

NRC JPM S-6
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

References:

1. ARP 601132
2. N2-OP-11
3. N2-SOP-11
4. NUREG K/A 400000A2.03, 2.9/3.0

Tools and Equipment:

None

Task Standard:

2CCP-P1C is to be placed in service, 2CCP-P1A removed from service and SWP restored to the Reactor Building.

Initial Conditions:

1. 2CCP-P1A is being removed from service for maintenance.
2. 2CCP-P1C is to be placed in service.
3. 2CCP-P1C has been vented, and is ready to be placed in service.
4. Another operator has confirmed normal operating indications in accordance with Subsection F.1.0.
5. Ask the operator for any questions.

Initiating cue:

"(Operator's name), Place 2CCP-P1C in service, and shutdown 2CCP-P1A per N2-OP-13.

Performance Steps	*Standard*	*Grade*
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary*	❑ Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
RECORD START TIME ____		
2. Obtain a copy of the reference procedure and review/utilize the correct section.	N2-OP-13 obtained. Precautions & Limitations are reviewed and section F.2 and F.3 referenced.	Sat/Unsat
3. Starts 2CCP-P1C	Places 2CCP-P1C Control Switch in	**Pass/Fail**

Performance Steps	*Standard*	*Grade*
Note: When red run light illuminates, Over-ride on 2SWP*MOV19B goes active closing this valve CUE: If asked, field operator checks of pump are completed SAT	Normal-After-Start ❑ Recognizes Green light **OFF** ❑ Recognizes Red light **ON**	Sat/Unsat Sat/Unsat
4. Secures CCP-P1A and placed it in PTL Note: Securing the pump is critical, placing it in Pull-to-Lock is NOT critical Cue: If asked, tell the operator that placing the pump in Pull-to-Lock is required Role Play as required: As Operator in the field report: Local pump CCP-P1C conditions / parameters are normal	Secures the pump and places CCP-P1A Control Switch in Pull-to-Lock, if required ❑ Recognizes Green light **OFF** ❑ Recognizes Red light **OFF**	**Pass/Fail** Sat/Unsat/ N/A Sat/Unsat/ N/A
5. Responds to Annunciator 601132, SERVICE WATER TO RBCLC HT EXCH PRESS LOW Note: The Operator has 3 possible success paths. 1) Refers to N2-SOP-11 Flow chart, "Reopen non-essential header isolation valve(s)" 2) Alarm response, AN601132, "Verify outlets to Rx bldg, 2SWP*MOV19A and MOV19B open" 3) N2-OP-11, Sect. H.2.0, Verify the following valves open....." Note: Numerous additional annunciators will / may be alarming, including: 601246 RBCLC Trouble 602220 Recirc Pmp Motor Hi Temp 602322 RWCU Filter/Demin Inlet Temp Hi	Reviews alarm response for annunciator 601132 ❑ Recognizes 2SWP*MOV19B closed	Sat/Unsat Sat/Unsat
6. Attempts to reopen 2SWP*MOV19B	Places Control Switch for 2SWP*MOV19B in OPEN	**Pass/Fail**

Performance Steps	*Standard*	*Grade*
Note: Control Sw for 2SWP*MOV19B positioned to 'Open' deletes over-ride on the mov allowing it to reopen	❑ Recognizes valve Opens as evidenced by: • Green Light OFF • Red Light ON	Sat/Unsat
7. Notifies CRS that 2SWP*MOV19B has opened and that 2CCP-P1C is in service and 2CCP-P1A is secured.	CRS notified that 2SWP*MOV19B has opened and that 2CCP-P1C is in service and 2CCP-P1A is secured.	Sat/Unsat

TERMINATING CUE: 2CCP-P1C placed in service, 2CCP-P1A removed from service and SWP restored to the Reactor Building.

RECORD STOP TIME_____

Initial Conditions:

1. 2CCP-P1A is being removed from service for maintenance.
2. 2CCP-P1C is to be placed in service.
3. 2CCP-P1C has been vented, and is ready to be placed in service.
4. Another operator has confirmed normal operating indications in accordance with Subsection F.1.0.
5. Ask the operator for any questions.

Initiating cue:

"(Operator's name), Place 2CCP-P1C in service, and shutdown 2CCP-P1A per N2-OP-13.

NRC JPM S-7
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Overriding the Control Room Envelope ACU Cross-Divisional Operating Interlock

Revision: NRC 2009

Approvals:

_____ / _____
General Supervisor Operations Training (Designee) Date

_____ / _____
General Supervisor Operations (Designee) Date

_____ / _____
Configuration Control Date

Performer:_____(RO/SRO/AO)

Trainer/Evaluator:_____

Evaluation Method: __X____Perform _____Simulate

Evaluation Location: _____Plant _____X____Simulator

Expected Completion Time: 13 min. Time Critical Task: YES Alternate Path Task: NO

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature:_____ Date:_____

References:

1. N2-OP-53A, H.15.0, "Overriding the Control Room Envelope ACU Cross-Divisional Operating Interlock"
2. NUREG K/A 290003 K3.01 3.5/3.8

Tools and Equipment:

1. PA235 keys (Two)

Task Standard: Division I Control Room Envelope ACU Cross-Divisional Operating Interlocks (simulated) Overridden.

Time Critical due to the following note from the procedure N2-OP-53A:

"Actuation of the override switches is required to be completed within 13 minutes after a fire that has disabled the previously running Control Room Envelope ACUs to ensure Control Room Envelope temperature remains <90°F."

Initial Conditions:

1. Annunciator 849128 is in alarm, with Fire Zone 352 NW indicated.
2. The fire dept. has confirmed that a fire has developed in the west cable chase on control building 288'.
3. HVC*ACU1A and HVC*ACU2B are in service. Standby ACU's are available.
4. Instructor to ask operator for any questions.

Initiating Cues:

"(Operator's name), In accordance with N2-OP-53A Section 15.0, Override the Control Room Envelope ACU Cross-Divisional Operating Interlock. **This is a Time Critical JPM**."

Performance Steps	*Standard*	*Grade*
1. Provide repeat back of initiating cue. Evaluator Acknowledge repeat back providing correction if necessary.	Proper communications used for repeat back	Sat/Unsat
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure.	N2-OP-53A obtained. Precautions & limitations reviewed and section H 15.0 referenced.	Sat/Unsat

RECORD START TIME _____

Performance Steps	*Standard*	*Grade*
3. Procedure step 15.1.1 Check the following ACUs are available or in service 2HVC*ACU1B and 2HVC*ACU2B **Note:** There are no restrictions on use, ACUs are available	Verifies ACUs are not in PTL or have clearance tags or other restrictions on use.	Sat/Unsat
4. Procedure step 15.1.2 Verify HVC*ACU1A, Control Room AC Fan is in Pull-To-Lock.	HVC*ACU1A, Relay Room AC Fan control switch is positioned to, Pull-To-Lock at 2CEC*PNL870.	**Pass/Fail**
5. Procedure step 15.1.2 (continued) Verify HVC*ACU2A, Relay Room AC Fan is in Pull-To-Lock.	HVC*ACU2A, Relay Room AC Fan control switch is positioned to, Pull-To-Lock at 2CEC*PNL870.	**Pass/Fail**
6 Procedure step 15.1.3 Notify SM to declare 2HVC*ACU1A and 2HVC*ACU2A Inoperable. **Cue:** As SM acknowledge the ACUs are inoperable.	SM notified (T.S. are 3.7.2 and 3.7.3)	Sat/Unsat
7. Procedure step 15.1.4 Obtain SM permission to override interlocks. **Cue:** An SM grant permission. Note: the procedure has a SM sign off (initials) for this step, initial as SM as requested by candidate	SM permission obtained	Sat/Unsat
8. Procedure step 15.1.5 Override HVC*ACU1B Interlock	At P871, Inserts PA235 key and operates Appendix 'R' CR ACU1B Override SW, Places switch in OVERRIDE.	**Pass/Fail**
9. Procedure step 15.1.6 Verify HVC*ACU1B running At examiners discretion, inform candidate that 2 minutes have expired	At P871, verify red light lit for HVC*ACU1B.	Sat/Unsat

Performance Steps	*Standard*	*Grade*
9. Procedure step 15.1.7 Confirm proper operation of HVC*ACU1B.	After approximately 2 minutes, verify proper operation of HVC*ACU1B. Observe running indications (Red running light still illuminated).	Sat/Unsat
Procedure step 15.1.8 Place HVC*ACU1B Control Switch, Control Room AC Fan, in Normal-After-Start.	At P871, place HVC*ACU1B Control Switch in Normal-After-Start. (Red flag)	Sat/Unsat
10. Procedure step 15.1.9 Override HVC*ACU2B Interlock. **Cue:** If asked, act as verifier and acknowledge candidate action	At P871, Inserts PA235 key and operates Appendix 'R' CR ACU2B Override SW, Places switch in OVERRIDE. .	**Pass/Fail**
12. Procedure step 15.1.10 Verify HVC*ACU2B running	At P871, verify red light lit for HVC*ACU2B.	Sat/Unsat
13. Procedure step 15.1.11 Confirm proper operation of HVC*ACU2B. At examiners discretion, inform candidate that 2 minutes have expired	After approximately 2 minutes, verify proper operation of HVC*ACU2B. Observe running indications. (Red running light still illuminated).	Sat/Unsat
14. Procedure step 15.1.12 Place HVC*ACU2B Control Switch, Control Room AC Fan, in Normal-After-Start.	At P871, place HVC*ACU2B Control Switch in Normal-After-Start. (Red flag)	Sat/Unsat

Terminating Cue: Division II HVC*ACU operating interlocks defeated and ACU's operating.

RECORD STOP TIME _____

****TIME CRITICAL TASK – MUST BE COMPLETED IN 13 MINUTES**

Initial Conditions:

1. Annunciator 849128 is in alarm, with Fire Zone 352 NW indicated.
2. The fire dept. has confirmed that a fire has developed in the west cable chase on control building 288'.
3. HVC*ACU1A and HVC*ACU2B are in service. Standby ACU's are available.
4. Instructor to ask operator for any questions.

Initiating Cues:

"(Operator's name), In accordance with N2-OP-53A Section 15.0, Override the Control Room Envelope ACU Cross-Divisional Operating Interlock.
This is a Time Critical JPM."

NRC JPM S-8
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Inject with RCIC

Revision: NRC 2009

Approvals:

_____ / _____
General Supervisor Operations Training (Designee) Date

_____ / _____
General Supervisor Operations (Designee) Date

_____ / _____
Configuration Control Date

Performer:_____(RO/SRO/AO)

Trainer/Evaluator:_____

Evaluation Method: __X__ Perform _____ Simulate

Evaluation Location: _____ Plant _____X_____ Simulator

Expected Completion Time: Time Critical Task: NO Alternate Path Task: YES

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature:_____ Date:_____

Recommended Start Location: (Completion time based on the start location)

Unit 2 Simulator

NRC JPM S-8
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Simulator Set-up (if required):

RPV pressure > 300pisg
IO Override, Switch, page 34 of 36, P601-E51-S37-A Inop.

Directions to the Instructor/Evaluator:
Prior to performance of this JPM, obtain SM / CRS general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRS permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

With the exception of accessing panels, NO plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

Do not use the plant page to make plant announcements.

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - No other verification shall be demonstrated.

References:

1. N2-EOP-HC, Attachment 5
2. NUREG K/A 217000 A2.01 (3.8/3.7)

NRC JPM S-8
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Tools and Equipment:

1. None

Task Standard: RCIC injection manually aligned following failure to initiate upon demand with the arm-and-depress pushbutton and injecting to the RPV at approx. 400 to 600 gpm.

Initial Conditions:

1. Reactor pressure is as indicated on P603
2. The Main Turbine is tripped
3. RPV level is lowering
4. EOPs have been entered

Initiating Cues:

"(Operator's name), Use N2-EOP-HC, to initiate RCIC and inject into the RPV at rated RCIC flow"

Performance Steps	*Standard*	*Grade*
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary.*	Proper communications used for repeat back (GAP-OPS-O1/Operations Manual)	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure.	N2-EOP-HC obtained. Attachment 5, Section 5.0 referenced.	Sat/Unsat
•3. IF RCIC is not operating, Arm AND Depress RCIC MANUAL INITIATION pushbutton	Arms AND Depresses RCIC MANUAL INITIATION pushbutton	Sat/Unsat
NOTE: Recognizes failure of RCIC to initiate and continues to the Attachment 5 section 6.0 for manual initiation.		
If the candidate states that RCIC failed to initiate, repeat the initiating cue		
•4. Place 2ICS*FC101 in Manual AND set output to 20%	Places 2ICS*FC101 in Manual AND set output to 20%	**Pass/Fail**

Performance Steps	*Standard*	*Grade*
•5. Start the GLAND SEAL SYSTEM AIR COMPRESSOR	Starts the GLAND SEAL SYSTEM AIR COMPRESSOR	**Pass/Fail**
•6. Open ICS*MOV116, LUBE OIL COOLING WATER SUPPLY	Opens ICS*MOV116, LUBE OIL COOLING WATER SUPPLY	**Pass/Fail**
•7. Open ICS*MOV120, TURB STM SUPPLY VLV AND observe RCIC Turbine speed rising	Opens ICS*MOV120, TURB STM SUPPLY VLV AND observes RCIC Turbine speed rising	**Pass/Fail**
•8. Verify open ICS*MOV143, PMP MINIMUM FLOW TO SUPPRESSION POOL	Verifies open ICS*MOV143, PMP MINIMUM FLOW TO SUPPRESSION POOL	Sat/Unsat
•9. WHEN ICS*MOV120 is full open, open ICS*MOV126, PMP 1 DISCH TO REACTOR	WHEN ICS*MOV120 is full open, opens ICS*MOV126, PMP 1 DISCH TO REACTOR	**Pass/Fail**
•10. Slowly raise RCIC Turbine speed using the RCIC FLOW CONTROLLER in manual AND verify the following: • RCIC Turbine speed rises on E51-C002-M1 • RCIC pump discharge pressure rises on E51 R601	Slowly raises RCIC Turbine speed using the RCIC FLOW CONTROLLER in manual AND verifies the following: • RCIC Turbine speed rises on E51-C002-M1 • RCIC pump discharge pressure rises on E51 R601	**Pass/Fail**
•11. WHEN RCIC pump discharge pressure exceeds reactor pressure, verify the following: • ICS*V156, REACTOR INJECTION OUTBD CHECK VLV opens • ICS*V157, REACTOR INJECTION INBD CHECK VLV opens • RCIC injection flow rises on E51-R606	WHEN RCIC pump discharge pressure exceeds reactor pressure, verifies the following: • ICS*V156, REACTOR INJECTION OUTBD CHECK VLV opens • ICS*V157, REACTOR INJECTION INBD CHECK VLV opens • RCIC injection flow rises on E51-R606	Sat/Unsat

Performance Steps	*Standard*	*Grade*
•12. Verify ICS*MOV143, PMP MINIMUM FLOW TO SUPPRESSION POOL closes WHEN system flow exceeds 220 gpm.	Verifies ICS*MOV143, PMP MINIMUM FLOW TO SUPPRESSION POOL closes WHEN system flow exceeds 220 gpm.	**Pass/Fail**
•13. WHEN RCIC injection flow reaches 600 gpm, place the flow controller in Automatic	WHEN RCIC injection flow reaches 600 gpm, places the flow controller in Automatic	**Pass/Fail**

Terminating Cue: **RCIC manually aligned and injecting to the RPV between 400 and 600 gpm.**

RECORD STOP TIME _____

Initial Conditions:

1. Reactor pressure is as indicated on P603
2. The Main Turbine is tripped
3. RPV level is lowering
4. EOPs have been entered

Initiating Cues:

"(Operator's name), Use N2-EOP-HC, to initiate RCIC and inject into the RPV at rated RCIC flow"

NRC JPM P-1
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Vent the Scram Air Header Revision: NRC 2009

Approvals:

_____/_____
General Supervisor Date
Operations Training (Designee)

_____/_____
General Supervisor Date
Operations (Designee)

_____/_____
Configuration Control Date

Performer:_____(RO/SRO/AO)

Trainer/Evaluator:_____

Evaluation Method: _____Perform _____X____Simulate

Evaluation Location: __X____Plant _____Simulator

Expected Completion Time: 10 min. Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature:_____ Date:_____

NRC JPM P-1
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Recommended Start Location: (Completion time based on the start location)

RP Access bldg

Simulator Set-up (if required):

None

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRS general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRS permission.

Directions to Operators:
Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

With the exception of accessing panels, NO plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - (Additional/Concurrent/No other) verification shall be demonstrated.

References:

1. N2-EOP-6, Attachment 14, "Alternate Rod Insertions", Section 3.2.3
2. NUREG K/A: 295037 EA1.05 3.9/4.0

NRC JPM P-1
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Tools and Equipment:

1. L660 key for EOP box. (If procedure obtained locally)
2. All required PPE (Hard hat, gloves, safety glasses, hearing protection)

Task Standard: CRD Scram Air Header depressurized by locally isolating instrument air makeup and venting the air header.

Initial Conditions:

1. A failure to SCRAM has occurred.
2. All scram solenoid power lights are OFF.
3. Numerous scram valves have failed to open.
4. Division I and II ARI is NOT available to vent the Scram Air Header
5. Annunciator 603306 "CRD SCRAM VALVE PILOT AIR HEADER PRESSURE HIGH/LOW" is NOT in alarm
6. Instructor to ask operator for any questions.

Initiating Cues:

"(Operator's name), manually vent the Scram Air Header in accordance with EOP-6, Attachment 14"

Performance Steps	Standard	Grade
1. Provide repeat back of initiating cue. Evaluator Acknowledge repeat back providing correction if necessary.	Proper communications used for repeat back	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure.	N2-EOP-06 , Att 14 obtained. Precautions & limitations reviewed & section 3.2.3 referenced.	Sat/Unsat
Travel to Rx Bldg 261' el, North side		
3. Isolate instrument air makeup. **Cue:** Simulate 2RDS-V595 unlocked and shut.	On RB 261, by RDS flow control valves (on ARI solenoid valve rack), Break lock wire and rotate handwheel for 2RDS-V595 clockwise to the shut the valve.	**Pass/Fail**

Performance Steps	Standard	Grade
4. Vent air header. Open valve 2RDS-V43 Scram Air Header Drain Valve **Cue:** Simulate 2RDS-V43 open and air header depressurizing. (Loud air noise)	On RB 261, east end of 2NHS-MCC012, Open valve 2RDS-V43 Scram Air Header Drain Valve (rotate the handwheel for valve counter-clockwise to the open position.)	**Pass/Fail**
5. Ensure Annunciator 603306 in alarm. **Cue:** Annunciator 603306, "CRD SCRAM VALVE PILOT AIR HDR PRESSURE HIGH/LOW" is in alarm.	Calls Control Room, have personnel report status of Annunciator 603306.	Sat/Unsat
6. Check Control Rod positions **Cue:** All Control Rods are at 00, full in	Calls Control Room, have personnel report status of Control Rods	Sat/Unsat

Terminating Cue: CRD Scram Air Header isolated and vented

RECORD STOP TIME _____

Initial Conditions:

1. A failure to SCRAM has occurred.
2. All scram solenoid power lights are OFF.
3. Numerous scram valves have failed to open.
4. Division I and II ARI is NOT available to vent the Scram Air Header
5. Annunciator 603306 "CRD SCRAM VALVE PILOT AIR HEADER PRESSURE HIGH/LOW" is NOT in alarm
6. Instructor to ask operator for any questions.

Initiating Cues:

"(Operator's name), manually vent the Scram Air Header in accordance with EOP-6, Attachment 14"

NRC JPM P-2
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Total HCU Isolation for online maintenance Revision: NRC 2009

Task Number:

Approvals:

_____
General Supervisor Date
Operations Training (Designee)

NA EXAMINATION SECURITY
General Supervisor Date
Operations (Designee)

NA EXAMINATION SECURITY
Configuration Control Date

Performer:_____(RO/SRO)

Trainer/Evaluator:_____

Evaluation Method: _____Perform ___X___Simulate

Evaluation Location:___X__Plant _____Simulator

Expected Completion Time: 20 minutes Time Critical Task: NO Alternate Path Task: NO

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature:_____ Date:_____

Recommended Start Location:

Plant

Simulator Set-up (if required):

None

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRS general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRS permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

With the exception of accessing panels, NO plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - (Additional/Concurrent/No other) verification shall be demonstrated.

References:

1. N2-OP-30
2. NUREG K/A NUREG 1123 201001 A3.01 3.0/3.0

Tools and Equipment:

1. None

Task Standard:

HCU 22-55 is totally isolated for online maintenance.

Initial Conditions:

1. The plant is at rated conditions (100% power)
2. HCU 22-55 was declared inoperable and will be out of service for maintenance.
3. NO other HCUs are isolated

Initiating cue:

"(Operator's name), totally isolate HCU 22-55 for online maintenance per N2-OP-30, Section F.8.3" **AND** notify the Control Room when the HCU is isolated.
NOTE: I will role play as a plant electrician with a Volt Meter to check AC voltages on each plug and DCV Coils and perform the functions using the M&TE 4780 series box.

