

Job Performance Measure

System: A.1-1: Conduct of OperationsJTA Task #: CPSES BANK: RO1803Task Title: Perform QPTR CalculationKSA Ref: 2.1.20 Executing ProceduresPEO: _____RO: 3.9SRO: 4.0Operator-s Name: _____Performance Environment: ADMIN CONTROL ROOM SIMULATORPerformance Method: PERFORMED SIMULATED
DISCUSSEDTime to complete JPM: Estimated _____ Actual _____

The operator-s performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator-s Signature: _____ Date: _____Comments (list all steps not satisfactorily completed): _____References:

OPT-302

Tools, Equipment, Job Aids, etc:

Calculator

Static Simulator

OPT-302-1 Instructor Copy

OPT-302-1 Working Copy

ROA1

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

	TDM-101A-2 Working Copy
--	-------------------------

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

The Unit Supervisor assigns you to manually perform OPT-302, Calculating Power Tilt Ratio.

Terminating Conditions:

OPT-302 is ready for Shift Manager review and signature.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*1	Operator locates all required forms to perform OPT.	Forms OPT-302-1 and TDM101A-2 located.	TDM data located in TDM Forms not TDM-101-A.	
*2	Operator competes the QPTR in OPT-302. CUE: <u>U</u> <u>L</u> N41B 192.0 193.0 N42B 254.0 220.0 N43B 213.0 209.0 N44B 214.0 209.0 TASK COMPLETE	QPTR calculation within tolerance listed on the Examiner Data Sheet and all Acceptance Criteria satisfied.		

ROA1

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

INITIATING CUE: The Unit Supervisor assigns you to manually perform OPT-302, Calculating Power Tilt Ratio.

Job Performance Measure

System: A.1-1: Conduct of OperationsJTA Task #: CPSES BANK: RO1010Task Title: Perform Shutdown Margin CalculationsKSA Ref: 2.1.23 Integrated Plant ProceduresRO: 3.9SRO: 4.0**Operator-s Name:** _____**Performance Environment:** ADMIN CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated _____ Actual _____

The operator-s performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator-s Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____References:
OPT-301, AReactor Shutdown Margin
Verification@
Technical Specifications
Startup and Operation ReportTools, Equipment, Job Aids, etc:
OPT-301
OPT-301-9
SOR
COLR

SROA1

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

Core Operating Limits Report	
------------------------------	--

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

The unit tripped from 100% power, equilibrium conditions 7 hours ago. All rods are fully inserted, RCS Tave is 375°F, and the boron concentration is 1250 ppm from a sample taken 6 hours after the trip. Core burnup is 8000 MWD/MTU. The computer program is unavailable and you are to perform a manual Shutdown Margin Verification per OPT-301, A Reactor Shutdown Margin Verification@

Terminating Conditions:

Shutdown Margin Verification has been completed per OPT-301 and OPT-301-9 filled out correctly.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Obtains OPT-301 and a working copy of form OPT-301-9	OPT-301 open for reference		
2	Completes top portion of OPT-301-9	Unit NO.; Cycle No: use current cycle; Mode: 3; Current date and time.		
3	Enters the RCS boron concentration on line A.1 and sample time.	Enters 1250 ppm on line A.1		
4	Enters RCS Tave on line A.2	Enters 375°F on line A.2		
5	Enters core burnup on line A.3 and checks the appropriate box.	Enters 8000 and check MOL box.		
6	Enters number of stuck RCCAs on line A.4.	Enters 0 on line A.4 for no stuck RCCAs.		
7	Refers to COLR and determines SDM reactivity requirement for present MODE. Enters value in line A.5.	Enters 1300 on line A.5.	Candidate may know from memory the requirement of 1.3% Δ K/K which is 1300 pcm.	
8	Determines the uncorrected minimum boron concentration from SOR table 5.13 and enters on line B.1.	Refers to SOR table 5.13 and enters correct value on line B.1.		
*9	Determines A.1 Δ B.1 and credit must be taken for Xe and Sm.	A.1 Δ B.1. Must take credit for Xe and Sm by performing section 8.1.4 and 8.1.5.		
10	Enters data for C.1 and C.2.	Data given in initiating cue.		
11	Determine Xe worth using SOR, table 5.21 and enters on line C.3 and checks box to indicate from SOR.	Enters value from SOR table 5.21 on line C.3.		