Performance Steps		*Standard*	*Grade*
1.	Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary*	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
RECORD START TIME ____			
2.	Obtain a copy of the reference procedure and review/utilize the correct section.	N2-OP-30 obtained. Section F.8.3 identified for use	Sat/Unsat
3.	IF an RDS Pump is in service, verify ≤79 HCUs are isolated.	Determines criteria is met	Sat/Unsat
4.	Locates HCU 22-55	HCU 22-55 located	**Pass/Fail**
5.	Close 2RDS*V101, (22-55) Insert Isolation.	Locates and closes valve	**Pass/Fail**
6.	Close 2RDS*V102, (22-55) Withdraw Isolation.	Locates and closes valve	**Pass/Fail**
7.	Close 2RDS-V113, (22-55) Charging Water Isolation.	Locates and closes valve	**Pass/Fail**

Performance Steps	*Standard*	*Grade*
8. Close 2RDS*V104 (22-55) Cooling Water Isolation.	Locates and closes valve	**Pass/Fail**
9. Close 2RDS-V105 (22-55). Exhaust Water Isolation	Locates and closes valve	**Pass/Fail**
10. Close 2RDS-V103 (22-55) Drive Water Isolation.	Locates and closes valve	**Pass/Fail**
11. Close 2RDS-V112, (22-55) Scram Discharge Isolation.	Locates and closes valve	**Pass/Fail**
12. Close 2RDS*V116, (22-55) Scram Pilot Air Isolation.	Locates and closes valve	**Pass/Fail**
13. At the electrical box place BOTH 2RDS*SW22-55A AND B, NORM-TEST-SRI toggle switches to TEST. **Cue:** I have plugged in M&TE 4780 series box and checked the AC voltage on each plug (steps 8.3.11 and 8.3.12).	BOTH 2RDS*SW22-55A AND B, NORM-TEST-SRI toggle switches placed in TEST	**Pass/Fail**
1. At 22-55, remove clip and lift Directional Control Valve (DCV) Coils from the following DCVs: • 2RDS*V120 • 2RDS*V121 • 2RDS*V122 • 2RDS*V123 **Cue:** I have performed steps 8.3.14 and 8.3.15	Clips removed and lifted from Directional Control Valve (DCV) Coils from the following DCVs: • 2RDS*V120 • 2RDS*V121 • 2RDS*V122 • 2RDS*V123	**Pass/Fail**

Performance Steps	*Standard*	*Grade*
15. Using thread lubricant, attach drain line to HCU at 2RDS*V107, (22-55) Accumulator Drain AND route to floor/equipment drain. (Lubricant use N/A for Swagelok Fittings)	At HCU 22-55 drain line attached at 2RDS*V107	Sat/Unsat
16. De-pressurize accumulator water side as follows: o Throttle open 2RDS-V107. o WHEN accumulator water pressure has been relieved, open 2RDS-V107. **CUE:** Accumulator is depressurized	Accumulator water side depressurized	**Pass/Fail**
17. IF the water does not stop draining from 2RDS-V107 THEN verify closed HCU boundary valves closed in Step F.8.3.2 AND consult with SM to determine if work can continue. **CUE:** The water stops draining. **CUE:** I have performed steps 8.3.19, 8.3.20 and 8.3.21.	Water has drained per previous cue.	Sat/Unsat
20. Report to the Control Room that rod 22-55 is isolated for maintenance.	Reports rod 22-55 is isolated for maintenance.	Sat/Unsat

TERMINATING CUE: HCU 22-55 is isolated with cooling water maintained and charging rig has been disconnected.

RECORD STOP TIME_____

Initial Conditions:

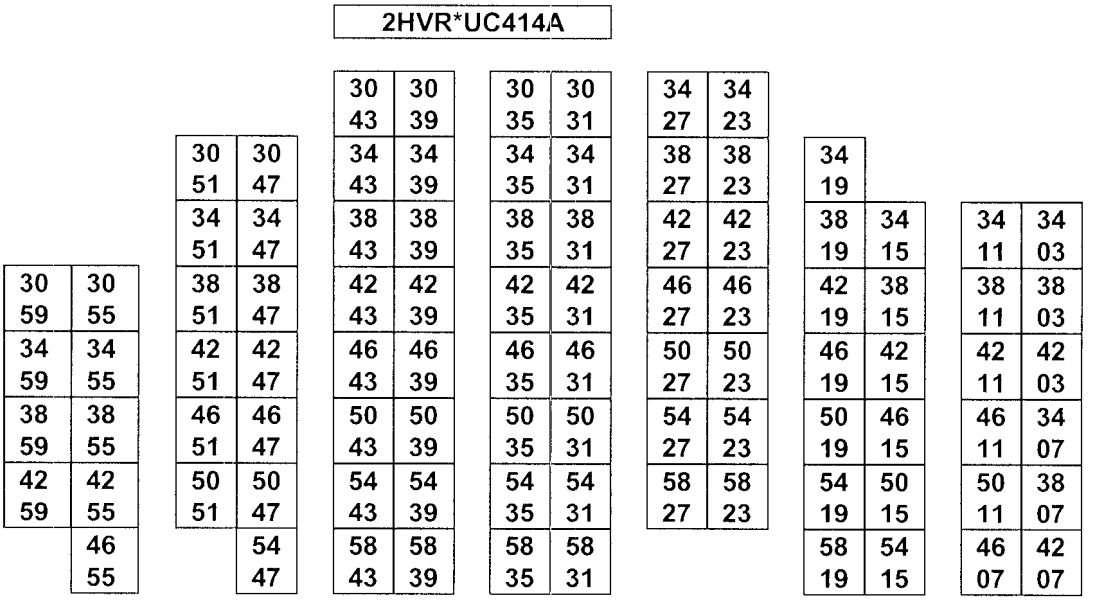
1. The plant is at rated conditions (100% power)
2. HCU 22-55 was declared inoperable and will be out of service for maintenance.
3. NO other HCUs are isolated

Initiating cue:

"(Operator's name), totally isolate HCU 22-55 for online maintenance per N2-OP-30, Section F.8.3" **AND** notify the Control Room when the HCU is isolated.
NOTE: I will role play as a plant electrician with a Volt Meter to check AC voltages on each plug and DCV Coils and perform the functions using the M&TE 4780 series box.

RDS HCU LOCATIONS

NORTH



SOUTH

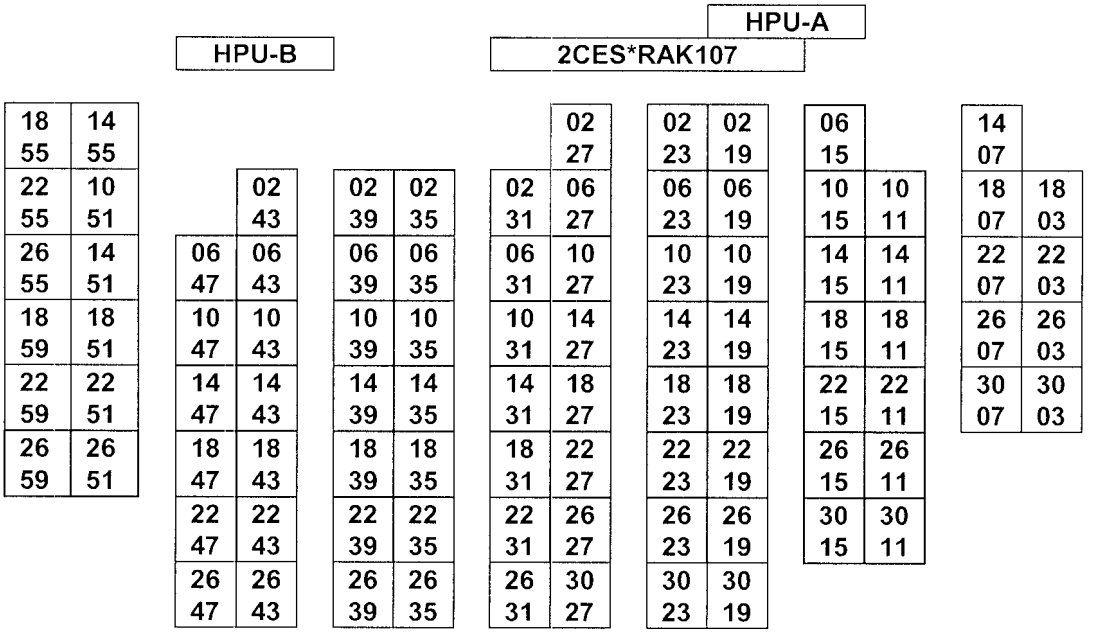


FIGURE 14-1

NRC JPM P-3
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Title: Perform the RCIC Operator Actions during Control Room Evacuation Revision: NRC 2009

Approvals:

_____/_____
General Supervisor Date
Operations Training (Designee)

_____/_____
General Supervisor Date
Operations (Designee)

_____/_____
Configuration Control Date

Performer:_____(RO/SRO/AO)

Trainer/Evaluator:_____

Evaluation Method: _____Perform _____Simulate

Evaluation Location: _____Plant _____Simulator

Expected Completion Time: 15 Min. Time Critical Task: NO Alternate Path Task: YES

Start Time: _____ Stop Time:_____ Completion Time:_____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature:_____ Date:_____

NRC JPM P-3
Constellation Energy Group
NINE MILE POINT UNIT 2
OPERATOR JOB PERFORMANCE MEASURE

Recommended Start Location: (Completion time based on the start location)

Main Control Room, 306 elev.

Simulator Set-up (if required):

N/A

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRS general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRS permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Auxiliary Operators. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary.

With the exception of accessing panels, NO plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas as **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
   - Self-verification shall be demonstrated.
3. During Training JPM:
   - Self-verification shall be demonstrated.
   - (Additional/Concurrent/No other) verification shall be demonstrated.

References:
1. N2-SOP-78 Flowchart
2. NUREG 1123, 295016, AK 2.01, 4.4/4.5, AK 2.02, 4.0/4.1

Tools and Equipment

None

Task Standard:

1. Switches at PNL415 (SW1-2CESA02 &10) placed in the "ACTUATED" position.
2. All transfer switches at the Remote Shutdown Panel placed in the "EMERG" position.
3. Pseudo LPCI initiated for level control.

Initial Conditions:

1. Control Room environmental conditions have degraded significantly
2. The SM has directed the Control Room evacuated.
3. Reactor pressure is 45 psig
4. Reactor water level is 145 inches
5. SWP*P1A, P1B, P1C, P1D, and P1F are in operation.
6. Instructor to ask operator for any questions.

Initiating Cues:

"(Operator's name), Perform the SOP-78 actions of the RCIC Reactor Operator for a Control Room Evacuation and restore RPV water level above 178 in..

Performance Steps	Standard	Grade
1. Provide repeat back of initiating cue. Evaluator Acknowledge repeat back providing correction if necessary.	Proper communications used for repeat back	Sat/Unsat
2. **RECORD START TIME _____**		
3. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	N2-SOP-78 Obtained Actions of the RCIC Room Operator on SOP flowchart referenced	Sat/Unsat

Performance Steps	Standard	Grade
Note: Access within panel 2CES*PNL415 will be simulated.		
4. In the West Cable Chase, CB306, near panel 2CES*PNL415 obtains key from red lock box to unlock and access panel 2CES*PNL415 and Positions switches SW1-2CESA10 and SW1-2CESA02 to the "ACTUATED" Position. **Cue:** Switch SW1-2CESA10 in "ACTUATED" position Switch SW1-2CESA02 in "ACTUATED" position	In the West Cable Chase, CB306, at panel 2CES*PNL415 opened and switches SW1-2CESA10 and 02 positioned to the "ACTUATED" position.	**Pass/Fail**
5. Travel to the Remote Shutdown Panel, then at the panel: Verify control switch for 2ICS*MOV122 in OPEN.	Travel to the Remote Shutdown Panel room and enter Verifies control switch for 2ICS*MOV122 in OPEN.	Sat/Unsat
6. IF RCIC ISOLATION seal-in white lights are lit, reset using keylock switches. **Cue:** Isolation light are lighted **Cue:** Isolation lights are extinguished	Verifies RCIC ISOLATION seal-in white lights are lit. Resets isolation using keylocks	Sat/Unsat
7. IF RCIC INITIATION seal-in white light is lit, reset using pushbutton. **Cue**: Initiation light is lighted **Cue**: Initiation light is extinguished	Verifies RCIC INITIATION seal-in white light is lit. Resets the initiation using pushbutton.	Sat/Unsat
8. Places all (19 total) Division 1 and Division 2 Transfer switches to the EMERG position. Operator must obtain key from red key box on wall adjacent to the RSS Panel to operate the transfer switches	Positions All Division 1 and Division 2 Transfer switches to the EMERG position. **Note:** These switches do not capture the key	**Pass/Fail**

Performance Steps	Standard	Grade
Cue: As the operator simulates positioning transfer switches to the EMERG position, provide cue that the switch has been repositioned.		
9. Verify RCIC Flow controller, 2RSS*FI106 in AUTO / 600 gpm. **Cue**: As you see it	Flow controller, 2RSS*FI106 in AUTO / verified controller switch in AUTO set at 600 gpm.	Sat/Unsat
10. Initiate RCIC by arming AND depressing the Manual Initiation pushbutton.	Initiates RCIC by arming AND depressing the Manual Initiation pushbutton.	Sat/Unsat
11. Verify the following: • Initiation seal-in reset white light ON • ICS*MOV120 opens • Turbine speed rises • GOV valve intermediate • ICS*MOV126 opens • Flow rises to AND controls at 600 gpm **Cue:** Notify Candidate that RCIC fails to initiate	Candidates acknowledges/Determines RCIC fails	Sat/Unsat
12. Determines pseudo-LPCI is required and continues in N2-SOP-78 at point B.	Transitions to N2-SOP-78 at point B Pseudo-LPCI	**Pass/Fail**
13. Verify: o 2RHS*MOV2A - Closed o 2RHS*MOV1A – Open o 2RHS*MOV30A - Open	Observes and verifies o 2RHS*MOV2A - Closed o 2RHS*MOV1A – Open o 2RHS*MOV30A - Open	Sat/Unsat
14. Pushes and releases SDC A ISOL RESET pushbutton	SDC A ISOL RESET pushbutton depressed and released	**Pass/Fail**
15. Starts RHS*P1A and immediately	Starts RHS*P1A and immediately throttles	**Pass/Fail**

Performance Steps	Standard	Grade
throttles open 2RHS*MOV38A and verifies >800 gpm flow **Cue:** P1A starts MOV 38A throttles open and flow is >800 gpm.	open 2RHS*MOV38A and verifies >800 gpm flow	
16. Opens four ADS Valves to lower reactor pressure. **Note:** Operator may skip this step because reactor pressure is already 45 psig and well below RHS injection pressure. **Cue:** Green lights remain lighted Note: SRV indication will not indicate open valve indication at pressures less than approx 300 psig **Cue:** Inform the candidate that you will act as the First Responding Reactor Operator	Opens four ADS Valves to lower reactor pressure.	Sat/Unsat
17. Directs the first responding Reactor Operator to place breaker 2EHS*MCC103-20C to OFF Note: the above breaker is for the min-flow valve 2RHS*MOV4A **Cue:** Notify candidate that 2EHS*MCC103-20C has been placed in OFF	Breaker 2EHS*MCC103-20C placed to OFF	Sat/Unsat
18. Verifies reactor pressure <350 psig, throttles open 2RHS*MOV40A to establish RHR Flow and restore RPV water level >175 in. **Cue:** Notify candidate RHR flow is increasing and that water level is 175 inches and rising.	2RHS*MOV40A throttled open to establish RHR Flow and RPV water level rising.	**Pass/Fail**
19. Directs the first responding Reactor Operator to disable HPCS by:	Directs the first responding Reactor Operator to disable HPCS	Sat/Unsat

Performance Steps	Standard	Grade
o At ENS*SWG102 remove the closing fuses from cubicle 4, breaker 102-2, HP CORE SPRAY 2CSH*P1 o At ENS*SWG102 trip 2CSH*P1 at cubicle 4, breaker 102-2, HP CORE SPRAY o Verify the breaker is OPEN **Cue:** Notify candidate the breaker is OPEN and that you will continue to perform your portion of the SOP-78 flowchart		
20. Establishes SWP flow less then 7400 gpm Through the RHS Heat Exchanger. **Cue:** SWP Flow is established through the RHS Heat Exchanger less than 7400 gpm	SWP Flow is established through the RHS Heat Exchanger less than 7400 gpm	Sat/Unsat
21. Throttles closed 2RHS*MOV40A to lower RHR Flow and maintain RPV water level <195 in. **Cue:** Notify candidate RHR Level is rising and that water level is 195 inches and stable.	RHS Flow throttled to lower flow and maintain RPV water level <195 in.	**Pass/Fail**

Terminating Cue: **Switches at PNL415 (SW1-2CESA02 &10) placed in the "ACTUATED" position. All transfer switches at the RSS panel placed in the "EMERG" position. RHR lined up in for injection and RPV water level restored above 178 inches using a Pseudo LPCI lineup.**

RECORD STOP TIME _____

Initial Conditions:

1. Control Room environmental conditions have degraded significantly
2. The SM has directed the Control Room evacuated.
3. Reactor pressure is 45 psig
4. Reactor water level is 145 inches
5. SWP*P1A, P1B, P1C, P1D, and P1F are in operation.
6. Instructor to ask operator for any questions.

Initiating Cues:

"(Operator's name), Perform the SOP-78 actions of the RCIC Reactor Operator for a Control Room Evacuation and restore RPV water level above 178 in..

Facility: **Nine Mile Point 2** Scenario No.: **NRC-01** Op-Test No.: **August 2009**

Examiners: _____ Operators: _____

Initial Conditions: Simulator IC-194

1. Reactor Power ~50%
2. All equipment is operable

Turnover:

1. Reactor Power is approx. 50% and a power ascension is in progress
2. All equipment is operable
3. Currently in N2-OP-101A at step E.5.16.2
4. The second feedwater pump (B) must be placed in service IAW N2-OP-3 Section E.5.0. The third Condensate and Condensate Booster pumps are in service. The Heater Drain pumps are in recirc. The field actions are complete and the "B" feedwater pump is warmed up.
5. Once the feedwater pump is in service, continue the startup IAW N2-OP-101A and N2-OP-101D
6. After Reactor power reaches 55%, balance feedwater pump flows, then continue the power ascension

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N (BOP) N (SRO)	Place the Second Feedwater Pump (B) in service **N2-OP-3 Condensate and Feedwater Sys, Sect. E.5.0**
2	N/A	R (SRO) R (RO)	Continue startup by pulling control rods **N2-OP-101A, Plant Startup**
3	RR10A RR12A	I (RO) I (SRO) TS (SRO)	"A" Recirc pump flow control valve drifts open (TS) **N2-SOP-08, Unplanned Power Changes**
4	RC10A	C (BOP) C (SRO) TS (SRO)	RCIC spuriously starts and injects (TS) **N2-OP-35, RCIC**
5	ED04A	C (BOP) C (SRO)	4 KV SWGR 11 trips which causes Condensate Pumps A and C to loose power. The B Condensate Pump will trip on over-current which results in a total loss of feedwater and reactor scram. **N2-SOP-101C, Reactor Scram EOP-RPV**
6	MS04	M (ALL)	Steam Leak in Drywell , HPCS injection valve 2CSH-MOV107 fails closed, Loss of High pressure Feed **(EOP-RPV, EOP-PC)**
7		C (BOP) C (RO) C (SRO)	4 ADS SRVs fail to open Low Pressure Core Spray pump trips

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

Facility: **Nine Mile Point 2**	Scenario No.: **NRC-01**	Op-Test No.: **August 2009**
TARGET QUANTITATIVE ATTRIBUTES **(PER SCENARIO; SEE SECTION D.5.d)**	ACTUAL ATTRIBUTES	
1. Total malfunctions (5-8) **Events 3,4,5,6,7**	6	
2. Malfunctions after EOP entry (1-2) **Events 7**	2	
3. Abnormal events (2-4) **Events 3, 4, 5**	3	
4. Major transients (1-2) **Event 6**	1	
5. EOPs entered/requiring substantive actions (1-2) **Events 6, 7 EOP-RPV, EOP-PC**	2	
6. EOP contingencies requiring substantive actions (0-2) **Event 8 EOP-C2**	1	
7. Critical tasks (2-3)	2	
CRITICAL TASK DESCRIPTIONS: **CT-1.0 Initiate Emergency Depressurization to lower RPV pressure to within the capability of the low pressure ECCS systems** **CT-2.0 Open sufficient SRVs to permit low pressure ECCS injection and restoration of RPV level .**		

SCENARIO SUMMARY

The plant is operating at ~50%. The crew will continue the Startup by placing the second feedwater pump in service IAW N2-OP-3. After the feed pump is started, the RO will continue the startup by raising power via control rods.

Once the second feed pump is in service, the "A" Recirc pump flow control valve drifts open. The crew identifies this, and will lockup the "A" RR FCV to terminate the transient. The SRO will have to evaluate the RR loop flow mismatch to determine the TS required actions (TS actions depend upon how quickly the crew notices the controller failure).

Then, RCIC will spuriously start. This will require the BOP to manually trip RCIC and the SRO enters Technical Specifications LCO 3.5.3.A – RCIC system inoperable. Once the RCIC event has been addressed, the 4 KV SWGR 11 trips which causes Condensate Pumps A and C to lose power. The B Condensate Pump will trip on over-current which results in a total loss of feedwater and reactor scram. The operators may manually initiate the scram as RPV level lowers. As RPV water level lowers the HPCS injection valve 2CSH-MOV107 fails closed resulting in a loss of HPCS.