Job Performance Measure

12	Determines Sm worth using SOR, table 5.24 and enters on line C.4 and checks box to indicate from SOR.	Enters value from SOR table 5.24 on line C.4.		
13	Determines the IBW using table 5.8 from SOR and enters value on line D.1.	Enters IBW from table 5.8 of SOR on line D.1		
14	Determines value for most reactive RCCA from table 5.16 of SOR and enters value on line D.2.	Enters value of most reactive RCCA from table 5.16 of SOR and enters on line D.2.		
15	Performs calculation of OPT-301-9, line D.3 to determine worth correction and enters value on line D.3.	Performs calculation of OPT-301-9, line D.3, using 0 for RCCAs and enters value on line D.3.		
16	Determines boron correction factor from Figure 5.36 of SOR and enters on line D.4.	Enters value for boron correction factor from Figure 5.36 of SOR on line D.4.		
17	Performs calculation of OPT-301-9, line D.5, to determine the IBW for minimum SDM and enters results on line D.5.	Performs calculation of line D.5 to determine IBW for minimum SDM and enters on line D.5		
*18	Determine if SDM requirements are met and completes line F.1.	Verifies boron concentration entered on line A.1 _ line D.6 and circles YES on line F.1.		
	TASK COMPLETE			

Job Performance Measure**INITIATING CUE:**

The unit tripped from 100% power, equilibrium conditions 7 hours ago. All rods are fully inserted, RCS Tave is 375°F and the boron concentration is 1250 ppm from a sample taken 6 hours after the trip. Core burnup is 8000 MWD/ MTU. The computer program is unavailable and you are to perform a manual Shutdown Margin Verification per OPT-301, A Reactor Shutdown Margin Verification@

Job Performance Measure

System: A.1-2: Conduct of OperationsJTA Task #: ROA2 (NEW)Task Title: Perform an RCS Inventory BalanceKSA Ref: 2.1.23 Integrated Plant ProceduresPEO: _____RO: 2.8SRO: 3.1Operator-s Name: _____Performance Environment: ADMIN CONTROL ROOM SIMULATORPerformance Method: PERFORMED SIMULATED
DISCUSSEDTime to complete JPM: Estimated _____ Actual _____

The operator-s performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator-s Signature: _____ Date: _____Comments (list all steps not satisfactorily completed): _____References:

OPT-303

Tools, Equipment, Job Aids, etc:

Calculator

Static Simulator

OPT-303-1 (with initial and final data pre-recorded)

Job Performance MeasureSafety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

The Unit Supervisor assigns you to manually perform OPT-303, RCS Water Inventory calculation. The data have already been collected over the previous two hours.

Terminating Conditions:

OPT-303 is ready for Shift Manager review and signature.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*1	Operator locates all required forms to perform OPT.	Form OPT-303-1.		
*2	Operator completes the calculations. TASK COMPLETE			

Job Performance Measure

INITIATING CUE: The Unit Supervisor assigns you to manually perform OPT-303, RCS Water Inventory calculation. The data have already been collected over the previous two hours.

Job Performance Measure

System: A.1-2: Conduct of Operations**JTA Task #:** CPSES BANK: RO1804A**Task Title:** Perform Calorimetric Heat Balance Data Collection**KSA Ref:** 2.1.25 Obtain/Interp. Performance Data**PEO:** _____**RO:** 2.8**SRO:** 3.1**Operator's Name:** _____**Performance Environment:** ADMIN CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated _____ Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> OPT-309, AUnit Calorimetric@, step 8.2	<u>Tools, Equipment, Job Aids, etc:</u> OPT-309, (Working Copy) Calculator
--	--

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

You have been directed to collect and record the data, on Unit 1, for a Unit Calorimetric, in accordance with OPT-309, step 8.2.1. The plant computer and the Leading Edge Flowmeter are unavailable for use. All prerequisites have been completed and steam generator blowdown is in service.

Terminating Conditions:

OPT-309, Form 11 is completed with one set of data.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Enter the CPSES Unit number for which this test is being performed.	Unit 1, entered in the >Parameter= block of form OPT-309-1.		
*2	Obtain the feedwater flow data and enter the results in the appropriate boxes of section C. CUE: Each indicator is 3.7 to 3.8	Same as step using: FI-510A FI-511A FI-520A FI-521A FI-530A FI-531A FI-540A FI-541A		
*3	Obtain the feedwater temperature for each steam generator and enter the results in the appropriate column of section D. CUE: Each indicator is 438 to 440.	Same as step using instruments: TI-2177A TI-2178A TI-2179A TI-2180A		
*4	Obtain the feedwater pressure for each steam generator and enter results in appropriate column of Section E. CUE: Each indicator is _____	Same as step using instruments: PI-2138 PI-2139 PI-2140 PI-2141		
*5	Obtain the steamline pressures for each steam generator and enter the results in the appropriate column of section F. CUE: Each indicator is 1000 to 1010.	Same as step using instruments: PI-514A PI-515A PI-516A PI-524A PI-525A PI-526A PI-534A PI-535A		

Job Performance Measure

		PI-536A PI-544A PI-545API-546A		
*6	Obtain the total steam generator blowdown flow and temperature and enter the result in the appropriate column of section G. CUE: The indicator is 150 to 155 psig and 140°F.	Same as step using instrument: FI-5219A FI-5182A		
*7	Obtain the percent of rated thermal output from the power range NIS and enter the results in the appropriate column of section H. CUE: Each instrument is indicating 99.5 to 100.	Same as step using NIS Instruments: N-41A N-42A N-43A N-44A		
8	Obtain the percent of Rated Thermal Power for the N-16 Power channels in the appropriate column of Section 1. CUE: Each indicator is _____	JI-411A JI-421A JI-431A JI-441A		
9	Repeat the above steps to obtain a total of three data sets. CUE: Continue with the procedure using only one set of data points.	Same as step.		
10	Enter signature, the time data collection was completed and the date on which the data was collected into the appropriate spaces located at the bottom of Form OPT-309-11. TASK COMPLETE	Same as step.		

Job Performance Measure

INITIATING CUE: You have been directed to collect and record the data, on Unit 1, for a Unit Calorimetric, in accordance with OPT-309, step 8.2.1. The plant computer and the Leading Edge Flowmeter are unavailable for use. All prerequisites have been completed and steam generator blowdown is in service.

Job Performance Measure

System: A.2: Equipment ControlJTA Task #: ROA3 (NEW)Task Title: Identify Errors in a Faulted Clearance (Tagout)KSA Ref: 2.2.13 Tagging and Clearance Proc.PEO: _____RO: 3.6SRO: 3.8**Operator's Name:** _____**Performance Environment:** ADMIN CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated _____ Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____References:STA-605, AClearance and Safety Tagging, @
Revision 14
OWI-110, AOperations Department Work Control
and Clearance Guideline, @Revision 11Tools, Equipment, Job Aids, etc:

ROA3

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

Dwg M1-206, Sheet 1	
---------------------	--

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

The clearance was prepared by an Atrainee@ and you have been asked by the Work Control Supervisor to review the prepared clearance as a qualified clearance preparer. Identify the three substantive errors associated with **the clearance boundaries**.

Terminating Conditions:

Finishes review of the clearance.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Provide candidate with completed copy of the initiating cue	Candidate should review Admin JPM and initiating cue		
2*	Identifies 3 errors	<p>Candidate identifies the following 3 errors:</p> <ol style="list-style-type: none"> 1. IAF-0070 (AFW pump discharge to CST) is REQUIRED to be tagged - not tagged 2. Service Water Suction Supply Valve - tag number incorrect: Tag is for IAF-0018, but should be for IAF-0019 3. 1AF-0067-RO is NOT isolated (part of Aminimum@ clearance boundary) 	<p>Errors can be found in ANY order.</p> <p>3 of 3 errors must be identified for the JPM to be sat.</p>	
	TASK COMPLETE			

Job Performance Measure

INITIATING CUE: The clearance was prepared by an Atrainee@ and you have been asked by the Work Control Supervisor to review the prepared clearance as a qualified clearance preparer. Identify the three substantive errors associated with **the clearance boundaries**.

Job Performance Measure

System: A.2: Equipment ControlJTA Task #: SROA3 (NEW)Task Title: Determine the End Time for an LCOKSA Ref: 2.2.23 Ability to Track LCOsPEO: _____RO: 2.6SRO: 3.8**Operator's Name:** _____**Performance Environment:** ADMIN CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED

DISCUSSED

Time to complete JPM: Estimated _____ Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> Technical Specifications	<u>Tools, Equipment, Job Aids, etc:</u> Technical Specifications
--	---

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

You are the Control Room Supervisor, the plant is stable in Mode 1.