A small break LOCA occurs as level slowly lowers. RCIC & HPCS are not available due to previous events. This is a loss of all high pressure feed capability with the exception of CRD which will not be sufficient to prevent RPV level from lowering. The crew must then blowdown (**Critical Task**) to restore RPV water level with the low pressure systems.

When the crew attempts to blowdown only 3 of the required 7 ADS valves will open. The crew must open additional SRVs to assure depressurization (**Critical Task**). This will allow low pressure ECCS pump injection and RPV level recovery. Level recovery will also be challenged due to a trip of the Low Pressure Core Spray pump.

The scenario ends when the Blowdown has been completed and RPV level restored and maintained above the top of active fuel (-14 inches).

NMP SIMULATOR SCENARIO

NRC Scenario 1

CONTINUE POWER ASCENSION, PLACE SECOND FEEDWATER PUMP IN SERVICE, CONTINUE POWER ASCENSION, RRP A FLOW CONTROL VALVE DRIFT, RCIC SPURIOUSLY STARTS, SWGR 11 TRIPS, LOSS OF HIGH PRSSURE INJECTION, SMALL BREAK LOCA, LPCS FAILURE, SRV FAILURES DURING BLOWDOWN

PREPARER	_____	DATE _____
VALIDATED	_____	DATE _____
GEN SUPERVISOR OPS TRAINING	_____	DATE_____
OPERATIONS MANAGER	NA Exam Security	DATE _____
CONFIGURATION CONTROL	NA Exam Security	DATE _____

SCENARIO SUMMARY

Length: 1.5 hours

The plant is operating at ~50%. The crew will continue the Startup by placing the second feedwater pump in service IAW N2-OP-3. After the feed pump is started, the RO will continue the startup by raising power via control rods.

Once the second feed pump is in service, the "A" Recirc pump flow control valve drifts open. The crew identifies this, and will lockup the "A" RR FCV to terminate the transient. The SRO will have to evaluate the RR loop flow mismatch to determine the TS required actions (TS actions depend upon how quickly the crew notices the controller failure).

Then, RCIC will spuriously start. This will require the BOP to manually trip RCIC and the SRO enters Technical Specifications LCO 3.5.3.A – RCIC system inoperable. Once the RCIC event has been addressed, the 4 KV SWGR 11 trips which causes Condensate Pumps A and C to lose power. The B Condensate Pump will trip on over-current which results in a total loss of feedwater and reactor scram. The operators may manually initiate the scram as RPV level lowers. As RPV water level lowers the HPCS injection valve 2CSH-MOV107 fails closed resulting in a loss of HPCS.

A small break LOCA occurs as level slowly lowers. RCIC & HPCS are not available due to previous events. This is a loss of all high pressure feed capability with the exception of CRD which will not be sufficient to prevent RPV level from lowering. The crew must then blowdown (**Critical Task**) to restore RPV water level with the low pressure systems.

When the crew attempts to blowdown only 3 of the required 7 ADS valves will open. The crew must open additional SRVs to assure depressurization (**Critical Task**). This will allow low pressure ECCS pump injection and RPV level recovery. Level recovery will also be challenged due to a trip of the Low Pressure Core Spray pump.

The scenario ends when the blowdown has been completed and RPV level restored and maintained above the top of active fuel (-14 inches).

Major Procedures: N2-SOP-08, N2-SOP-101A & C, N2-SOP-06, N2-EOP-RPV, N2-EOP-PC, N2-EOP-C2

Termination Criteria: The scenario ends when Emergency Depressurization has been completed and RPV level restored and maintained above the top of active fuel (-14 inches).

I. SIMULATOR SET UP

A. IC Number: IC-197, Appox 50% power; with n09scen1.bat loaded, Ensure RWM is functional when IC is snapped.

B. Presets/Trigger Assignments

1. Malfunctions:

a. CS04, CSH*MOV107 Fails to Open, TRUE	Inserted
b. CS06, LPCS Pump Trip, Motor Fault, TRUE	Inserted
c. AD08A, ADS vlv N2 Supply severed (PSV121), TRUE	Inserted
d. AD08B, ADS vlv N2 Supply severed (PSV127), TRUE	Inserted
e. AD08C, ADS vlv N2 Supply severed (PSV126), TRUE	Inserted
f. AD08D, ADS vlv N2 Supply severed (PSV137), TRUE	Inserted
g. RC10, RCIC Spurious Initiation, TRUE	TRG 3
h. ED04A, 4.16Kv Bus Fault, TRUE	TRG 4
i. FW01B, CNM-P1B trip, motor Fault, 7s Delay, TRUE	TRG 4
j. RR20, RCS Loop Rupture, 1%, 240s Ramp,	TRG 5

2. Remotes:

a. RR10A, HYV17A Drift, True	TRG 2
b. RR12A, HYV17A Drift Position, 45%	TRG 2

3. Overrides:

a. None

4. Annunciators:

a. None

C. Equipment Out of Service

a. None

D. Support Documentation

a. N2-OP-101A marked up to indicate at step E.5.16.2
b. Reactivity Maneuver Instruction for the control rod withdrawal to 55%, authorizing continuous rod withdrawal.
c. N2-OP-3, marked up to step E.5.19

E. Miscellaneous

a. Event Trigger 5, rrlwrn1420<110, ((RPV lvl <110"))

b. Place 8 Condensate Demineralizers in service, Remotes FW01A--H

II. **SHIFT TURNOVER INFORMATION**

OFF GOING SHIFT: ☐ N ■ D DATE: _____

PART I: To be performed by the oncoming Operator before assuming the shift.

- Control Panel Walk down (all panels) (SM, CRS, STA, CRO, CRE)

PART II: To be reviewed by the oncoming Operator before assuming the shift.

Shift Supervisor Log (SM, CRS, STA)
- CRO Log (CRO)

Lit Control Room Annunciators (SM, CRS, STA, CRO, CRE)

- Shift Turnover Checklist (ALL)
- LCO Status (SM, CRS, STA)
- Computer Alarm Summary (CRO)

Evolutions/General Information/Equipment Status:

1. Reactor Power is approx. 50% and a power ascension is in progress
2. All equipment is operable
3. Currently in N2-OP-101A at step E.5.16.2
4. In preparation for starting the "B" Feed Pump, N2-OP-3, is completed up to step E.5.19.

PART III: Remarks/Planned Evolutions:

1. The second feedwater pump (B) must be placed in service IAW N2-OP-3 Section E.5.0. The third Condensate and Condensate Booster pumps are in service. The Heater Drain pumps are pumping forward. The field actions for starting Feedwater Pump 'B' are complete and the pump is warmed up. A Plant Operator is standing by at the pump for the pump start.
2. Once the feedwater pump is in service, continue the startup IAW N2-OP-101A and N2-OP-101D using the provided RMI, Step 3
3. After Reactor power reaches 55%, balance feedwater pump flows, then continue the power ascension IAW RMI Step 4.
4. Plant Operators have placed 8 Condensate Demineralizers in service, in preparation for the second RFP start. The ninth is not available because the bed is to be rebuilt later this shift.

PART IV: To be reviewed/accomplished shortly after assuming the shift:

- Review new Clearances (SM)
- Shift Crew Composition (SM/CRS)
- Test Control Annunciators (CRE)

TITLE	NAME	TITLE	NAME

SRO			
ATC RO			
BOP RO			

A. CRITICAL TASKS:

CT-1.0 Given a loss of all high pressure injection and RPV level at TAF, the crew will initiate RPV Blowdown (enter EOP-C2) BEFORE level reaches MSCWL, -39 inches (Fig Z, -55" @ 800 psig).

CT-2.0 The crew will recognize that insufficient ADS SRVs have opened to depressurize the RPV and opens additional SRVs to permit low pressure ECCS injection and restoration of RPV level.

CREW

Crew, walks down the panels conducts shift brief

EVENT 1

Start the Second Reactor Feedwater Pump IAW N2 -OP-3

SRO

Directs placing the B Feedwater Pump in service IAW N2-OP-3.

BOP –

Begins at Step E.5.19

- Start 2FWS-P1B, REACTOR FW PMP 1B, by placing the control switch to Normal-After-START.
- Confirm 2FWR-FV2B, P1B RECIRC VLV, opens.
- When 2FWR-FV2B is > 15% open, confirm 2FWS-P1B starts.
- Using 2CNM-FI68B, FD WTR P1B FLOW meter, confirm 2FWS-P1B flow is approximately 8,000 gpm.
- Directs the PO to:
    - Place the Auxiliary Lube Oil Pump control switch to AUTO AND verify the pump stops.
    - Close 2FWS-V25B, Feed Pump Warm Up Valve.

NOTE:

When the Feed Pump is started the UPS alarms will momentarily alarm as the pump start lowers bus voltage and causes a momentary transfer to the UPS batteries then immediately back as the voltage recovers.

ROLE PLAY:

As field operator, respond to request and report back after 1 minute that the tasks are complete

SIM BOOTH:

Insert remote FW03B – FW Aux Lube Oil Pump B – Off, when requested

Raises reactor power to 55% before balancing feed pump flows (Event 2).

EVENT 2

SRO

Continue Power Increase with Control Rods	Directs continuation of startup IAW N2-OP-101A until power reaches 55% using control rods. Authorizes continuous rod withdrawal IAW the RMI.
NOTE: An OPRM annunciator may alarm during these conditions, this is a normal part of this evolution. If it occurs the crew is expected to halt the startup and go to the back panel to check the OPRM/APRM status.	**RO** • Pulls control rods IAW Pull Sheet Continuously monitors reactor power indication. • Records control rod withdrawal on the correct control rod sequence sheets • Stops rod pulls when power is at 55% and informs CRS. **SRO** • Directs BOP to balance feedwater pump flows • Once the flows are balance directs RO to continue rod withdrawal **BOP** • Monitors control rod withdrawals IAW Pull Sheet • Confirms RO control rod selection • Continuously monitors reactor plant indication, including power level and RPV water level.
Event 1 (Continued)	**NOTE:** The following steps are to balance feedwater pump flows

EXAMINER NOTE:

Feedwater Pump Flows are balanced after reactor power is raised to 55%. These steps may be observed after the power rise if the examiner desires.

It is anticipated that the BOP operator will perform this task. If the BOP is balancing flows when EVENT 3 is begun it will insure that the RO responds to the Recirc FCV Failure.

- Throttle open 2FWS-LV10B, Feedwater Pump 1B Level Control Valve, by using the OPEN detent pushbutton.
- Verify 2FWS-LV10A closes as 2FWS-LV10B slowly opens.
- Continue to slowly open 2FWS-LV10B UNTIL the input signal AND output signal read the same on the 2FWS-LV10B controller.
- Place 2FWS-LV10B in Auto by depressing the Auto (A) pushbutton.
- To operate with equal 2FWS-LV10 positions:
  - Determine the positions of the two operating 2FWS-LV10 valves as indicated on the controllers.
  - MAY Slowly adjust the bias tape setting on either of the controllers until the valve positions are equal. (Normally not required)
- Informs CRS that pump flows are balanced

RO

- Monitors Reactor power, pressure and level

EVENT 3

"A" Recirc pump flow control valve drifts open

CREW

Responds to the following alarms and indications

EXAMINER NOTE:

Insert this malfunction when directed by the Chief Examiner.

SIM BOOTH

Insert remotes:

RR12A – FCV A Drift Position, 45%, TRG 2

RR10A – FCV A Drift - TRG 2

Examiner Note

The Recirc loop flow mismatch may not exceed limits, the amount of mismatch will depend upon the timing of the candidate's recognition and actions to stop the FCV drift

Hyd Power Unit 'A' Shuts down, Hydraulically locks the 'A' RCS Flow control. Valve AN602101 RECIRC FCV A HYD INOPERABLE

- *603442 – Control Rod Out Block*
- 'A' Rx Recirc Flow Cont Vlv slowly moves in the open direction, Recirc Loop 'A' flow rises, Loop flow mismatch develops
- Rx Power rises

SRO

- Directs entry and actions IAW N2-SOP-8
- Diagnoses power change is due to Recirc FCV Motion
- Directs the RO to Depress the HPU Shutdown PB for A HPU
- Directs the BOP to Close the Loop A Hydraulic Fluid Outside Isolation
- Refers to TS 3.4.1.B.1 – recognizes loop flow mismatch exceeds limits – flows must be matched within 2 hours
- Contacts Reactor Engineering
- Contacts Work Week Manager
- Contacts GSO
- Conducts a crew brief

RO

- Diagnoses power change is due to Recirc FCV Motion
- Enters N2-SOP-08
- Depresses the HPU Shutdown PB for

AN602103 RECIRC FCV A BACKUP HYD INOP *AN602105 RECIRC FCV A MOTION INHIBIT*	A HPU • Closes Loop 'A' hydraulic fluid outside isolation valve. **BOP** • Continues to monitor reactor power, pressure and level • Suspends balancing feedwater flows while transient is in progress.
EVENT 4 RCIC Spurious Initiation **SIM BOOTH:** **Insert Malf:** **RC10, RCIC Spurious Initiation TRG 3**	**CREW** Responds to the following alarms/ indications. • *RCIC initiation white light illuminates* • *RCIC turbine comes up to speed* • *RCIC discharge press rises to > RPV*

press

- *RCIC flow stabilizes at 600 gpm*
- *AN601347 RCIC INJECT VLV NOT FULLY CLOSED.*

SRO

- After verifying that RCIC was not initiated due to a valid signal directs the BOP to trip RCIC IAW ARP 601347
- MAY direct operator to attempt to reset the initiation.
- Contacts Maintenance/Work Control/I & C
- Refers to Tech Spec 3.5.3, Verifies HPCS is Operable – Action A.1 Restore in 14 days - Action A.2
- Conducts Crew brief

ROLE PLAY: If contacted as Maintenance/Work Control/I & C, etc. respond as directed.

EXAMINER NOTE:

When the RCIC trip PB is depressed MOV 126 will close. The MOV may be closed first and then the RCIC Trip PB depressed. This at the discretion of the CRS

BOP

- Secures RCIC injection as directed by the SRO and the annunciator response by depressing the turbine trip PB. (depresses RCIC trip PB and verifies ICS*MOV126 closes)

NOTE:

The Main Turbine will trip in 4 min. with the injection valve open.

- Identifies and reports RCIC tripped

RO

Monitors reactor power, pressure and level

EXAMINER NOTE:

May insert next event once RCIC is secured and TS are addressed

EVENT 5

4 KV SWGR, 2NNS-SWG11 bus fault. When SWG11 trips, SWG12 also de-energizes. These switchgears, losing power causes Condensate Pumps A and C to lose power.

The B Condensate Pump will trip on over-current which results in a total loss of feedwater and

CREW

Responds to the following alarms indications

- *2NNS-SWG11 de-energizes—Loads lost*
  2CNM-P1A, Cond Pmp 'A'
  2HDL-P1A, Htr Drn Pmp 'A'

eventually reactor scram.

SIM BOOTH:

Insert malfs

ED04A – 4.16 KV SWGR-11	**TRG 4**
FW01B – CMN-P1B trip, 7sec delay	**TRG 4**

Examiner Note:

RPV level may lower to auto scram setpoint (159.3")before the manual scram is directed

2RCS-MG1A, Recirc MG set 'A'
2CCS-P1A, TBCLCW Pmp 'A'

- *2NNS-SWG12 de-energizes—Loads lost*
  2CNM-P1C, Cond Pmp 'C'
  2CCS-P1B, TBCLCW Pmp 'C'
  2HDL-P1C, Htr Drn Pmp 'C'
  2CCP-P1A, RBCLCW Pmp 'A'
- *AN852507 4kv Bus NNS 011 Under Voltage*
- *AN852508 4kv Bus NNS 11/12/13 Electrical Fault*
- T=7seconds 2CNM-P1B, Cond Pmp 'B' trips on motor fault
- *AN851511COND PMP 1A/1B/1C AUTO TRIP FAIL TO START*
- *AN851521 COND PMP 1A/1B/1C MOTOR ELECT FAULT*
- *Diagnoses loss of Feedwater.*

SRO

- Diagnoses Loss of feedwater and directs a reactor scram
- Enters and Directs actions IAW EOP-RPV due to RPV level low
- Directs entry into SOP-101C-Reactor Scram
- Pressure band 800 – 1000 psig using EHC
- Level Band 160" – 200"

RO

- MAY Manually SCRAM the Reactor by placing the mode switch in "SHUTDOWN".
- Enters N2-SOP-101C
  - Reports RPV level, pressure, APRMs downscale and "all rods in".
  - Reports all Condensate pumps tripped
- Reports RPV level is continuing to lower

BOP

- Monitors BOP equipment
- Controls RPV pressure at 800 – 1000 psig using EHC

EVENTS 6 and 7

Steam Leak in Drywell.

Leak is triggered when RPV level lowers to 110 inches wide range level indication

HPCS injection valve 2CSH-MOV107 fails closed.
Note: Malfunction is Preset

CREW

- Recognizes Increasing DW Pressure/Temperature
- Recognizes loss of all High Pressure Feed with the exception of CRD

SIM BOOTH

If a Plant Operator is dispatched to the RCIC room to locally reset the RCIC turbine, wait 5 minutes then report that the RCIC turbine will not reset

SRO

- Enters EOP-PC when Drywell Pressure exceeds 1.68 psig and Re-enters EOP-RPV on High DW pressure.
- Acknowledges report that HPCS injection valve failed to open
- May direct sending a PO to manually open the valve.
- May Direct Suppression Chamber Spray IAW EOP-6 Att.22. determines adequate core cooling exists.
- May direct restart of DW Cooling IAW EOP-6 Att.24
- If SP Pressure exceeds 10 psig then continues in PCP leg and Directs Drywell Spray.
- As level continues to lower:
- Refers to Alternate Injection System list (Detail E2) and may direct Maximizing CRD Flow and SLS injection IAW OP-36A, Section H.1)
- Directs Inhibiting ADS

- Determines that 2 or more subsystems are lined up (all LPCI is available)
- Waits until level lowers to TAF (-14inches) then continues in EOP-RPV
- Before level lowers to (-39 inches) directs an RPV Blowdown, EOP-C2 **(Critical Task 1.0)**
- Enters EOP-C2 RPV Blowdown

SRO (cont)

- Determines Rx will stay shut down without Boron
- Determines DW press is greater than 1.68
- Determines that ECCS systems are necessary for core cooling
- Verifies Suppression Pool level is above 192 ft
- Directs 7 ADS Valves open

EVENT 8

Only 3 ADS SRVs open when RPV Blowdown is attempted

Note: Malfunction is Preset

- When informed that only 3 ADS valves opened when the blowdown was attempted, Directs the operator to open additional SRVs until a total of 7 are open allowing Low pressure ECCS to inject to RPV and recover level >TAF

  (Critical Task 2.0)

- Directs restoring RPV level with LP ECCS to a band of 160" to 200"

Examiner Note:

LPCS trips upon receiving a start signal on motor fault. Malfunction is preset

ROLE PLAY:

If sent to manually open HPCS injection valve report that the hand-wheel cannot be engaged.

RO

- Reports that HPCS failed to inject because injection valve failed to open
- May send a PO to manually open the valve.
- Recognizes and reports trip of LPCS
- When directed maximizes CRD flow
- Places Suppression Chamber Spray in service IAW EOP-6 Att.22:
  - Open SWP*MOV90A (B), RHR H/X SVCE WTR INLET VLV

RO Cont.

- Verify closed RHS*MOV24A (B), LPCI INJECTION VLV
- Verify running RHS*P1A (B) PMP
- Open RHS*MOV33A, OUTLET TO SUPPR POOL SPRAY
- Verify ≥450 gpm on SUPPR SPRAY HEADER FLOW.
- (*2RHS*FI64A*)

- Performs additional actions as directed by CRS for balance of plant requirements

- If directed places RHS in Drywell Sprays IAW EOP-6 Att.22:
  - Open RHS*MOV15B, OUTLET TO DRYWELL SPRAY
  - Open RHS*MOV25B, OUTLET TO DRYWELL SPRAY
  - Verify closed, RHS*MOV4B, PMP 1B MINIMUM FLOW VLV
  - Verify approximately 7450 gpm Spray Header flow.
  - Verify open SWP*MOV90B, HEAT EXCHANGER 1B SVCE WTR INLET VLV

BOP

- Inhibits ADS using keylock switches.
- If directed, initiates SLS injection
- Attempts to Open seven (7) ADS/SRV's by arming and depressing both division ADS Manual Initiation pushbuttons at P601. **(CRITICAL TASK 1.0)**

- Recognizes and reports that only 3 ADS SRVs opened. Opens additional SRVs as directed to lower RPV pressure and allow injection of LP ECCS to recover RPV level. **(CRITICAL TASK 2.0)**

SIM BOOTH

If an operator is dispatched to defeat the Group 5 isolation interlocks per EOP-6 Att.30, Insert Malfunction **RH08, Group 5 Isolation Failure**

RO

- Restores RPV level is with LP ECCS to a band of 160" to 200")

Termination Criteria:

The scenario ends when the Blowdown has been completed and RPV level restored and maintained in the directed band

ATTACHMENT 7: REACTIVITY MANEUVER INSTRUCTION

Reason for Reactivity Maneuver **Reactor Startup** STEP: **3**

INITIAL CONDITIONS/STEP DESCRIPTION
RE presence required in the Control Room? Yes__√___ No_____ (check) Initial Conditions to be verified prior to initiation of step? Yes__√___ No_____ (check)

Parameter	Expected Range	Actual	Parameter	Expected Range	Actual
Rx Power	> 10%				

Description of Step:

1.) After upshift of pumps, maintain recirculation flow between 70 to 73 Mlb/hr
2.) Continue rod movement sheets in conjunction with upshift of recirculation pumps, follow A2UP
3.) After second RFP started; raise power by control rod withdrawal to 55% by APRM indication, hold power at 55% and load FWS level control valves per N2-OP-3, starting at E.5.25

Critical Parameters to be verified DURING Step:

Critical Parameter	Limit	Monitor	Frequency	Contingency
Rodline for Upshift	54 - 62%	RO	Immediately prior to upshift	Continue control rod withdrawals.
Proximity to Power Flow Map Exit Region	> 2% Power or Flow	RO	15 minutes	Insert Control Rods

Comments / Notes:

Step Prepared *R. D. Workth* / today Step Reviewed by: *Delta K. PrKay* / today
RE/STA Date RE/STA/SRO Date

Approval to perform Step *Max A. Gerr* / today Step Completed by: _____ / _____
Shift Manager Date SRO Date

ATTACHMENT 7: REACTIVITY MANEUVER INSTRUCTION

Reason for Reactivity Maneuver **Reactor Startup** STEP: 4

INITIAL CONDITIONS/STEP DESCRIPTION

RE presence required in the Control Room? Yes__√___ No_____ (check)

Initial Conditions to be verified prior to initiation of step? Yes__√___ No_____ (check)

Parameter	Expected Range	Actual	Parameter	Expected Range	Actual
Rx Power	> 10%				

Description of Step:

1.) After FWS Lv valves loaded, continure rod withdrawal following A2UP, raise power to 60% and hold for rod line calc
2.) After power at 60% and rod line calc completed raise power to 70% using RCS flow

Critical Parameters to be verified DURING Step:

Critical Parameter	Limit	Monitor	Frequency	Contingency
Proximity to Power Flow Map Exit Region	> 2% Power or Flow	RO	15 minutes	Insert Control Rods

Comments / Notes:

Step Prepared *R. D. Workith* / today RE/STA Date Step Reviewed by: *Delta K. PrKay* / today RE/STA/SRO Date

Approval to perform Step *Mar A. Gerr* / today Shift Manager Date Step Completed by: _____ / _____ SRO Date

Facility: **Nine Mile Point 2** Scenario No.: **NRC-02** Op-Test No.: **August 2009**

Examiners: _____ Operators: _____

Initial Conditions: Simulator IC-20

1. Reactor Power 100%

Turnover:

1. All equipment operable.
2. lower power to 95% and perform N2-OSP-RMC-W@001 Control Rod Movement and Position Verification.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R (RO) R (SRO)	Lower power to 95%
2	N/A	N (RO) N (SRO)	Perform N2-OSP-RMC-W@001 Control Rod Movement and Position Verification.
3	RD08	C (RO) C (SRO)	Control Rod fails overtravel check and will not recouple **N2-OP-30, H.2.0**
4	RR36A FW15	I (RO) I (SRO) TS (SRO)	RPS Pressure transmitter fails upscale causing RPS B trip system trip. FWLC Master controller fails as-is and level slowly rises. Requires manual FWLC control **T.S. 3.3.1.1, N2-SOP-6**
5	MS03 0.05%	C(SRO) TS (SRO)	High Drywell Leakage, indicated by annunciators and alarms. **T.S. 3.4.5**
6	RD17A RD20 10%	M (ALL)	Drywell pressure will slowly continue to rise and the crew will scram prior to DW pressure exceeding 1.68 psig. Several groups of rods do not insert, the crew will execute EOP-C5 to stabilize the plan. **N2-EOP-C5, N2-EOP-PC, RPV**
7	RR14A & B	C (RO) C (SRO)	SLS will fail to auto initiate and must be manually initiated
	N/A		Control rods will be manually driven per EOP-6 Attachment 14. **N2-EOP-06**

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

Facility: **Nine Mile Point 2**	Scenario No.: **NRC-02**	Op-Test No.: **August 2009**
TARGET QUANTITATIVE ATTRIBUTES **(PER SCENARIO; SEE SECTION D.5.d)**	ACTUAL ATTRIBUTES	
1. Total malfunctions (5-8) **Events 3,4,5,6,7**	5	
2. Malfunctions after EOP entry (1-2) **Events 7**	1	
3. Abnormal events (2-4) **Event 4, SOP 6,** **Event 5 – SOP-101C**	2	
4. Major transients (1-2) **Event 6**	1	
5. EOPs entered/requiring substantive actions (1-2) **Event 6 EOP-RPV, EOP-PC**	2	
6. EOP contingencies requiring substantive actions (0-2) **EOP-C5, EOP-6**	2	
7. Critical tasks (2-3)	2	
CRITICAL TASK DESCRIPTIONS: CT-1.0 Given a failure of the reactor to scram the crew will bypass the MSIV Low RPV water level isolation and the Off-Gas High Radiation isolation to maintain the Main Condenser as a heat sink. CT-2.0 Given the plant with a failure to scram, the crew will fully insert all control rods per N2-EOP-6 Attachment 14.		

SCENARIO SUMMARY

The scenario begins with the crew performing a power maneuver to lower power to 95% to facilitate performance of surveillance N2-OSP-RMC-W@001 Control Rod Movement and Position Verification. The second rod to be checked will fail its over-travel check; the crew will attempt to re-couple the rod, which will not re-couple. The crew will then fully insert the rod and disarm it.

An RPV pressure instrument failure with concurrent FWLC failure results in a trip of RPS B. RPV water level will slowly rise and the crew will take manual control of FWLC. The SRO will reference TS 3.3.1.1 for the failed pressure transmitter and place the appropriate channel in trip within 12 hours.

After manual FWLC is established and the appropriate Technical Specifications addressed drywell leakage will rise requiring entry into Technical Specifications. The increased drywell leakage was caused by a steam leak in the Drywell. This leak will increase in size causing a rise in drywell pressure until the crew is required to manually scram the reactor.

When the reactor is scrammed, control rod insertion only lowers power to about 15% and entry into EOP-C5 is required. The RRCS will fail to automatically initiate SLS. The crew must diagnose the failure and manually initiate SLS. Given a failure of the reactor to scram the crew will bypass the MSIV Low RPV water level isolation and the Off-Gas High Radiation isolation to maintain the Main Condenser as a heat sink **(Critical Task)**. After level and power are lowered the crew will fully insert all control rods per N2-EOP-6 Attachment 14 **(Critical Task)**.

Drywell parameters will be controlled with Suppression Chamber sprays and Primary Containment pressure will not exceed PSP.

Termination Criteria: The scenario ends when all the control rods are inserted and RPV level restored above 159.3 inches and Primary Containment parameters are under control.

NMP SIMULATOR SCENARIO

NRC Scenario 2

LOWER POWER FOR CONTROL ROD TEST, PERFORM CONTROL ROD MOVEMENT AND POSITION VERIFICATION, CONTROL ROD OVERTRAVEL, RPS TRANSMITTER FAILURE, HIGH DRYWELL LEAKAGE, LOCA WITH ATWS, SLS FAILURE

PREPARER	_____	DATE _____
VALIDATED	_____	DATE _____
GEN SUPERVISOR OPS TRAINING	_____	DATE_____
OPERATIONS MANAGER	NA Exam Security	DATE _____
CONFIGURATION CONTROL	NA Exam Security	DATE _____

SCENARIO SUMMARY

Length: 1.5 hours

Initial Power Level: 100% with greater than 100% Rod Line

The scenario begins with the crew performing a power maneuver to lower power to 95% to facilitate performance of surveillance N2-OSP-RMC-W@001 Control Rod Movement and Position Verification. The second rod to be checked will fail its over-travel check; the crew will attempt to re-couple the rod, which will not re-couple. The crew will then fully insert the rod and disarm it.

An RPV pressure instrument failure with concurrent FWLC failure results in a trip of RPS B. RPV water level will slowly rise and the crew will take manual control of FWLC. The SRO will reference TS 3.3.1.1 for failed pressure transmitter and place the appropriate channel in trip within 12 hours.

After manual FWLC is established and the appropriate Technical Specifications addressed drywell leakage will rise requiring entry into Technical Specifications. The increased drywell leakage was caused by a steam leak in the Drywell. This leak will increase in size causing a rise in drywell pressure until the crew is required to manually scram the reactor.

When the reactor is scrammed, control rod insertion only lowers power to about 15% and entry into EOP-C5 is required. The RRCS will fail to automatically initiate SLS. The crew must diagnose the failure and manually initiate SLS. Given a failure of the reactor to scram the crew will bypass the MSIV Low RPV water level isolation and the Off-Gas High Radiation isolation to maintain the Main Condenser as a heat sink **(Critical Task)**. After level and power are lowered the crew will fully insert all control rods per N2-EOP-6 Attachment 14 **(Critical Task)**.

Drywell parameters will be controlled using Suppression Chamber sprays and the Primary Containment pressure will not exceed PSP.

Major Procedures: N2-SOP-06, N2-SOP-101C, N2-EOP-RPV, N2-EOP-PC, N2-EOP-C5, N2-EOP-6

Termination Criteria: The scenario ends when all the control rods are inserted and RPV level restored above 159.3 inches and Primary Containment parameters are under control.

I. SIMULATOR SET UP

A. IC Number: IC-20,

B. Presets/Trigger Assignments

1. Malfunctions:

a. RD08, 22-59, Rod uncoupled	Inserted
b. RR36A, RX PT4B FAIL UPSCALE, TRUE	TRG 1
c. FW13, FW MSTR CNTRLR FAILS HIGH, 5s TD, TRUE	TRG 1
d. MS03, MSL Leak to DW, 0.05%, 5 min ramp, 1 min delay	TRG 2
e. CW06, CCP Leak to DW, 6%	TRG 2
f. RD17Z, Control Rods Fail to Insert, 14	TRG 3
g. RP02, RPS Failure	TRG 5
h. RR14A, RRCS ARI Failure	TRG 6
i. RR14B, RRCS ARI Failure	TRG 6
j. RP08A, 98 Sec Timer Failure Div 1, TRUE	Inserted
k. RP08B, 98 Sec Timer Failure Div 2, TRUE	Inserted
l. AN603109 RPS A SDV Hi Lvl Trip, OFF	TRG 10
m. AN603409 RPS A SDV Hi Lvl Trip, OFF	TRG 10

2. Remotes:

a. RD08, 22-59 HCU Isolation, Close	TRG 4
b. RC10, RCIC/MT Trip Defeat, DEFEATED	TRG 7
c. MS06A, Defeat L1 Iso of MSIVs, DEFEATED	TRG 8
d. MS06B, Defeat L1 Iso of MSIVs, DEFEATED	TRG 8
e. MS06C, Defeat L1 Iso of MSIVs, DEFEATED	TRG 8
f. MS06D, Defeat L1 Iso of MSIVs, DEFEATED	TRG 8

3. Overrides:

a. None

4. Annunciators:

a. None

C. Equipment Out of Service

a. None

D. Support Documentation

1. RMR describing power reduction to 95% power and return to 100% power
2. RMR describing Insertion to 00 of Control Rod 22-59
3. Working copy of N2-OSP-RMC-W@001 CONTROL ROD MOVEMENT & POSITION INDICATOR VERIFICATION filled -out, ready for immediate use.
4. OD-7 for this control rod pattern

E. Miscellaneous

1. ET09, Mode Sw in S/D, Delete malf CW06, [zdrps1d,dmf cw06]

II. **SHIFT TURNOVER INFORMATION**

OFF GOING SHIFT: □ N ■ D DATE: _____

PART I: To be performed by the oncoming Operator before assuming the shift.

- Control Panel Walk down (all panels) (SM, CRS, STA, CRO, CRE)

PART II: To be reviewed by the oncoming Operator before assuming the shift.

Shift Supervisor Log (SM, CRS, STA)
- CRO Log (CRO)

Lit Control Room Annunciators (SM, CRS, STA, CRO, CRE)
- Shift Turnover Checklist (ALL)
- LCO Status (SM, CRS, STA)
- Computer Alarm Summary (CRO)

Evolutions/General Information/Equipment Status:

1. Reactor Power is approx. 95% and a power ascension is in progress
2. All equipment is operable

PART III: Remarks/Planned Evolutions:

1. The crew is directed to lower power using recirculation flow to 95% to perform N2-OSP-RMC-W@001, Control Rod Movement and Position Verification.
2. The crew is directed to perform N2-OSP-RMC-W@001, Control Rod Movement and Position Verification.
3. After performing N2-OSP-RMC-W@001, Control Rod Movement and Position Verification return Reactor power to 100%. (Control Rod timing NOT required)

PART IV: To be reviewed/accomplished shortly after assuming the shift:

- Review new Clearances (SM)
- Shift Crew Composition (SM/CRS)
- Test Control Annunciators (CRE)

TITLE	NAME	TITLE	NAME
SRO			
ATC RO			
BOP RO			

A. CRITICAL TASKS:

CT-1.0 Given a failure of the reactor to scram the crew will Terminate and Prevent injection to the RPV, lower and control level <100 inches

CT-2.0 Given the plant with a failure to scram, the crew will fully insert all control rods per N2-EOP-6 Attachment 14.

EVENT 1

Lower Reactor power to 95% using recirculation flow.

CREW

Crew, walks down the panels conducts shift brief

SRO

- If not previously performed, conducts Shift and Reactivity Briefs.
- Directs power lowered to 95% per OP-101D in accordance with the RMI.

RO

- Lowers power to 95 % by reducing core flow
- Uses small manual FCV closure signals at one of the Recric FCV controllers, RCS*HYV17A&B, one FCV at a time.
- Moves RCS*HYV17A&B individually in the close direction, maintaining loop flow differential at a minimal.
- Monitors NIs and rate of power change.

BOP

- Monitors plant parameters to verify proper operations.
- Determines feedwater control maintains RPV water level.

EVENT 2

Perform N2-OSP-RMC-W@001 Control Rod Movement and Position Verification Surveillance Test

CREW

Demonstrates proper procedure use and peer checking when withdrawing control rods.

SRO

- Authorizes/directs performance of surveillance N2-OSP-RMC-W@001 (Control Rod timing NOT required)

RO

- Commences surveillance
- Exercises first control rod 18-59
  - Selects 18-59 to be tested.
  - Verify that there are NO Rod Insert Blocks present.
  - Record the control rod's initial position
  - Using the RMCS insert the control rod one notch.
  - Monitors nuclear instrumentation response.
  - Withdraws the control rod to its pre-test position
  - Monitors nuclear instrumentation response.
  - Confirm and record the red "Full Out" position light for the control rod is lit.
  - Confirm and record that the 4 rod display shows position "48".

RO Cont.

- Attempt to withdraw past position "48", by depressing AND holding BOTH the WITHDRAW AND the CONTINUOUS WITHDRAW pushbuttons.
- Confirm and record 603444 CONTROL ROD OVERTRAVEL does NOT alarm.
- Release the WITHDRAW AND the CONTINUOUS WITHDRAW pushbuttons.

- Repeats the steps for the second control rod for Control Rod 22-59
- Exercises the second rod Stops surveillance, Reports Failure of Over Travel check on control rod 22-59

Malfunction **RD08 22-59** becomes apparent when Annunciator 603444 Control Rod Over travel alarms

BOP

- Provides peer checks for selected control rods.

EVENT 3

Control Rod 22-59 Over Travel

CREW

Responds when RO reports Failure of Over Travel check on control rod 22-59

SRO

- Acknowledges report of uncoupled control rod

- Directs entry into N2-OP-30 for uncoupled control rod
- Informs reactor engineering, and Ops Management of current plant status
- Obtains Reactor Engineer approval to insert the control rod two notches and insert it to notches.
- Declares the control rod INOP
- Request RMI from Reactor Engineer to fully insert control rod 22-59
- Directs rod fully inserted and disarmed.

ROLE PLAY:

As Reactor Engineering give permission to insert **AND** withdraw the uncoupled control rod in an attempt to recouple the rod.

When an RMI is requested to insert control rod 22-59, direct the control rod be inserted and deliver the RMI to the Control Room.

NOTE: SRO should refer to TS 3.1.3 Condition/Action 'C'. Electrically or hydraulically disarm the affected control rod

RO

- Reviews N2-OP-30 section H.2.0
- Attempts to re-couple control rod by driving rod in two notches
- Withdraws rod to position 48
- Performs coupling check
- Informs SRO of failure to recouple the control rod

- Dispatches operator in field to disarm the affected control rod
- When directed fully insets control rod 22-59 prior to disarming.

CONSOLE OPERATOR

When dispatched to disarm the affected control rod activate remote by toggling remote:

RD08 22-59 HCU Isolation, Close TRG 4

THEN WAIT 2 minutes and report the rod as being disarmed.

EVENT 4

When directed by Lead Evaluator, **insert malfunctions:**

RR36A RX PT4B FAIL UPSCALE TRG 1

FW13 FW MASTER CONTRL FAIL HIGH TRG 1

RPS Pressure transmitter fails upscale causing RPS B trip system trip. FWLC Master controller fails as-is and level slowly rises. Requires manual FWLC control

ROLE PLAY:

When contacted as WEC/Maintenance/I & C report back that an RPS pressure transmitter apparently failed and that a technician is being sent into the Reactor Building to do a hands off inspection.

CREW

Responds to the following annunciators and indications:

- *603403 RPS B REACTOR PRESSURE HIGH TRIP*
- *603410 RPS B AUTO TRIP*
- *603139 REACTOR WATER LEVEL HIGH/LOW*

Diagnoses RPS Channel B trip and FWLC failure

Notifies SRO/Crew

SRO

- Acknowledges reports from RO
- Directs entry into N2-SOP-6 for mis-operation of FWLC
- Refers to TS 3.3.1.1 for failed pressure transmitter (Table 3.3.1.1-1 Function 3). Enters CONDITION A; REQUIRED ACTION A.1; place channel in trip with 12 hour COMPLETION TIME.
- Directs announcement to stop all maintenance and testing.
- Conducts brief.
- Notifies Operations and Plant Management
- Contacts WEC SRO for assistance and work planning

RO

- Monitors reactor power
- Verifies half scram by annunciators and RPS "B" scram solenoid lights de-energized.

BOP

- Identifies and reports mis-operation of FWLC to SRO
- Enters N2-SOP-6
- Places FWS-HIC1600 Master FWLC controller to MANUAL
- Stabilizes RPV water level between 160 to 200 inches (178 to 187 inches normal band)
- Reports RPS B trip due high pressure.

EVENT 5

High Drywell Leakage, indicated by annunciators and alarms.
T.S. 3.4.5 call

SIM BOOTH:

Insert Malf:

MS03, MSL Steam Leak, 0.05%	**TRG 2**
CW06, CCP Leak to DW, 6%	**TRG 2**

NOTE: Small CCP leak into DW is to bring in the DW Floor Drains Sump Alarms. This malfunction is deleted when the Mode Switch is placed in S/D.

CREW

Responds to the following:

Annunciator 851254, PROCESS AIRBORNE RADN MON ACTIVATED, alarms

Annunciator 873111, DRWL FLR DRN TANK 1 LEVEL HI-HI alarms

Annunciator 873115, DRWL FLR DRN LEAK RATE HIGH alarms

- Diagnose rising Drywell leak rates
- Notify SRO/Crew

Insert the following to insure failure to scram:

RD17Z, Control Rods Fail to Insert, TRG 3

ROLE PLAY:

When contacted as Work Week Manager (Maint, I & C, etc.) Respond as directed but delay.

SRO

- Directs BOP to verify leak rate on Drywell Equipment Drains Leakage Recorder
- Verify both Drywell Floor Drain Pumps running at P873.
- Verify Drywell Floor Drain Tank Level at P873.
- Verify leak rate on Drywell Floor Drains Leakage Recorder, 2DFRFR106 at P873.
- Verify Spent Fuel Pool level is NOT lowering
- Refer to T.S. 3.4.5 if leak rate is greater than 25 gpm.
- Declares a 4 hour LCO to determine the cause of the leakage and reduce it below the T.S. limits.
- Contact Work Week Manager to verify differentiator is working properly

RO

- Monitors reactor parameters

BOP

- Verifies leak rate on Drywell Equipment Drains Leakage Recorder
- Verifies both Drywell Floor Drain Pumps running at P873.
- Verifies Drywell Floor Drain Tank Level at P873.
- Verifies leak rate on Drywell Floor Drains Leakage Recorder, 2DFRFR106 at P873.

Role Play:

As PO directed to determine SFP level, report no change in level.

AFTER T.S. for Floor Drain Leakage is evaluated OR at Examiner Direction RAISE severity of malfunction MS03 from 0.05 to 10% on a 10 minute ramp

BOP cont'd

- Verifies Spent Fuel Pool level is NOT lowering

EVENTs 6 and 7

Drywell pressure will slowly continue to rise and the crew will scram prior to DW pressure exceeding 1.68 psig. Several groups of rods do not insert, the crew will execute EOP-C5 to stabilize the plant. SLS will fail to auto initiate

CREW

Recognizes Increasing DW Pressure/ Temperature

- *Drywell pressure hi Annunciator 603140*
- *Drywell pressure exceeds 1.68 psig*
- *Drywell pressure high activations occur:*
- *-ECCS systems start, Reactor Scram signal, NSSS isolations*

EVENTs 6 and 7

SRO

- Directs Reactor Scram
- Enters EOP-RPV, immediately exits to EOP-C5 Failure to Scram
- Directs Inhibit ADS
- Directs HPCS to PTL
- Directs RRCS initiated
- Directs MSIV and Off-Gas isolations defeated per EOP-6 Att. 10
- May direct Main Turbine / RCIC trip interlock defeated per EOP-6, Att 2, although this is NOT necessary since reactor power is within BPV capacity.

SRO Cont.

- Directs terminate and prevent at P603, make level band 50"- 80" after level lowers <100"
  (Critical Task 1)
- Directs terminate and prevent at P601
- Provides pressure band, 800 – 1000 psig.
- Directs RRCS initiated per EOP-6, Att. 13
- Directs Rods inserted, EOP-6, Att. 14
  (Critical Task 2)
- Enters EOP-PC (Primary Containment
- Directs a loop of RHS placed into Suppression Chamber Spray
- Acknowledges all rods in and scram report
- Exits C-5 returns to EOP-RPV

- Directs level restored to 160 inches to 200 inches.

RO

- Scrams Reactor by positioning Reactor Mode Switch in Shutdown
- Provides Scram Report
- Notifies SRO/Crew Failure to scram, all Rods NOT Full in

- When directed Initiates RRCS IAW EOP-6, Att. 13
  - by rotating arming collars and depressing push button on all 4 channels

- Controls RPV level by manipulating FWS controls (LV10s and or 55s) to lower RPV water level to <100 inches, resumes feeding RPV and maintains directed band
  (Critical Task 1)

- Inserts Control rods by executing EOP-6 Att. 14
  (Critical Task 2)

CONSOLE OPERATOR (EOP-6 Att. 14 Actions)

When directed to defeat RPS and ARI per EOP-6 Attachment 14, insert malfunctions:

RP02 RPS Failure,	**TRG 5**
RP14A Defeat ARI,	**TRG 6**
RP14B Defeat ARI,	**TRG 6**

Booth Operator:

AFTER RPS is reset, delete Malf. RD17Z

- Refers to Flow chart Determines to execute sections 3.3 & 3.5
  - 3.3 de-energizes ARI valves and Defeats the RPS interlocks, and resets RPS (resets the scram) NOTE: Candidate will call an additional operator to perform these actions
  - 3.5, Starts a second RDS pump, maximizes flow and pressure to the CRDM
  - Bypasses the RWM
  - Inserts control rods by

selecting a rod on the select matrix and continuously inserts rod to position 00. Follows Rod Insertion Sequence provided on pages 31 & 32 of 42

(Critical Task 2)

After control rod insertion has begun, and/or at the direction of the examiner,
Clear Annunciators 603109 and 603409 SDV level High Scram TRG 10

- After noting AN603109 and AN603409 have cleared, Inserts an additional scram by arming and depressing the scram push buttons

ALL RODS INSERT TO 00

- Reports all rods in, Provides Scram Report
- When directed returns RPV level to directed band (160 to 200 inches)

BOP

- Places HPCS in PTL

- Inhibits ADS by placing keys in key-lock operated switches and positioning them to Override

ROLE Play:
As operator tasked with inserting jumpers to defeat the MSIV isolation:
Use Remotes MS06A-D TRG 8

- Calls additional operator to install jumpers to defeat the MSIV isolation IAW EOP-6 Att, 10

- May call additional operator to defeat

ROLE Play:

As operator tasked with defeating the MT-RCIC trip

Use Remote RC10 **TRG 7**

ROLE PLAY; When requested, place SWP radiation monitors 23A or 23B in service:

Use Remotes:

RM01-040, SWP23A Final Value = 1E-9

RM02-040, SWP23A Online, ON

OR

RM01-041, SWP23B Final Value = 1E-9

RM02-041, SWP23B Online, ON

Termination Criteria:

The scenario ends when all the control rods are inserted and RPV level restored above 159.3 inches and Primary Containment parameters are under control.

the Main Turbine / RCIC trip interlock defeated per EOP-6, Att 2.

- When directed places the selected RHR Loop in Suppression Pool Spray
  - Directs placing SW Radiation SWP23A/B in service.
  - Opens SWP*MOV90A/B.
  - Verifies RHR pump B running.
  - Verifies RHS*MOV24A/B overridden closed.
  - Opens RHS*MOV33A/B to establish SC spray flow.

ATTACHMENT 7: REACTIVITY MANEUVER INSTRUCTION

Reason for Reactivity Maneuver **Rx Down Power & Return to Rated**

STEP: **1 of 1**

INITIAL CONDITIONS/STEP DESCRIPTION

RE presence required in the Control Room? Yes____ No__√_____ (check)

Initial Conditions to be verified prior to initiation of step? Yes__√___ No_____ (check)

Parameter	Expected Range	Actual
Rx Power	Approx 100%	

Parameter	Expected Range	Actual

Description of Step:

1.) IAW N2-OP-101D and using Rx Recirc Lower reactor power to 95% as indicated by APRM
2.) Perform N2-OSP-RMC-W@001
3.) Return to rated power using Rx Recirc, ramp rate limited to 2 per cent power per 60 minutes

Critical Parameters to be verified DURING Step:

Critical Parameter	Limit	Monitor	Frequency	Contingency
Rated Thermal Power	3467 MWth	RO	Continuous	Reduce RCS flow.

Comments / Notes:

Step Prepared R. D. Workth / today Step Reviewed by: Delta K. PrKay / today
RE/STA Date RE/STA/SRO Date

Approval to perform Step Max A. Gerr / today Step Completed by: _____ / _____
Shift Manager Date SRO Date

ATTACHMENT 7: REACTIVITY MANEUVER INSTRUCTION

Reason for Reactivity Maneuver **Insert Rod 22-59 to 00** STEP: **1 of 1**

INITIAL CONDITIONS/STEP DESCRIPTION
RE presence required in the Control Room? Yes____ No__√_____ (check) Initial Conditions to be verified prior to initiation of step? Yes__√___ No_____ (check)

Parameter	Expected Range	Actual	Parameter	Expected Range	Actual
Rx Power	Approx 95%				

Description of Step:

1.) Using attached rod maneuver sheet, AND using CONTINUOUS INSERT, Insert control rod 22-59 to position 00,
2.) Disarm control rod 22-59 IAW Tech Specs

Critical Parameters to be verified DURING Step:

Critical Parameter	Limit	Monitor	Frequency	Contingency
Rated Thermal Power	3467 MWth	RO	Continuous	Reduce RCS flow.

Comments / Notes:

Step Prepared *R. D. Workth* / today (RE/STA Date) Step Reviewed by: *Delta K. PrKay* / today (RE/STA/SRO Date)

Approval to perform Step *Mar A. Gerr* / today (Shift Manager Date) Step Completed by: _____ / _____ (SRO Date)

ATTACHMENT 7: NMP2 ROD MOVEMENT SHEET

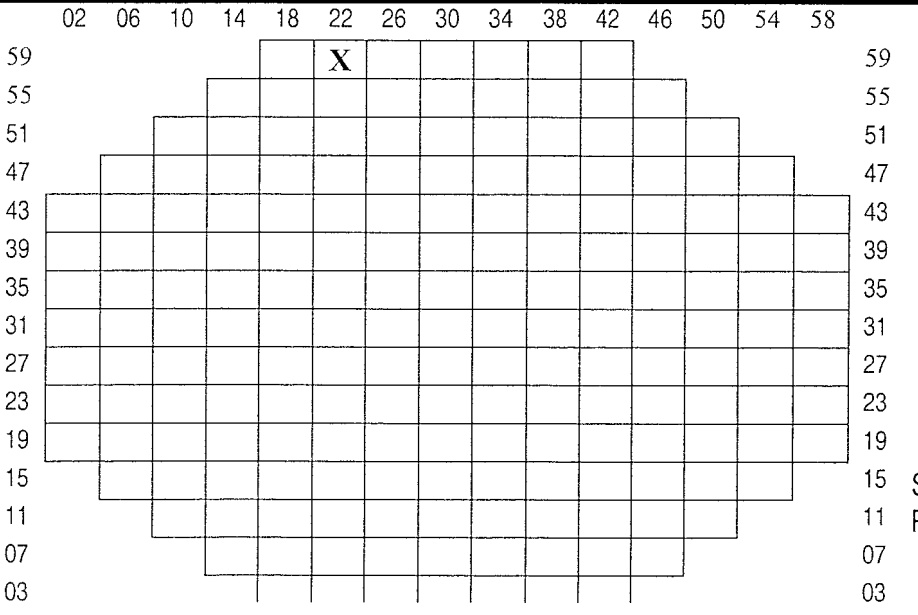
STEP: _____

PAGE: _____

FROM: AS Found	TO: Full In, Position 00

Control Rod	From	Initials / To	Move Complete	NI Check (as Expected)	Coupling Check	Full Out Light	Comments
22-59	AS Found	00					

Additional Qualified Individual confirms rod position by reselecting rods or by using OD-7 printout.	Initials



Prepared by: R. D. Workth Date _____

Verified by: Delta K. PrKay Date _____

Facility: **Nine Mile Point 2** Scenario No.: **NRC-03** Op-Test No.: **August 2009**

Examiners: _____ Operators: _____

Initial Conditions: Simulator IC-

1. Reactor Power 100%
2. 5 SW pumps in service

Turnover:

1. All equipment operable.
2. Perform RCIC Surveillance Test N2-OSP-ICS-Q@002

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N (SRO) N (BOP)	Line up Service Water to the RHR HX and start RHR in preparation to perform RCIC Surveillance Test N2-OSP-ICS-Q@002 **N2-OP-31** F.4.0 to start 5.0 to secure
2	OVRDs	C (BOP) C (SRO) TS (SRO)	RHR MOV 4A fails while placing pump in Suppression Pool Cooling TS 3.5.1.A.1. – 7 day LCO
3	RD04 22-11	C (RO) C (SRO) TS (SRO)	Control Rod 22-11 drift TS 3.1.3 – Control rod inoperable **N2-SOP-08**
4	TC12D	R (RO) R (SRO)	TCV #4 Fails Closed, Rapid Power Reduction **SOP-101D**
5	CU07	C (BOP) C (SRO) TS (SRO)	RWCU Leak causes RWCU isolation valves fail to automatically isolate. TS-3.3.6.1 **SOP-83, EOP-SC, N2-OP-37**
6	ED02B	C (ALL)	Loss of Condenser vacuum, Rx Scram, Reserve XFRMR "A" fault **SOP-9 – Loss of Condenser Vacuum**
7	RR20	M (ALL)	RECIRC Loop Break **EOP-RPV, EOP-PC**
8	CS02	I (BOP) I (SRO)	HPCS Fails to auto start on an initiation signal

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

Facility: **Nine Mile Point 2**	Scenario No.: **NRC-03**	Op-Test No.: **August 2009**
TARGET QUANTITATIVE ATTRIBUTES **(PER SCENARIO; SEE SECTION D.5.d)**	ACTUAL ATTRIBUTES	
1. Total malfunctions (5-8) **Events 2,3,5,6,7,8**	6	
2. Malfunctions after EOP entry (1-2) **Events 8**	1	
3. Abnormal events (2-4) **Event 3 –SOP-8, Event 4, SOP 101D, 4 –SOP-83, Event 5 – SOP-83, Event 6 -SOP-9,**	4	
4. Major transients (1-2) **Event 7**	1	
5. EOPs entered/requiring substantive actions (1-2) **Event 7, EOP-RPV, EOP-PC**	2	
6. EOP contingencies requiring substantive actions (0-2)	0	
7. Critical tasks (2-3)	2	
CRITICAL TASK DESCRIPTIONS: **CT-1.0 – Inject with HPCS manually prior to an RPV Blowdown requirement due to low RPV level** **CT-2.0 - Initiate drywell spray to maintain containment pressure below PSP**		

SCENARIO SUMMARY

While operating at rated power, the crew will prepare to perform RCIC full flow test surveillance. Service Water will be lined up to cool the RHR Heat Exchanger and an RHR Pump started for Suppression Pool Cooling. When RHR is initiated the RHR Minimum Flow Valve, MOV 4A, will fail to open and NOT auto close when flow is established. This will make RHR inoperable and the RCIC Test should be postponed while Technical Specifications are addressed.

When T.S. is entered for the RHR valve and the system lineup returned to normal Control Rod 22-11 will drift into the core. The crew will enter SOP-08 and disarm the control rod while the SRO will address TS. Then, the #4 TCV will fail closed causing the load limiter to open the #1 BPV. The crew must reduce power to close the Turbine Bypass Valve. When this has been diagnosed and the required actions completed, a leak will occur in the RWCU system and initiate a RWCU isolation. However the isolation valves will fail to automatically close requiring manually closing the valves. The crew will enter the appropriate Technical Specifications.

After the actions required for the Primary Containment isolation failure have been completed, condenser vacuum will begin to lower requiring a further power reduction and eventually a reactor scram. When the turbine trips a fault in the Reserve Transformer "A" will de-energize the Division 1 bus (ENS*SWG101) and prevents a fast transfer of 2NPS-SWG003 (black power) this results in a loss of numerous station electrical loads. Feedwater and Condensate in particular are disabled. Additionally, the Division 1 EDG will not close in on its bus which will result in a loss of DIV I ECCS. The "B" Condensate Pump will also trip resulting in a complete loss of Feedwater.

After the loss of power is diagnosed and the initial scram response completed, a recirc loop rupture will occur and the HPCS pump will fail to auto start and inject. The operators must initiate HPCS manually prior to an RPV Blowdown requirement occurring due to low RPV level (**Critical Task).** As containment parameters degrade, the crew must first initiate suppression chamber spray and then initiate drywell spray to maintain containment pressure below PSP (**Critical Task – DW Spray**).

Termination Criteria: RPV level is within160 to 200 inches and containment parameters are improving.

NMPC NMP SIMULATOR SCENARIO

NRC SCENARIO # 3

PLACE SERVICE WATER IN SERVICE COOLING THE RHR H/X, RHR MOV FAILURE, #4 TCV FAILURE, RWCU ISOLATION FAILURE, LOSS OF VACUUM, RESERVE TRANSFORMER "A" FAULT, AND LOCA WITH AUTO START FAILURE OF HPCS

PREPARER	_____	DATE _____
VALIDATED	_____	DATE _____
GEN SUPERVISOR OPS TRAINING	_____	DATE_____
OPERATIONS MANAGER	NA Exam Security	DATE _____
CONFIGURATION CONTROL	NA Exam Security	DATE _____

SCENARIO SUMMARY

Length: 90 minutes

SUMMARY

Initial Power Level: 100%

While operating at rated power, the crew will prepare to perform RCIC full flow test surveillance. Service Water will be lined up to cool the RHR Heat Exchanger and an RHR Pump started for Suppression Pool Cooling. When RHR is initiated the RHR Minimum Flow Valve, MOV 4A, will fail to open and NOT auto close when flow is established. This will make RHR inoperable and the RCIC Test should be postponed while Technical Specifications are addressed.

When T.S. is entered for the RHR valve and the system lineup returned to normal Control Rod 22-11 will drift into the core. The crew will enter SOP-08 and disarm the control rod while the SRO will address TS. Then, the #4 TCV will fail closed causing the load limiter to open the #1 BPV. The crew must reduce power to close the Turbine Bypass Valve. When this has been diagnosed and the required actions completed, a leak will occur in the RWCU system and initiate a RWCU isolation. However the isolation valves will fail to automatically close requiring manually closing the valves. The crew will enter the appropriate Technical Specifications.

After the actions required for the Primary Containment isolation failure have been completed, condenser vacuum will begin to lower requiring a further power reduction and eventually a reactor scram. When the turbine trips a fault in the Reserve Transformer "A" will de-energize the Division 1 bus (ENS*SWG101) and prevents a fast transfer of 2NPS-SWG003 (black power) this results in a loss of numerous station electrical loads. Feedwater and Condensate in particular are disabled. Additionally, the Division 1 EDG will not close in on its bus which will result in a loss of DIV I ECCS. The "B" Condensate Pump will also trip resulting in a complete loss of Feedwater.

After the loss of power is diagnosed and the initial scram response completed, a recirc loop rupture will occur and the HPCS pump will fail to auto start and inject. The operators must initiate HPCS manually prior to an RPV Blowdown requirement occurring due to low RPV level (**Critical Task).** As containment parameters degrade, the crew must first initiate suppression chamber spray and then initiate drywell spray to maintain containment pressure below PSP (**Critical Task – DW Spray**).

Termination Criteria: RPV level is within160 to 200 inches and containment parameters are improving.

I. SIMULATOR SET UP

A. IC Number: 20 or equivalent

B. Presets/Trigger Assignments

1. Malfunctions:

a.	CU08,	WCS Isolation failure, True	Inserted
b.	DG01A,	DG failure to start, True	Inserted
c.	CS02,	HPCS fails to auto start, True	Inserted
d.	TC12D,	Mn Turb Cntl Valve Failure Closed ('D'valve), True	TRG 2
e.	RD04-22-11,	Control Rod 22-11 drifts in, True	TRG 4
f.	MC01,	Mn Condenser Air In-leakage, 100%, 8 min ramp	TRG 5
g.	FW01B,	Condensate Pump Trip P1B, True, 10 sec Delay	TRG 6
h.	RR20,	RR Loop Rupture, 1.5%, 10 min ramp	TRG 7
i.	CU07,	WCS Leak Outside Cont, 15%, 0 Ramp	TRG 3

2. Remotes:

a.	ED11,	86-2SPRX01, 2RTX-XSR1A (RSV 'A') LO Relay, Tripped	TRG 6

3. Overrides:

a.	OVR-01A2DS132LO06011 RHR Pmp Min Flow MOV 4A Red, ON	Inserted
b.	OVR-01A2DS131LO06010 RHR Pmp Min Flow MOV 4A Green, OFF	Inserted

4. Annunciators:

a. None

C. Equipment Out of Service

1. None

D. Support Documentation

1. N2-OSP-ICS-Q@002, filled out such that candidates start section 8.2, step 8.2.2

E. Miscellaneous

1. Set Event Trigger #6, hzatcm20d<1.0, ((TSV shut)), this trigger will cause the 'B' Condensate pump to trip and RSV Transformer 'A' to trip and lockout de-energizing Div 1 Bus and no fast transfer for SWG001.
2. Start a 5th SWP pump, 2SWP*P1F

II. **SHIFT TURNOVER INFORMATION**

OFF GOING SHIFT: ■ N □ D DATE: _____

PART I: To be performed by the oncoming Operator before assuming the shift.

- Control Panel Walkdown (all panels) (SM, CRS, STA, CSO, CRE)

PART II: To be reviewed by the oncoming Operator before assuming the shift.

- Shift Manager Log (SM, CRS, STA)
- CSO Log (CSO)
- Lit Control Room Annunciators (SM, CRS, STA, CSO, CRE)
- Shift Turnover Checklist (ALL)
- LCO Status (SM, CRS, STA)
- Computer Alarm Summary (CSO)

Evolutions/General Information/Equipment Status:

- Reactor Power = 100%
- Load line >100%
- Complete surveillance N2-OSP-ICS-Q@002 NOTE the STA will record Suppression Pool temperatures as required to meet T.S. SR 3.6.2.1.1
- 5 SWP pumps are in service, additional flow needed to compensate for CCS HX fouling
- Equipment out of service, CCP Heat Exchanger, CCP-E1C

PART III: Remarks/Planned Evolutions:

- Perform N2-OSP-ICS-Q@002 – Section 8.2
- Use RHR Loop "A" for Suppression Pool Cooling

PART IV: To be reviewed/accomplished shortly after assuming the shift:

- Review new Clearances (SM)
- Shift Crew Composition (SM/CRS)
- Test Control Annunciators (CRE)

TITLE	NAME	TITLE	NAME
SM		CRE/OATC	
CRS		E	
STA		E	
CSO		Other	

III. PERFORMANCE OBJECTIVES

A. Critical Tasks:

CT-1.0 Given a failure of the high pressure injection systems, the crew will diagnose a HPCS failure and manually start and inject with HPCS prior to an RPV Blowdown requirement on low RPV level.

CT-2.0 Given a leak in the drywell with drywell temperatures and pressures rising, the crew will initiate drywell spray to maintain containment pressure below PSP

Allow no more than five minutes for the panel walkdown.

EVENT 1

Perform:

RCIC Surveillance Test N2-OSP-ICS-Q@002

Role Play: **When requested**, place SWP radiation monitors 23A in service:

Use Remotes:

RM02-040, SWP23A Online

RM01-040, SWP23A Final Value = 1E-9

EXAMINER NOTE: Annunciator 601539 ADS A LPCS/RHR A Permissive is expected alarm when RHR pump is placed in service

CREW

- Crew conducts a pre-brief, walks down the panels, and tests annunciators.
- SRO briefs the crew.
- Crew assumes the shift, continues normal power operation and makes preparation to perform RCIC Surveillance Test

SRO

- Directs performance of N2-OSP-ICS-Q@002, RCIC full flow test surveillance per section 8.2
- Direct Placing RHR Loop "A" in suppression pool cooling.
- Declares RHR loop selected for Suppression Pool Cooling inoperable

RO

Monitor plant parameters

BOP

- Obtains N2-OSP-ICS-Q@002 RCIC Pump and Valve Operability Test and System Integrity.
- Initiates RHR A in Suppression Pool cooling per N2-OP-31, Sect. F.4.0.
  - Directs placing SW Radiation Monitor, SWP23A in service.
  - Open SW90A
  - Throttle open SW33A

- Makes plant announcement for starting "A" RHR Pump.
- Start RHS*P1A
- Throttle open RHS*FV38A
- Monitor RHS*MOV4A

EVENT 2

RHR Minimum Flow Valve, MOV 4A, fails OPEN

ROLE PLAY: As Work Control, inform SRO to delay completion of the RCIC surveillance, until RHR minimum flow valve troubleshooting is completed.

ROLE PLAY: As a PO sent to manually close RHR Minimum Flow Valve, MOV 4A report that the valve will not close.

ROLE PLAY: As required, As Work Control, inform SRO that the Minimum Flow Valve circuit broken and applying an OPEN signal to the valve state that it will be necessary to remove the system for operation to troubleshoot further.

CREW

Diagnose failure of RHR Minimum Flow Valve, MOV 4A to CLOSE.

SRO

- Acknowledge report of valve failure.
- May direct dispatching a PO to manually close RHR Minimum Flow Valve, MOV 4A.
- Direct shutdown of the RHR pump due to Minimum Flow Valve failure
- Directs Work Week Manager to troubleshoot.
- Declares RHS Pump 1A inoperative
- Enters Tech. Specs. 3.5.1.A, 3.6.1.6.A, 3.6.2.3.A and 3.6.2.4.A a 7 day LCO
- Notifies Ops Management of RHR inoperability.

ROLE PLAY: As a PO sent to manually close RHR Minimum Flow Valve, MOV 4A report that the valve will not close.

If requested, shutdown SWP radiation monitor 23A:

Use Remotes:

RM02-040, SWP23A Offline

RM01-040, SWP23A Final Value = 0

RO

- Monitors plant parameters

BOP

- Reports and responds to failure of RHS Minimum Flow Valve.
- May direct a PO to manually close RHR Minimum Flow Valve, MOV 4A.
- Stops RHS*P1A(B), PMP 1A(B).
- Verifies open RHS*MOV8A, HEAT EXCHANGER 1A INLET BYPASS VLV THROTTLE.
- Closes SWP*MOV33A(B), HEAT EXCHANGER 1A(B) SVCE WTR OUTLET VLV THROTTLE.
- Closes SWP*MOV90A(B), HEAT EXCHANGER 1A(B) SVCE WTR INLET VLV.
- Calls RP to have Rad Monitor 2SWP-23A shut down

EVENT 3

Control rod 22-11 Drift In

When directed by the chief examiner insert:
Malfunction RD04-22-11, CR Drift In TRG 4

ROLE PLAY:

If contacted as Reactor Engineering notify the control room you will start an assessment and be down to the Control Room in a half an hour.

CREW

Responds to annunciator & indications

- *Control Rod 22-11 drifts in*
- *ANN 603443, CONTROL ROD DRIFT*
- *Rod Drift light on 22-11*

SRO

- Enters SOP-8 for drifting control rod, although this rod is drifting into the core lowering power.
- Directs action in N2-SOP-08 to insert drifting control rod.
- Notifies Reactor Engineering.
- Refers to TS 3.1.3 and declares control rod inoperable
- May direct disarming control rod IAW N2-OP-30
- Conducts a crew brief

RO

- Identifies and confirms Control rod 22-11 is drifting on four rod and full core displays and RWM
- May enter SOP-08 and takes the following actions:
  - Selects control rod and INSERTS to position 00
  - Releases INSERT PB

- Refers to N2-OP-95A, F.3.0; Rod Drift Indication, to reset Drift alarm.
  - Reset drifting rod indication by pressing the Rod Drift RESET pushbutton at the Rod Select Module
  - If the RWM was used to confirm the rod drift return the RWM to normal.

BOP

- Monitors BOP equipment
- When directed sends a PO to the HCU to disarm the control rod IAW N2-OP-30

ROLE PLAY:

If contacted as a PO respond as directed and proceed to the HCU.

EVENT 4

When directed by the examiner insert

Malfunction:
TC12D Mn Turb Cntl Vlv Failure Closed
TRG 2

CREW

Acknowledge and report:

- *TCV #4 Fails closed*
- *RPV pressure rises*
- *TBVs open to control pressure*
- *Annunciator 851150, TURBINE BYPASS VALVE OPEN alarms*
- *Annunciator 851160, TURBINE BYPASS VALVE 89A THRU 89E OUT TEMP HIGH alarms*

NOTE:
SRO may direct entry into SOP-23 EHC Failures, however, there are no actions directed out of SOP-23 addressing this type of condition.

NOTE:
As power is lowered the Load Limiting light will go out making diagnoses difficult.

NOTE:
As power is lowered the Load Limiting light will go out making diagnoses difficult.

SRO

- Diagnose TCV failure by Load Limit light and Turbine BPV open.
- Direct entry into SOP-8, Unplanned Power Changes
- Direct a power reduction IAW N2-SOP-101D, Rapid Power Reduction to within license limit
- Directs further power reduction to close the TBVs per N2-SOP-101D, using Cram Rods

RO

- Monitor reactor pressure, power and other plant parameters
- Lowers reactor power to less than the license limit, 3467 MWth using Recirc Flow, IAW N2-SOP-101D, Rapid Power Reduction.
- When directed uses RMCS to insert Cram Rods until TBVs close

BOP

- Diagnoses TCV #4 failed fully shut by position indication, TBVs Open, and Turbine Load Limit Light illuminated.
- Monitors Turbine parameters and Turbine Bypass Valve positions,

- Reports when all TBVs are closed.

EVENT 4

When TCV failure is diagnosed and directed by the chief examiner insert:
Malfunction:

CU07, RWCU Leak Outside Cont. **TRG 3**

Malfunction CU08 RWCU Isolation Failure becomes apparent

CREW

Acknowledges and Reports the following:

Annunciators:

- *601731, DIVISION I RRCS RWCU ISOLATED*
- *851254, PROCESS AIRBORNE RADN MON ACTIVATED*
- *602313, RWCU DIFFERENTIAL FLOW HIGH*
- *602320, RWCU DIFF FLOW TIMER BYPASS*
- *601732, DIVISION II RRCS RWCU ISOLATED*
- *602314, RWCU PUMP 1A/1B AUTO TRIP*
- ***RWCU Inbd (2WCS*MOV102) & Otbd (2WCS*MOV112) Cnmt Isolation valves fail to close in response to Isolation signal.***

SRO

- Acknowledges Annunciator reports
- Determines RWCU should have isolated
- Directs entry in SOP-83 Containment Isolation Failure/Reset

- Responds to rad monitoring alarms and/or Sec Cont. pressure by entering N2-EOP-SC
- Directs verifying Secondary Containment isolated
- Directs RWCU isolated
- Enters TS 3.3.6.1, Primary Containment Isolation Instrumentation
- Informs Chemistry dept of the RWCU trip

RO

- Monitors plant parameters
- Diagnoses Reactor Building pressure becoming positive

BOP

- Determine that RWCU delta flow timers are timing
- Reports Annunciator, 602313 RWCU DIFFERENTIAL FLOW HIGH
- Determines that RWCU should have isolated and failed to do so, reports same to SRO
- Isolates RWCU by closing the inbd (2WCS*MOV102) and outbd (2WCS*MOV112) containment isolation valves.
- Verify RWCU pumps trip when first containment isolation valve moves off open position
- Because RDS System is supplying seal water, throttles open WCS-

MOV110 Filter/demin Bypass vlv

EVENT 5 6

Loss of Condenser Vacuum requiring a Reactor Scram

When directed insert:
Malfunction:
MC01, Mn Condenser Air Inleakage, 100%.
8 min ramp **TRG 5**

CREW

Acknowledge and report:

- *Condenser air in-leakage ramps up*
- *Off Gas Flows rise*
- *Annunciator 851358, TURBINE CNSR A/B/C VACUUM LOW alarms*

When the Turbine Trips

Diagnose failure of Reserve Transformer "A" and failure of EGS*EG1 (Div 1 DG) resulting in a loss of power to Division 1.

- Diagnose loss of condensate pump

Note:
The rate of condenser vacuum loss may preclude a power reduction

SRO

- Directs entry into SOP-9 Loss of Condenser Vacuum
- May attempt lowering power IAW N2-SOP-101D as necessary to attempt to maintain condenser vacuum

(If cram rods were not inserted earlier SRO may direct inserting cram rods).

- When it is determined vacuum can NOT be recovered directs reactor scram and turbine trip.
- Enters EOP-RPV on low RPV level
- Directs RPV level band of 160-200 inches using preferred systems (RCIC)
- Directs RPV pressure controlled between 800 to 1000 psig using TBVs (until they isolate).

- When MSIVs close, directs pressure controlled using SRVs
- Directs RCIC initiated

NOTE: When the turbine trips:
Reserve Transformer "A" faults and Condensate pump P1B Trips
These Malfunctions are queued off the Turbine Stop Valves closing (Turbine trip)

'B' Condensate Pump trips on motor fault

Loss of Feed and Condensate system

Loss of 2NPS-SWG001

*EGS*EG1 fails to start results in Loss of 2ENS*SWG101 (Div1ECCS systems)*

RO

- As Directed lowers power IAW N2-SOP-101D in an attempt to maintain vacuum

(If not inserted earlier RO may be directed to insert cram rods).

- When directed places Mode Switch to Shutdown.
- Performs scram report
- Enters SOP-101C – Reactor scram
- Reports RPV level, pressure, APRMs downscale and "all rods in".
- Maintains level > 160 inches
- Diagnoses loss of condensate and feedwater.
- Announces RPV water levels
- Continues in SOP-101C, Reactor Scram
- As time permits inserts SRM and IRM detectors.

Automatic Responses:

- Main Turbine trip at 22.1 inches Hg Vac
- MSIV closure at 8.5 inches Hg Vac
- Turbine Bypass Valve closure at 7.0 inches Hg Vac

BOP

- Monitors Condenser Vacuum
- Enters N2-SOP-09, Loss of Condenser Vacuum
- Determines proper operation of:
  - SJAE

- Off-Gas
- Condenser Auxiliaries

- When directed trips the turbine per SOP-21.
- Controls RPV pressure at 800 – 1000 psig using EHC
- Verifies Div II non-essential loads isolated.
- When MSIVs close shifts pressure control to SRVs
- Maintains RPV level with RCIC

NOTE:

When pneumatics are lost to Div I ADS the pressure control range should be adjusted to 500 -- 1000 psig.

EVENTS 6 & 7
Recirc Loop Rupture

When Directed by Lead Examiner
Insert Malfunction:
RR Loop Rupture, 1.5%, 10 min ramp TRG 7

Malfunction CS02, HPCS Fails to Auto Start, becomes apparent

CREW

- Identifies rising DW pressure
- Identify LOCA has occurred

When RPV water levels continues to lower and/or on High Drywell Pressure diagnose failure of HPCS to start.

SRO

- Identify EOP entry conditions as necessary (DW press $\geq$ 1.68 psig)
- Re-enter EOP-RPV control
- Enter EOP-PC control
- Directs suppression chamber spray be initiated

SRO Cont'd

- Directs Drywell Spray be initiated when suppression chamber pressure is greater than or equal to 10 psig. (**CRITICAL TASK 1.0**)
- Acknowledges report of HPCS Injection valve failure to open
- Directs HPCS manually started and lined up for injection. **(CRITICAL TASK 2.0)**

RO

- Identify LOCA has occurred
- Verifies all available injection systems lined up and injecting
    - When directed places RHR "B" in Suppression Pool Spray
        - Opens SWP*MOV90B.
        - Verifies RHR pump B running.
        - Verifies RHS*MOV24B overridden closed.
        - Opens RHS*MOV33B to establish SC spray flow.
- When directed places Drywell Spray in service: **(CRITICAL TASK 1.0)**
        - Opens RHS*MOV15B, Outlet to Drywell Spray
        - Opens RHS*MOV25B, Outlet to Drywell Spray
        - Verifies closed, RHS*MOV4B, Pmp 1B Minimum Flow Vlv

- Verifies approximately 7450 gpm on Drywell Spray Header Flow (*2RHS*FI63B*)
- Verifies open SWP*MOV90B, Heat Exchanger 1B Svce Water Inlet Vlv

- Informs CRS when DW spray is in service

BOP

- When directed change RPV pressure band to 500 – 1000 psig.

- Trips the 1B Recirc Pump when directed.
- Reports HPCS failure to start and inject.

- Manually starts HPCS and establishes injection.
  (CRITICAL TASK 2.0)

- Raises RPV water level to <160".

Termination Cue:

- HPCS in service, RPV level recovering
- Drywell parameters improving

Facility: **Nine Mile Point 2** Scenario No.: **NRC-04** Op-Test No.: **August 2009**

Examiners: _____ Operators: _____

Initial Conditions: Simulator IC-20

1. Reactor Power 100%

Turnover:

1. All equipment operable.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N (RO) N (SRO)	Swap Control Rod Drive Pumps to RDS-P1B in-service. **N2-OP-30**
2	RR16A @.25 1 min ramp RR16A @ .75 1 min ramp	C (RO) C (SRO) TS (SRO)	Recirc Pump (RCS) "A" loss of cooling water. Requires RCS Pump A shutdown and isolation. (TS 3.4.1) **N2-SOP-29.1, N2-SOP-29, Tech Spec 3.4.1**
3		R (SRO) R (RO)	Cram Rod insertion to reduce rod line below 100%.
4	RD18 RD063419 RD062227	C (ALL) TS (SRO)	RDS-P1B trips due to clogged suction strainer with 2 HCU Accumulator Trouble Alarms. Requires RWCU shutdown. **N2-SOP-30, Tech Spec 3.1.5**
5	RR10B	C (RO) C (SRO)	Recirc Pump (RCS) "B" trips on high breaker current. Requires a reactor scram. **N2-SOP-29, N3-SOP-101C**
6	RC11 RC12	M (All)	RCIC line breaks in the Secondary containment and cannot be isolated. (2005 NRC 3) **N2-EOP-SC, N2-EOP-RPV**
7	PC04	C (BOP) C (SRO)	SBGT will not automatically start.
8	N/A		Two areas will exceed max safe requiring a blowdown. **N2-EOP-C2**

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

Facility: **Nine Mile Point 2**	Scenario No.: **NRC-04**	Op-Test No.: **August 2009**
TARGET QUANTITATIVE ATTRIBUTES **(PER SCENARIO; SEE SECTION D.5.d)**	ACTUAL ATTRIBUTES	
1. Total malfunctions (5-8) **Events 2,4,5,6,7**	5	
2. Malfunctions after EOP entry (1-2) **Events 7**	1	
3. Abnormal events (2-4) **Event 2, SOP 29 & 29.1** **Event 4 – SOP-30** **Event 5 – SOP-29**	3	
4. Major transients (1-2) **Event 6**	1	
5. EOPs entered/requiring substantive actions (1-2) **Event 6 EOP-RPV, EOP-SC**	2	
6. EOP contingencies requiring substantive actions (0-2) **EOP-C2,**	1	
7. Critical tasks (2-3)	3	
CRITICAL TASK DESCRIPTIONS: CT-1.0 Manually scram when RCS Pump B trips CT-2.0 Diagnose a failure of GTS to start and manually start GTS CT-3.0 Blowdown when two areas exceed max safe		

SCENARIO SUMMARY

While operating at rated power, the crew will Swap Control Rod Drive Pumps to place RDS-P1B in-service. After the RDS pumps are shifted and system parameters return to normal the Recirc Pump (RCS) A CCP supply valve closes due to a hot short. This causes the pump to overheat and must be removed from service. (TS 3.4.1). The operators must lower power and the Cram Rods must be inserted to reduce rod line below 100%

With the plant stable Control Rod Drive Pump RDS-P1B trips due to clogged suction strainer. The low RDS pressure will result in two HCU Accumulator Trouble Alarms. The crew will trip Reactor Water Cleanup pumps if warranted and attempt to restart an RDS pump after dispatching operators to change pump suction filters. When the standby pump is started the two Accumulator annunciators will clear.

"B" Recirculation Pump RCS B will trip on over-current. With no Recirc flow the crew must manually scram the reactor **(Critical Task)**. After the scram a RCIC steam line will break in the Reactor Building requiring an entry into N2-EOP-SC. The RCIC line cannot be isolated and will eventually result in two areas exceeding Max Safe, requiring entry into N2-EOP-C2 and an RPV blowdown **(Critical Task)**. Also during this time the GTS will fail to start when the Reactor Building isolates requiring the crew to manually initiate GTS **(Critical Task).**

Termination Criteria: RPV Blowdown complete and RPV level controlled above TAF.

SCENARIO SUMMARY

Initial Power Level: ~4% Startup with RPV Pressure at ~920 psig

The scenario begins with a plant startup in progress and reactor pressure at ~920 psig. Prior to continuing the startup the crew must Transfer 2ENS*SWG101 From 2NNS-SWG016 To 2EGS*EG1 per section H.1.0 of N2-OP-72, then Transfer 2ENS*SWG101 From 2EGS*EG1 To 2NNS-SWG018 per section H.2.0 of N2-OP-72 and then remove the Div I Emergency Diesel Generator from service. When the Diesel Generator output breaker is open the Diesel will trip requiring the crew to declare the diesel inoperable and enter T.S.

After this is completed the crew will continue control rod withdrawal to raise power. While increasing power, IRM 'A' will fail inoperative causing a half scram and requiring T.S. entry. This will lock in a control rod block and stop the Startup. Technical Specification 3.3.1.1 may be checked but no action is needed since only one instrument has failed. The crew must bypass the IRM and reset the scram and the SRO may then continue the startup.

The crew will continue withdrawing control rods for the startup IAW N2-OP-101A. While this occurring, Refuel Floor Gas Monitor RM01-014 will fail and the expected Secondary Containment Isolation will not occur. This will require manual action by the operators to manually isolate the Secondary Containment and the SRO must address TS.

A Steam Leak will cause drywell pressure to rise and the crew may attempt to manually scram the reactor. An Automatic scram, the Mode Switch and the RPS Pushbuttons will fail to insert the control rods. RRCS/ARI must be manually initiated to insert the rods **(CRITICAL TASK)**. The SRO will enter EOP-RPV, EOP-PC and EOP-C5 (C5 until all the rods are in). When high drywell pressure occurs LPCS and RHR A will fail to initiate and RHR B will trip when Drywell pressure exceeds 1.68 psig. However, both LPCS and RHR A can be started manually. RHR A must then be placed in Suppression Chamber sprays per EOP-PC. When Suppression Chamber pressure exceeds 10 psig, the crew will spray the Drywell by alternate means with RHR A. (**CRITICAL TASK)**The scenario ends with the containment parameters improving and RPV level controlled in the normal band.

Procedures used: N2-OP-101A, N2-OP-92, N2-OP-97, N2-EOP-HC, EOP-RPV, EOP-PC, EOP-(C5), EOP-6-Att.5 & Att.22

NMP SIMULATOR SCENARIO

NRC Scenario 4

SWAP CONTROL ROD DRIVE PUMPS, OVERHEATING RECIRC PUMP 'A' REQUIRES RCS PUMP SHUTDOWN, RDS-P1B TRIPS, HCU ACCUMULATOR TROUBLE ALARMS, "B" RECIRCULATION PUMP TRIPS REQUIRING MANUAL SCRAM, RCIC STEAM LINE WILL BREAK IN THE REACTOR BUILDING, GTS FAIL TO AUTO START

PREPARER _____ DATE _____

VALIDATED _____ DATE _____

GEN SUPERVISOR OPS TRAINING _____ DATE _____

OPERATIONS MANAGER NA Exam Security DATE _____

CONFIGURATION CONTROL NA Exam Security DATE _____

SCENARIO SUMMARY

Length: 1.5 hours

Initial Power Level: 100% with 70 to 100% Rod Line

While operating at rated power, the crew will Swap Control Rod Drive Pumps to place RDS-P1B in-service. After the RDS pumps are shifted and system parameters return to normal the Recirc Pump (RCS) A CCP supply valve closes due to a hot short. This causes the pump to overheat and must be removed from service. (TS 3.4.1). The operators must lower power and the Cram Rods must be inserted to reduce rod line below 100%

With the plant stable Control Rod Drive Pump RDS-P1B trips due to clogged suction strainer. The low RDS pressure will result in two HCU Accumulator Trouble Alarms. The crew will trip Reactor Water Cleanup pumps if warranted and attempt to restart an RDS pump after dispatching operators to change pump suction filters. When the standby pump is started the two Accumulator annunciators will clear.

"B" Recirculation Pump RCS B will trip on over-current. With no Recirc flow the crew must manually scram the reactor **(Critical Task)**. After the scram a RCIC steam line will break in the Reactor Building requiring an entry into N2-EOP-SC. The RCIC line cannot be isolated and will eventually result in two areas exceeding Max Safe, requiring entry into N2-EOP-C2 and an RPV blowdown **(Critical Task)**. Also during this time the GTS will fail to start when the Reactor Building isolates requiring the crew to manually initiate GTS **(Critical Task).**

Major Procedures:	N2 EOP-RPV, N2 EOP-SC, N2 EOP-C-2. N2-SOP-29 N2 SOP-29.1, N2-SOP-30, and N2-SOP-101C
EAL Classification:	SITE AREA EMREGENCY EAL 3.4.1 and 4.4.1
Termination Criteria:	RPV Blowdown is complete and RPV level is maintained above TAF.

I. SIMULATOR SET UP

A. IC Number: IC-20,

B. Presets/Trigger Assignments

1. Malfunctions:

a. RC11, RCIC Isolation Failure, TRUE	Inserted
b. RD18, CRD Suction Filter Clogged, TRUE	TRG2
c. RD063419, 34-19 Rod Failure Accum Trbe, Delay 60s	TRG2
d. RD062227, 22-27 Rod Failure Accum Trbl, Delay 90s	TRG2
e. RR10B RCS*P1B trip, 4 Bkr opens, True	TRG3
f. RC12, RCIC St Lk in Rx Bldg, 30%, 10m ramp	TRG4
g. RC11, RCIC failure to Isolate, True	Inserted
h. PC32A, GTS train 'A' Auto Start Failure	Inserted
i. PC32B, GTS train 'B' Auto Start Failure	Inserted

2. Remotes:

a. None

3. Overrides:

a. OVR-01a2s042di0418, ICS*MOV128, ON	Inserted
b. OVR-01a2s042di0564, ICS*MOV128, OFF	Inserted
c. OVR-01a2s041di0366, ICS*MOV121, ON	Inserted
d. OVR-01a2s041di0365, ICS*MOV121, OFF	Inserted
e. OVR-02a1s022di31315, 2CCP*MOV17A, ON	TRG 1
f. OVR-02a1s022di3140, 2CCP*MOV17A, OFF	TRG 1

4. Annunciators:

a. None

C. Equipment Out of Service

a. None

D. Support Documentation

a. None

E. Miscellaneous

a. None

II. **SHIFT TURNOVER INFORMATION**

OFF GOING SHIFT: ☐ N ■ D DATE: _____

PART I: To be performed by the oncoming Operator before assuming the shift.

- Control Panel Walk down (all panels) (SM, CRS, STA, CRO, CRE)

PART II: To be reviewed by the oncoming Operator before assuming the shift.

Shift Supervisor Log (SM, CRS, STA)
- CRO Log (CRO)

Lit Control Room Annunciators (SM, CRS, STA, CRO, CRE)

- Shift Turnover Checklist (ALL)
- LCO Status (SM, CRS, STA)
- Computer Alarm Summary (CRO)

Evolutions/General Information/Equipment Status:

1. Reactor Power is approx. 100% and a power ascension is in progress
2. All equipment is operable

PART III: Remarks/Planned Evolutions:

1. The crew is directed to swap Control Rod Drive Pumps to place RDS-P1B in-service to permit maintenance on RDS-P1A,
2. Maintenance is standing by and a Plant Operator is at RDS –P1B.

PART IV: To be reviewed/accomplished shortly after assuming the shift:

- Review new Clearances (SM)
- Shift Crew Composition (SM/CRS)
- Test Control Annunciators (CRE)

TITLE	NAME	TITLE	NAME
SRO			
ATC RO			
BOP RO			

A. CRITICAL TASKS:

CT-1.0 Given a trip of the operating Recirculation Pump while operating in single loop operation the crew will diagnose the plant operating in natural circulation and scram the reactor.

CT-2.0 Given a condition requiring automatic isolation of Secondary Containment and a failure of Standby Gas Treatment (GTS) to start, the crew will manually start Standby Gas Treatment.

CT-3.0 Given an unisolable RCIC steam leak and secondary containment temperature above maximum safe values in more than one area, the crew will perform an RPV Blowdown per EOP-C2.

CREW

Crew, walks down the panels conducts shift brief

EVENT 1

Swap Control Rod Drive Pumps to place RDS-P1B in-service

SRO

- Directs RDS-P1B started and RDS-P1A placed in standby per N2-OP-30, F.2.0

- After RDS-P1B is placed in service, contacts WEC to dispatch team to perform Post Maintenance Testing requirements.

RO / BOP

- Dispatches AO to perform prestart lineup

Role Play

When dispatched as additional operators to support the pump swap with activities such as performing prestart verifications and monitoring, respond as required. There will be no unusual conditions or readings to be reported for this evolution.

- IF RDS is supplying WCS pump seal cooling, THEN station personnel at locations to simultaneously monitor WCS pump seal parameters during RDS pump changeover.

- Start the standby CRD pump 2RDS-P1B CRD PUMP 1B by placing its control switch to START, THEN release to Normal-After-START.

- Stop the CRD pump to be shutdown 2RDS-P1A, CRD PUMP 1A by taking its control switch to STOP AND releasing to Normal-After-STOP.
- Directs local monitoring of operating WCS pump(s) seal cavity temperatures

- IF WCS pump seal cooling is being supplied from RDS, THEN directs verification of seal cooling flow between 1-4 gpm as indicated locally.

- As required, directs adjusting RPV Level Instrumentation Backfill

- Reports RDS-P1B in service and RDS-P1A in standby.

EVENT 2

When directed by Lead Evaluator activate override by depressing TRG1:

2CCP*MOV17A CLOSE **TRG1**

*2CCP*MOV17A strokes closed*

RO

Reports and responds to annunciators

- Reports valve 2CCP*MOV17A has closed

AN602117 RECIRC PUMP 1A SEAL COOLING WATER FLOW LOW
AN602 RECIRC PUMP 1A MOTOR WINDING COOLING WATER FLOW LOW
AN602220 RECIRC PUMP 1A / 1B MOTOR TEMPERATURE HIGH

SRO

- Directs entry into SOP-29.1
- Determines that the RCS*P1A should be shut down
- Directs RCS Pump A tripped
- Enters SOP-29
- Directs the first 4 Cram Rods inserted
- Calls Work Week Manager to request I&C to reset Scram and Rod Block set points to single loop values
- Calls Rx Engineering to request single loop Thermal Limit penalties instated
- Refers to TS 3.4.1
- When conditions stabilize
- Conducts Brief
- Notifies WEC
- Notifies management

RO.

- Enters N2-SOP-29.1 and performs concurrently with ARP actions.
- Trips RCS*P1A by placing the control switch for the 5 Breaker to STOP
- Inserts cram rods when directed
- Executes Att. 2 to SOP-29
- Verifies loop controllers are in MAN
- Verifies RCS*P1A pump speed is zero one minute after pump trip, if not shut RCS*MOV18A

EVENT 3

Control Rod Drive Pump trip and Accumulator alarms

CONSOLE OPERATOR

When directed by Lead Evaluator, **insert malfunctions**

RD18,CRD Suct Filter Clogged, TRG2

RD06-34-19 Accum Trble, 60s delay TRG2

RD06-22-27 Accum Trble, 90s delay TRG2

CRD suction clogs 100%

603318 CRD Pmp Suction Fltr Diff Press High

Accumulator alarms come in

CREW

Acknowledge and report

- *RDS P1A trips*
- *RDS flow and charging pressure drop to 0*

The following annunciators alarm:

603318 CRD Pmp Suction Fltr Diff Press High (first alarm)

After the RDS pump trips then:

603308 CRD Pmp 1A/1B Auto Trip
603309 CRD Pmp 1A Suct Press Low
603311 CRD Charging Wtr Press Low
603315 CRD PMP 1B Suct Press

NOTE:

RDS pump restoration is expected to be completed in less than 15 minutes.

ROLE Play

As PO dispatched to Accumulators report pressures for both accumulators as being 900psig

Annunciator 602324, RWCU PUMP CLG WTR TEMP HIGH, is expected to be received after several minutes with no operating RDS pump

Low
603446 CRD Pmp Disch Hdr Press Low

Rod and Detector Display Amber Trouble light is lit for the affected accumulators

- Enter N2-SOP-30
- Monitor for override conditions and performs actions if required

RO

- Dispatches operator to report accumulator pressure for 34-19 and 22-27
- Implements pump recovery actions
- When Ann 602324, RWCU PUMP CLG WTR TEMP HIGH, is received. Then remove WCS from service as follows:
- Throttle WCS*MOV200 until in service filters on hold.
- Trip WCS pumps.
- **IF** An RDS pump is NOT restored to service within 15 minutes then RDS backfill must be isolated
  - Shift 2RDS-FC107 (RDS flow controller) to Manual.
  - Close FCV to minimum position.
  - Determines trip is caused by low suction pressure

. **ROLE Play**

As PO dispatched to shift CRD filters DELAY report until high temperatures have driven the RO to trip WCS

DELETE Malf RD18, then report filters have been shifted

- Dispatches operator to swap RDS suction filters per N2-OP-30, Section F.1.0.
- Start a RDS pump within 20 minutes of 2nd inoperable accumulator.
- WHEN a RDS pump is running, perform the following:
  - Adjust RDS flow using 2RDS-FC107 to approximately 63 gpm.
  - Place 2RDS-FC107 in Auto.
  - IF WCS OR RPV backfill was removed from service, THEN restore per SM/CRS.
  - Verify WCS/RCS seal flows and backfill flows per N2-OP-30, Sections F.2.5 through F.2.9
  - WHEN charging water header pressure has been restored above 940 psig, exit this procedure (N2-SOP-30).
  - Report RDS pump is restarted

SRO

- Directs entry into SOP-30
- Declares two accumulators inoperable with pressure below 940 psig and enters Tech Spec 3.1.5 Condition B

EVENT 4

When directed by examiner insert malfunction to trip Recirc Pump B

INSERT MALF

RC10B RCS*P1B Motor Fault/Trip TRG3

CREW

Responds to the following alarms and indications

Annunciator 602119, RECIRC PUMP 1A/1B MOTOR AUTO TRIP

Annunciator 602107, RECIRC PUMP 1A/1B MOTOR ELEC FAULT

Annunciator 602113, RECIRC PUMP 1A/1B MOTOR OVERLOAD

Report trip of RCS 1B

SRO

- Directs entry into N2-SOP-29 for trip of RCS 1B
- Directs a scram and entry into N2-SOP-101C.
  (CRITICAL TASK 1.0)
- Enters EOP-RPV on low RPV water level
- Assigns actins of SOP-101C
- Directs level band 160 to 200 inches using Feedwater
- Directs pressure band 800-1000

psig using EHC in Automatic

- Direct scram reset as soon as possible

RO

- Enters N2-SOP-29
- Verifies no Recirculation Pumps operating with the Mode Switch in RUN.
- Scrams the reactor per N2-SOP-101C.

  (CRITICAL TASK 1.0)
- Scrams Reactor by positioning Reactor Mode Switch in Shutdown

  (CRITICAL TASK 1.0)
- Provides Scram Report
- Notifies SRO/Crew all Rods in
- Verify automatic responses.
- Turbine tripped/TSVs & TCVs shut
- Generator tripped and house loads transferred
- SDV Vent & Drain valves closed
- RPV pressure on TBVs OR SRVs
- FWLC controlling level > 159.3"
- Fully insert IRMs AND SRMs.
- Resets scram when possible

EVENT 5 and 6

Unisolable RCIC Steam Leak into the Reactor Building and GTS Fails to start

CONSOLE OPERATOR:

After sufficient scram actions are completed and/or when directed by the chief examiner, insert the following malfunction:

RC12, RCIC Steam Leak in Rx Building, 30% over 15 minute ramp **TRG3**

CREW

Responds to the following alarms/ indications.

851254 Process Airborne Rad Monitor Activated

- Recognize and reports increasing area temperatures and in the Reactor Building.
- Diagnoses steam line break in the Secondary Containment

RO / BOP

Check DRMS CRT Display to determine RB HVR*RE32A/B alarming.

SRO

Enters N2-EOP-SC

Verify

- HVR isolates
- HVR*UC413A or B starts
- GTS starts
- Directs GTS manual start when informed of GTS failure to auto start

(CRITICAL TASK 2.0)

Note Anticipating RPV Blowdown and using the TBVs meets the requirements of CT-3.0

IAW ARP for *851254*

- On High Radiation Level Verify:
  - UC413A(B) starts.
  - AOD34A(B) closes
  - AOD1A/B closes
  - AOD9A/B closes
  - AOD10A/B closes
  - GTS Train A or B Start

SRO cont'd

- HVR Unit Coolers start
- Directs BOP / RO to manually isolate RCIC Steam Line.
- WAIT until 2 or more areas are above Maximum Safe for the same parameter, THEN proceed to N2-EOP-C2.

RO/BOP

- Verifies Rx Bldg Isolated using EOP-Hard Card
- Reports Failure of both GTS trains
- Attempts to start a GTS train **(CRITICAL TASK 2.0)**

RO / BOP

- Uses EOP-6 Att 28 to monitor and report temperature conditions.
- Confirms WCS and RHR isolation.
- Reports failure of RCIC to automatically isolate.
- Attempts to manually isolate RCIC Steam Line by closing MOV*121 using keylock switch.
- Monitors back panels for area temps and radiation levels.
- Reports levels and trends to the

	SRO.
	RO / BOP
Note Anticipating RPV Blowdown and using the TBVs meets the requirements of CT-3.0.	• IF directed to rapidly depressurize the RPV using the Main Turbine Bypass Valves, opens all 5 BPVs using the BYPASS JACK INCREASE PB
Second area temperature reaches 212°F (E31-N601E and N601F). RPV Blowdown is required.	• Report second area temperature reaching 212°F.
	SRO
	• Enters EOP-C2 RPV Blowdown • Verifies Supp Pool Level >192 ft • Directs 7 ADS valves opened and If required restore pneumatics to drywell **(CRITICAL TASK 3.0)** • Progresses in C2 to the wait block for shutdown cooling interlock to clear pressure set point
	RO/BOP
	• **When directed, opens seven (7) ADS / SRVs by using keylock switch for EACH ADS valve at control room back panel P631 and P628. (CRITICAL TASK 3.0)**

Termination Criteria

RPV Blowdown is complete and RPV level is maintained above TAF.

EAL: Site Area Emergency 3.4.1 and 4.4.1

Termination Criteria:

RPV Blowdown is complete and RPV level is maintained above TAF

Facility: **Nine Mile Point 2** Scenario No.: **NRC-ALT (Low Power)** Op-Test No.: **August 2009**
Examiners: _____ Operators: _____

Initial Conditions: Simulator IC-199

1. Plant startup is in progress IAW N2-OP101A @ Step E.2.49
2. Startup Sequence A2 in progress
3. Control Rod 18-19 in RSCS Group 7, RWM Step 16 has just been pulled to Position 08
4. Reactor Pressure is at approximately ~920 psig.
5. Other operators will be performing SJAE startup later today.
6. Service Water Pump "E" is out of service for maintenance and the maintenance work is complete.
7. Div I Diesel Generator is in service in anticipation of the power swap of SWG 101.

Turnover:

1. Continue Pulling Control Rods until completion of RSCS Group 5 RWM Step 19.
2. Transfer 2ENS*SWG101 From 2NNS-SWG016 To 2NNS-SWG018 per sections H.1.0 and H.2.0 of N2-OP-72
3. After shifting the bus power supply continue the plant startup IAW N2-OP-101A

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N (BOP) N (SRO)	Transfer 2ENS*SWG101 From 2NNS-SWG016 To 2NNS-SWG018 per sections H.1.0 and H.2.0 of **N2-OP-72**
2	DG05A	C (BOP) C (SRO) TS (SRO)	Div 1 Diesel Generator trips as it's being secured **T.S. 3.8.1.B**
3	N/A	R (RO) R (SRO)	Continue startup See N2-OP-101A complete thru step E.3.8 add cues **N2-OP-101A**
4	NM09A	I (RO) I (SRO)	IRM "A" Upscale/Inop UPSCTR/Inop on the panel indication **N2-OP-92 Neutron Monitoring, N2-OP-97 RPS Off Normal Section H.2.0.**
5	PC31A(B)	I (BOP) I (SRO) TS (SRO)	Refuel Floor Gas Monitor RM01-014 Failure – secondary Containment fails to isolate. **EOP-HC Att.4 - HARD CARD for SBGT** **EOP-SC**
6	MS04	M (ALL)	Steam Leak in Drywell. Mode Switch Failure, RRCS/ARI will insert rods (**CT**) **EOP-RPV, EOP-PC, EOP-Failure to Scram (C5)**
7	RH01B RH14A	I (ALL)	DIV1 LPCS and RHR A fail to initiate and RHR B trips when Drywell pressure exceeds 1.68 psig; Both LPCS and RHR A can be started manually.

8	RH09A	C (BOP) C (SRO)	RHS*MOV15A will not open, Alternate Drywell Spray required (**CT**) **EOP-6-Att.5 & Att.22**

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

Facility: **Nine Mile Point 2**	Scenario No.: **NRC-ALT**	Op-Test No.: **August 2009**
TARGET QUANTITATIVE ATTRIBUTES **(PER SCENARIO; SEE SECTION D.5.d)**	ACTUAL ATTRIBUTES	
1. Total malfunctions (5-8) **Events 2, 4, 5, 6, 7, 8**	6	
2. Malfunctions after EOP entry (1-2) **Events 7, 8**	2	
3. Abnormal events (2-4) **Event 4, 5, 7, 8**	4	
4. Major transients (1-2) **Event 6**	1	
5. EOPs entered/requiring substantive actions (1-2) **Events 6 EOP-RPV, EOP-PC,**	2	
6. EOP contingencies requiring substantive actions (0-2) **Events 6, 7, & 8 EOP-C5 and C-6**	2	
7. Critical tasks (2-3)	2	
CRITICAL TASK DESCRIPTIONS: CT-1.0 Initiate RRCS/ARI to insert control rods due to mode switch/RPS failure CT-2.0 Initiate DW spray with service water to control containment pressure		

NMP SIMULATOR SCENARIO

NRC Scenario Alternate REV. 0

PLANT STARTUP, REMOVE THE DIV EDG FROM SERVICE, IRM FAILURES, RAD MONITOR FAILURE, STEAM LEAK IN DRYWELL, DIV 1 ECCS AUTO START FAILURE, ALTERNATE DRYWELL SPRAY

PREPARER	_____	DATE_____
VALIDATED	_____	DATE_____
GEN SUPERVISOR OPS TRAINING	_____	DATE_____
OPERATIONS MANAGER	NA Exam Security	DATE _____
CONFIGURATION CONTROL	NA Exam Security	DATE _____

SCENARIO SUMMARY

Length: 1.5 hours

Initial Power Level: ~4% Startup with RPV Pressure at ~920 psig

The scenario begins with a plant startup in progress and reactor pressure at ~920 psig. Prior to continuing the startup the crew must Transfer 2ENS*SWG101 From 2NNS-SWG016 To 2EGS*EG1 per section H.1.0 of N2-OP-72, then Transfer 2ENS*SWG101 From 2EGS*EG1 To 2NNS-SWG018 per section H.2.0 of N2-OP-72 and then remove the Div I Emergency Diesel Generator from service. When the Diesel Generator output breaker is open the Diesel will trip requiring the crew to declare the diesel inoperable and enter T.S.

After this is completed the crew will continue control rod withdrawal to raise power. While increasing power, IRM 'A' will fail inoperative causing a half scram and requiring T.S. entry. This will lock in a control rod block and stop the Startup. Technical Specification 3.3.1.1 may be checked but no action is needed since only one instrument has failed. The crew must bypass the IRM and reset the scram and the SRO may then continue the startup.

The crew will continue withdrawing control rods for the startup IAW N2-OP-101A. While this occurring, Refuel Floor Gas Monitor RM01-014 will fail and the expected Secondary Containment Isolation will not occur. This will require manual action by the operators to manually isolate the Secondary Containment and the SRO must address TS.

A Steam Leak will cause drywell pressure to rise and the crew may attempt to manually scram the reactor. An Automatic scram, the Mode Switch and the RPS Pushbuttons will fail to insert the control rods. RRCS/ARI must be manually initiated to insert the rods **(CRITICAL TASK)**. The SRO will enter EOP-RPV, EOP-PC and EOP-C5 (C5 until all the rods are in). When high drywell pressure occurs LPCS and RHR A will fail to initiate and RHR B will trip when Drywell pressure exceeds 1.68 psig. However, both LPCS and RHR A can be started manually. RHR A must then be placed in Suppression Chamber sprays per EOP-PC. When Suppression Chamber pressure exceeds 10 psig, the crew will spray the Drywell by alternate means with

RHR A. (**CRITICAL TASK)**The scenario ends with the containment parameters improving and RPV level controlled in the normal band.

Procedures used: N2-OP-101A, N2-OP-92, N2-OP-97, N2-EOP-HC, EOP-RPV, EOP-PC, EOP-(C5), EOP-6-Att.5 & Att.22

I. SIMULATOR SET UP

A. IC Number: IC-199, Startup ~4% power.

B. Presets/Function Key Assignments

1. Malfunctions:

a.	PC31A,	HIGH RAD ISOLATION FAILURE, True	Inserted
b.	PC31B,	HIGH RAD ISOLATION FAILURE, True	Inserted
c.	DG05A,	DIESEL GENERATOR NUMBER 1 OVERSPEED TRIP	TRG 2
d.	NM09A,	IRM A FAILS INOP, True	TRG 3
e.	MS04	STM LINE RUPTURE INSIDE PC, 1.5%, 5m ramp	TRG 5
f.	RP03	RPS FAILURE TO SCRAM, True	TRG 5
g.	RH14A	ECCS DIV I FAILS TO INITIATE, True	Inserted
h.	RH01B	RHR PUMP B TRIP, True	Inserted
i.	RH09A	RHS*MOV15A JAMMED, True	Inserted

Remotes:

a.	CW20, Bkr for 2SWP*MOV74E, OPEN	Inserted
b.	ED15, CKT 4 in Pnl 2BYS*201A, OPEN	TRG 10
c.	ED82, Rack Bkr 101-13, OUT	TRG 8
d.	ED05, Rack Bkr 101-10, IN	TRG 9
e.	RM01-014, Rad Monitor RE14A, value,1E20	TRG 4
f.	RH47, Insert Jumpers on 2RHS*MOV15A	TRG 6
g.	RH49, Insert Jumpers on 2RHS*MOV25A	TRG6

Overrides:

a. None

4. Annunciators:

a. None

C. Equipment Out of Service

3. None

D. Support Documentation

E. Miscellaneous -

1. ENSURE THE FOLLOWING PROCEDURES ARE OUT IN THE CONTROL ROOM SIGNED OFF AS INDICATED BELOW: N2-OP- 3 – signed off thru step 3.3.32

   N2-OP-101A – step 2.47.4 completed

   N2-OP-72 completed through H.1.4.

   N2-SOP-3, Att 12, Table 1 loading for EG1 completed.

2. Set Event Trigger, TRG 1 = zddg1aegpx07(1). This trigger is the EGS*EG1 output breaker, Bkr 101-1 positioned to Open (Green Flag).

3. Start SWP*P1F

II. **SHIFT TURNOVER INFORMATION**

OFF GOING SHIFT: ☐ N ■ D DATE: _____

PART I: To be performed by the oncoming Operator before assuming the shift.

- Control Panel Walkdown (all panels) (SM, CRS, STA, CRO, CRE)

PART II: To be reviewed by the oncoming Operator before assuming the shift.

Shift Supervisor Log (SM, CRS, STA)
- CRO Log (CRO)

Lit Control Room Annunciators (SM, CRS, STA, CRO, CRE)
- Shift Turnover Checklist (ALL)
- LCO Status (SM, CRS, STA)
- Computer Alarm Summary (CRO)

Evolutions/General Information/Equipment Status:

1. Plant startup is in progress IAW N2-OP101A, Step E.2.47.4 has been completed.
2. Startup Sequence A2 in progress
3. Control Rod 18-19 in RSCS Group 7, RWM Step 16 has just been pulled to Position 08
4. Reactor Pressure is at approximately ~920 psig.
5. Other operators will be performing SJAE startup later today.
6. Service Water Pump "E" is out of service for maintenance and the maintenance work is complete.
7. Div I Diesel Generator is in service in anticipation of the power swap of SWG 101.

PART III: Remarks/Planned Evolutions:

Applicable Procedures In Progress

1. Continue Pulling Control Rods until completion of RSCS Group 5 RWM Step 19.
2. Transfer 2ENS*SWG101 From 2NNS-SWG016 To 2EGS*EG1 per section H.1.0 of N2-OP-72, then Transfer 2ENS*SWG101 From 2EGS*EG1 To 2NNS-SWG018 per section H.2.0 of N2-OP-72.
   - N2-OP-72 has been completed through H.1.4.
   - A Plant Operator is standing by at 2BYS*PNL201A with a flashlight AND radio.
   - The previous crew has completed a N2-SOP-3, Att 12, Table 1 loading for EG1.
3. Continue the plant startup IAW N2-OP-101A and attached RMRs

** **Additional Applicable Startup procedures are being monitored and performed by other operators. No actions from any applicable procedure will be taken without notifying the control room.**

Continue plant startup to place the reactor mode switch to RUN per N2-OP-101A.

PART IV: To be reviewed/accomplished shortly after assuming the shift:

- Review new Clearances (SM)
- Shift Crew Composition (SM/CRS)
- Test Control Annunciators (CRE)

III. PERFORMANCE OBJECTIVES

A. Critical Tasks:

CT-1.0 Given a failure of RPS to insert control rods the crew must initiate RRCS/ARI to insert control rods.

CT-2.0 Given the inability to spray the Drywell with RHR and Containment pressure rising the crew will Spray the Containment with Service Water

EVENT 1
Transfer 2ENS*SWG101 From 2NNS-SWG016 To 2EGS*EG1 per section H.1.0 of N2-OP-72, then Transfer 2ENS*SWG101 From 2EGS*EG1 To 2NNS-SWG018 per section H.2.0 of N2-OP-72 and then remove the Div I Emergency Diesel Generator from service.

Transferring the breaker involves the following steps and is done at the simulator console.
Use REMOTES, 8, 9, and 10
Remote 10 opens ckt 4 on 2BYS*PNL201A
Remote 8 racks out Bkr 101-13
Remote 9 racks in Bkr 101-10

CREW

Crew conducts a pre-brief, walks down the panels, and tests annunciators.

SRO

- Directs BOP to Transfer 2ENS*SWG101 From 2NNS-SWG016 To 2EGS*EG1 per section H.1.0 of N2-OP-72, then Transfer 2ENS*SWG101 From 2EGS*EG1 To 2NNS-SWG018 per section H.2.0 of N2-OP-72.
- When notified declares Division I Service Water Pumps inoperable.
- Refers to ITS 3.7.1, 3.8.1 OR ITS 3.8.2 for applicable actions when BREAKER 101-13 is opened.
- Exits ITS as system lineups are restored.

RO

- Monitors reactor parameters
- Provides peer checks to BOP

BOP

- Acknowledges direction to shift 2ENS*SWG101 power supplies per N2-OP-72.
- Verify third Service Water Pump in Division II running in accordance with N2-OP-11.

- Load OR unload 2EGS*EG1 as required to set Diesel Generator Load to within 200 KW of Load on 2ENS*SWG101.

NOTE: The following Step defeats Service Water Pump Load Sequencing. All Division I Service Water Pumps should be declared inoperable.

ROLE PLAY:
As operator in field directed to Open Ckt 4 at 2BYS*PNL201A, toggle the remote and report same
ED15, OPEN **TRG 10**

- Directs operator at 2BYS*PNL201A to complete Section A of Att 1.

NOTE: The following step will cause an offsite power circuit to be inoperable. Refer to ITS 3.8.1 OR ITS 3.8.2 for applicable actions.

- Open BREAKER 101-13.

- Verifies 2ENS*SWG103 is energized from 2NNS-SWG017.

- Inform Control Room of inoperable loop of Service Water in ESL AND take actions required by ITS 3.7.1.

(Remote 8 racks out Bkr 101-13
Remote 9 racks in Bkr 101-10)

- Verify less than two Auxiliary Boilers in service.

ROLE PLAY:
As operator in field directed to Rack out Bkr 101-13, Transfer the breaker cubicle for bkr10-10 and rack the bkr in; toggle remotes and report bkr is racked out, transferred to cubicle 101-10 and racked in.
ED82, OUT **TRG 8**
ED05, IN **TRG 9**

- Directs transferring breaker from cubicle 2ENS*SWG101-13, NORMAL SUPPLY BREAKER, to 2ENS*SWG101-10, ALTERNATE SUPPLY BREAKER, as follows:

- Verify voltage on 2NNS-SWG018 is about 4.16KV.

- Place SYNCHRONIZE ALTN FEED FROM NORM BUS NNS 018 TO EMER BUS 101 switch for BREAKER 101-10 in ON.

- Using VOLTAGE REGULATOR switch, match voltages on 4.16KV BUS 2ENS*SWG101 INCOMING VOLTS meter AND 4KV RTX-XSR1A/2ABS-X1/2EGS*EG1 RUNNING VOLTS meter.

- Adjust GOVERNOR switch to establish slow clockwise rotation on

SYNCHROSCOPE

- WHEN SYNCHROSCOPE indicates 5 minutes before 12 o clock place control switch for BREAKER 101-10 in Normal-After-TRIP.
- WHEN SYNCHROSCOPE again reaches 5 minutes before 12 o clock close BREAKER 101-10.
- Place SYNCHRONIZE ALTN FEED FROM NORM BUS NNS 018 TO EMER BUS 101 in OFF.
- Unload 2EGS*EG1
- Direct Operator at 2BYS*PNL201A to complete Section B of Attachment 1.
- Shutdown 2EGS*EG1 in accordance with N2-OP-100A
- Return Service Water System to normal lineup in accordance with N2-OP-11.
- Using EG1 GOVERNOR switch, reduce Diesel Generator Load ~100 KW
- Using EG1 VOLTAGE REGULATOR switch, adjust VARS to >0 but <100 A-C KILOVARS TO BUS
- Open 2ENS*SWG101-1 OUTPUT BREAKER 101-1

NOTE: When BREAKER 101-1 is opened the Diesel will trip. See event 2.

ROLE PLAY:
As operator in field directed to Reclose Ckt 4 at 2BYS*PNL201A, toggle the remote and report same
ED15, Close

NOTE: Crew may decide to run the diesel at a reduced load for 15 minutes for Cooldown. If the crew delays shutting down EG1 the simulator operator will trip the output breaker and trip the diesel (EG1).

Event 2
Trip of DSL GEN 1

CREW

Acknowledge and Respond to

- *Diesel Generator Voltage and Frequency drop to 0.*

ROLE PLAY: If contacted as Work Week Manager or Maintenance acknowledge the request and state you'll have a team on it immediately.

CUE:
The SRO may decide to stop the startup at this time. If so then contact the Control Room and direct the SRO to continue the startup while the IRT (Incident Response Team) restores the Diesel.

- *Annunciator 852127 - EDG 1 PROTECTIVE LOCKOUT RELAY TRIP, alarms*

SRO

- Directs response IAW ARP
- Notify Work Week Manager to investigate.
- Enters T.S. 3.8.1.B
  - Declares a 72 hour LCO with the Diesel INOP.
  - Initiates SR 3.8.1.1.1 – 1 hour breaker alignment

RO

- Monitors reactor parameters
- Provides peer checks to BOP

BOP

- Verify the automatic response has occurred.
- Place EMERGENCY DSL GEN 1 (3) PARALLEL switch to OFF
- Place DIVISION 1 (2) 2EGS*EG1 START switch to STOP.
- Directs PO to:

  Verify 2EGO*P1A (P1B), LUBE OIL CIRCULATING PUMP, starts.

  Visually inspect for leakage OR loose components.

- Contacts Maintenance to inspect and troubleshoot the diesel.

May place the Diesel Room Ventilation in a standby lineup:

- At 2CEC*PNL870 (871), HVAC DIV I (II), stop 2HVP*FN1A, EDG 1 ROOM EXHAUST FAN, AND 2HVP*FN1C, EDG 1 ROOM EXHAUST FAN.

EVENT 3

Crew continues the startup per N2-OP-101A

NOTE: It may be necessary as GSO to call the Control Room and direct the crew to continue the startup and pull rods until No.1 Turbine Bypass Valve is 50% open.

SRO

- Directs the RO to continue withdrawing control rods to continue the plant startup.
- May Brief the crew

RO

- Withdraws control rods IAW sequence.
- Monitors RPV, CRD and Nuclear Instruments

NOTE: The operator may have to respond to APRM Downscales which come in intermittently.

- Withdraws Control Rod 26-35 to position 08 one notch at a time.
- Withdraws Control Rod 34-35 to position 08 one notch at a time.
- Withdraws Control Rod 34-27 to position 08 one notch at a time.
- Withdraws Control Rod 26-27 to position 08

one notch at a time.

- Goes to RWM Step 17, Withdraws Control Rod 02-42 to position 08 one notch at a time.
- May withdraw Control rod 02-43 to position 12.
- Responds to IRM failure Event 4

BOP

- Monitors Balance of Plant Equipment.
- Maintain Reactor Water Level between 178.3" AND 187.3"
- If required adjusts EHC Pressure Setpoint
- Provides peer check on control rods to the RO.
- When a page of the pull sheet is completed, confirms the positions of all rods in that group and initials the page.

NOTE: May adjust FCV10A to close FCV55A as power is raised.

Event 4
IRM "A" INOP

CONSOLE OPERATOR
When directed by Lead Evaluator,
Insert Malfunction:NM09A, IRM "A" FAILS INOP **TRG 3**

CREW

Responds to annunciators:

- *603102 RPS A NMS TRIP alarms*
- *603110 RPS A AUTO TRIP alarms*
- *603201 IRM TRIP SYSTEM A*

Notifies SRO

SRO

- Direct actions for IRM failure and consults TS 3.3.1.1.
- Directs contacting I & C or Work Week Manager to investigate the trip of IRM "A".

ROLE PLAY: If contacted as I & C or Work Week Manager respond as directed.

ROLE PLAY: If necessary, call the control room as the Ops Manager and prompt the crew to continue the startup. At this point there is nothing that requires halting the startup

- Direct bypassing IRM "A" and a reset of the half scram
- After the scram is reset exit the TS LCO
- Direct continuation of the startup

RO

- Recognize IRM "A" failure.
- Bypass IRM "A" per N2-OP-92, H.3.0.
- Diagnose IRM A Inop and NOT upscale by observing IRM recorder
- Resets half scam per N2-OP-97, Sect H.2.0
- At 2CEC*PNL603, reset SCRAM signals by momentarily placing applicable switches to RESET as follows:
  - Rx SCRAM RESET LOGIC A
  - Rx SCRAM RESET LOGIC C
  - Verifies PILOT SCRAM VALVE SOLENOID white lights A, C, E AND G are lit.

BOP

ROLE PLAY: If contacted as I & C or Work Week Manager respond as directed.

- Monitors plant parameters
- Contacts I & C or Work Week Manager to investigate the trip of IRM "A"

EVENT 5-
Refuel Floor Gas Monitor RM01-014 Failure upscale– secondary Containment fails to isolate.

CONSOLE OPERATOR
When directed by Lead Evaluator,
Insert remote rm01-014, Value 1E20
TRG 4

CREW

Respond to annunciator: 851254
Process Airborne Monitor Activated

Notify SRO

SRO

- Enters EOP-SC (Secondary Containment)
- Direct Entry to EOP –SC due to HVR Rad Alarm above an isolation setpoint
- May enter SOP-39 and directs an evacuation of the Refuel Floor (May evacuate Reactor Building).
- Direct Rx Bldg Isolated per EOP-HC
- Refers to technical Specification – 3.3.6.2, Table 3.3.6.2-1 and 3.6.4.2. which require isolating the Secondary Containment, placing SBGT in service.
- Contacts or directs contacting Work Week Manager or I & C to investigate failure
- Contacts or directs contacting RP to determine actual rad levels in the area and inspect the Rad Monitor.

RO

- Monitors reactor power, pressure and level

ROLE PLAY: If contacted as I & C, Work Week Manager and/or RP respond as directed.

ROLE PLAY: If contacted as RP respond that the RM01-014 has failed.

- Contacts Work Week Manager or I & C to investigate failure
- Contacts or directs contacting RP to determine actual rad levels in the area and inspect the Rad Monitor.

BOP

- Checks ARP for 851254
- Verifies Secondary Containment isolated.
- May go to PNL880 and determine RB Refuel Floor. 2HVR*RU214A is reading upscale and all other instruments are reading normal
- Notifies Crew
- Diagnoses failure of Secondary Containment to isolate
- Performs actions to start GTS IAW Hard Card, Attachment 4 as follows:
  - Verify closed:
  - HVR*AOD1B, RX BLDG VENT SUPPLY AIR ISOL
  - HVR*AOD10B, REFUELING FLOOR EXHAUST ISOL
  - HVR*AOD9B, RX BLDG GENERAL AREA EXH FN DISCH ISOL DMPR
  - HVR*AOD1A, RX BLDG VENT SUPPLY AIR ISOL
  - HVR*AOD10A, REFUELING FLOOR EXHAUST ISOL
  - HVR*AOD9A, RX BLDG GENERAL AREA EXH FN DISCH ISOL DMPR Verify:
  - HVR*AOD6B(A), EMER RECIRC INLET

DAMPER is open

- HVR*AOD34B(A), EMER RECIRC TEST DAMPER is closed
- SWP*AOV97B(A), RECIRC COOLING COIL FLOW RETURN modulating
- HVR*UC413B(A), RECIRCULATION FAN is running

BOP Cont.

- Verify ALL Reactor Building Unit Coolers NOT in PULL-TO-LOCK are running
- the following Standby Gas Treatment System actuations:
  - GTS*MOV1A, INLET RX BLDG VENTILATION open
  - GTS*AOV2A, TRAIN A INLET VLV open
  - GTS*FN1A, SBGTS FAN running
  - GTS*AOV3A, FAN 1A DISCH ISOL VLV open
  - GTS*MOV1B, INLET FROM RX BLDG VENTILATION open
  - GTS*AOV2B, TRAIN B INLET VLV open
  - GTS*FN1B, SBGTS FAN running
  - GTS*AOV3B, FAN 1B DISCH ISOL VLV open
- Confirm Reactor Building differential pressure being maintained at approximately -0.60 inches

EVENT 6

Steam Leak in the Drywell, Mode Switch Failure, RRCS/ARI will insert rods/Normal Drywell Spray

DIV1 LPCS and RHR A fail to initiate and RHR B trips when Drywell pressure exceeds 1.68 psig

When directed by lead examiner **Insert:**
MS04, STM LINE RUPT INSIDE PC TRG 5

RP03, RPS FAILURE TO SCRAM TRG 5

CREW

- Recognizes and responds to annunciator *603140 Drywell Pressure HIGH/LOW*
- Identifies and reports changing containment parameters.

SRO

- Acknowledges Scram Report
- Directs mode switch to shutdown as drywell pressure rises.
- Enters EOP-RPV, RPV Control.
- Exits EOP-RPV and enters EOP-C5 Failure to SCRAM.
- Directs ADS logic inhibited.
- Directs HPCS placed in pull-to-lock.
- Directs RRCS initiated Per EOP-6 Attachment 13. Rods Insert **(CRITICAL TASK 1.0)**
- Directs RPV level band
- Directs RPV pressure band
- Acknowledges second scram report when ARI successfully inserts control rods
- Exits EOP-C5, Re-Enters EOP-RPV

- Directs Inboard MSIV closure to control RPV depressurization
- If the Feed Pumps trip on a RPV high water level directs re-starting a Feed Pump when level clears.
- Directs operators to start LPCS and RHR A pumps.
- Directs RHR A placed in Suppression Chamber sprays.
- Directs the crew to monitor and report when Suppression Chamber pressure exceeds 10 psig.

RO

- Places reactor mode switch in shutdown
- Attempts manual scram using RPS pushbuttons
- Provides Scram Report, Recognizes and Reports all control rods did not insert
- Initiates RRCS IAW EOP-6, Att. 13 **(CRITICAL TASK 1.0)**
- Maintain RPV water level within the directed band of.
- May be required to manually start a Feed Pump if the HPCS pump is not placed in PTL before it injects and raises RPV water level above the Hi Level Trip.

BOP

- Inhibits ADS logic

- Places HPCS in pull-to-lock.
- When directed to initiate Suppression Chamber sprays:
  - Opens SWP*MOV90A.
  - Verifies RHR pump A running.
  - Verifies RHS*MOV24A overridden closed.
  - Opens RHS*MOV33A to establish SC spray flow.

EVENT 7 and 8

Preset malfunction RH14A and RH01B, DIV 2 becomes effective and RHR Pump B trips if/when started.

Failure of RHS MOV15A

CREW

Diagnoses failure and reports:

- DIV1 ECCS pumps fail to initiate PCS and RHS 'A'
- RHR B trips when it receives a start signal
- Failure of RHS MOV15A
- Annunciator 601448 alarms

SRO

- Recognizes/Responds to crew communication that Division I ECCS failed to auto initiate when expected
- Directs Manual initiation of Division I ECCS
- May direct injection prevented from LP ECCS not needed for Core Cooling (RPV Override) before RPV pressure drops to 400 psig.
- When told that Suppression Chamber pressure exceeds 10 psig Directs the following:
  - Drywell Unit Coolers tripped.
  - Verifies Recirc Pumps tripped

- Verifies within Drywell Spray Initiation Limit Curve
  - Directs spraying the Drywell using RHR A and defeating the DW Spray interlocks per EOP-6, Att. 22
  - When informed that RHS MOV15A cannot be opened, directs operator to establish DW sprays using SW IAW EOP-6, Att. 5
    (CRITICAL TASK 2.0)

RO

- Takes action to manually initiate Div I ECCS
- If directed, prevents LP ECCS injection before RPV pressure drops to 400 psig (EOP-RPV override)
- As Directed Injects with Feedwater, RCIC and or HPCS to maintain RPV water level in the directed band (160" – 200")
- When directed trips Recirculation Pumps (if necessary).

BOP

NOTE: when the Operator at P601 positions the cont sw for 2RHS*MOV15A to OPEN the following occurs:
*AN 601448 RHR A SYSTEM VALVES MOTOR OVERLOAD alarms, system INOP Status Light, RHR TO DW SPRAYS RHS*MOV15A illuminates, AND Position indication (Red and Green) for RHS*MOV15A go out*

- Establishes DW sprays using SW IAW EOP-6, Att. 22
- Recognizes failure of RHS*MOV15A to open and reports issue to SRO
- When directed aligns Service Water to spray using N2-EOP-06, Attachment 5. **(CRITICAL TASK 2.0)**
  - Places RHS*P1B in PTL
  - Close RHS*MOV12B

	○ Open RHS*MOV116 ○ Open RHS*MOV115 • Sprays Drywell and Suppression Pool using Service Water. ○ Verify RHS*MOV24B closed ○ Verify RHS*FV38B closed ○ Open RHS*MOV15B and 25B to spray Drywell.
Termination Criteria:	Drywell spray in service, RPV level in directed band