--The AA@train SI pump has been declared inoperable. The time of discovery is 1000 on 12/08/2001. The AB@train SI is OPERABLE.

--Twelve (12) hours after the AA@train SI is declared inoperable, the AB@train RHR pump is declared inoperable.

--At 1000 on 12/09/2001, the AA@train SI pump is restored to OPERABLE status.

When must the AB@train RHR pump be restored to OPERABLE status to avoid commencing a unit shutdown, including any extensions permitted by Technical Specifications?

Terminating Conditions:

Upon Completion of this JPM, the operator will have determined that the extensions allowed by section 1.3, ACompletion Times®, would apply and that LCO 3.5.2 must be exited by 2200 on 12/11/2001.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	AA@train SI pump declared inoperable 1000 on 12/08/2001. The AB@train SI is OPERABLE. Enter LCO 3.5.2.	Action A. 72 hours to restore. 100% capacity of ECCS is still available. Restore by 1000 12/11/2001.		
*2	AB@train RHR pump is declared inoperable 2200 12/08/2001.	Still in LCO 3.5.2, Action A. 100% capacity of ECCS is still available. Restoration still 1000 12/11/2001.		
*3	At 1000 on 12/09/2001, the AA@train SI pump is restored to OPERABLE status.	Since the first component causing entry into LCO 3.5.2 was restored first, an extension to the completion time of 3.5.2 can be applied. Per Section 1.3, Extension is 24 hours from the original end of the time limit of the second component, whichever is less. Completion time would be extended 12 hours to 2200 12/11/2001.		
	TASK COMPLETE			

INITIATING CUE: You are the Control Room Supervisor, the plant is stable in Mode 1.

--The AA@train SI pump has been declared inoperable. The time of discovery is 1000 on 12/08/2001. The AB@train SI is OPERABLE.

Job Performance Measure

--Twelve (12) hours after the AA@train SI is declared inoperable, the AB@train RHR pump is declared inoperable.

--At 1000 on 12/09/2001, the AA@train SI pump is restored to OPERABLE status.

When must the AB@train RHR pump be restored to OPERABLE status to avoid commencing a unit shutdown, including any extensions permitted by Technical Specifications?

Job Performance Measure

System: A.3: Radiation ControlJTA Task #: ROA4 (NEW)Task Title: Interpret a Faulted Survey Map to Determine Entry RequirementsKSA Ref: 2.3.10 Guard Against Pers. ExposurePEO: _____RO: 2.9SRO: 3.3**Operator's Name:** _____**Performance Environment:** ADMIN CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated _____ Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> RPI-602	<u>Tools, Equipment, Job Aids, etc:</u> Faulted Survey Map
-------------------------------	---

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

Based on the survey map provided, determine the requirements to enter the are.

Terminating Conditions:

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1				
2				
3				
	TASK COMPLETE			

ROA4

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

INITIATING CUE: Based on the survey map provided, determine the requirements to enter the are.

Job Performance Measure

System: A.3: Radiation ControlJTA Task #: SROA4 (NEW)Task Title: Interpret a Faulted Survey Map to Determine Entry RequirementsKSA Ref: 2.3.10 Guard Against Pers. ExposurePEO: _____RO: 2.9SRO: 3.3**Operator's Name:** _____**Performance Environment:** ADMIN CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated _____ Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> RPI-602	<u>Tools, Equipment, Job Aids, etc:</u> Faulted Survey Map
-------------------------------	---

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

Based on the survey map provided, determine the requirements to enter the are.

Terminating Conditions:

SROA4

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1				
2				
3				
	TASK COMPLETE			

SROA4

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

INITIATING CUE: Based on the survey map provided, determine the requirements to enter the are.

Job Performance Measure

System: A.4: Emergency PlanJTA Task #: SROA5.1 (MOD)Task Title: Event ClassificationKSA Ref: 2.4.41 EAL ClassificationsPEO: _____RO: 2.3SRO: 4.1**Operator's Name:** _____**Performance Environment:** ADMIN CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated _____ Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> Procedure EPP-201, Assessment of Emergency Action Levels, Emergency Classification and Plan Activation@	<u>Tools, Equipment, Job Aids, etc:</u> Static simulator - following Scenario Run Day 1 (the scenario is actually Scenario 1)
---	---

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

THIS NEEDS TO BE COMPLETED IN CONJUNCTION WITH SCENARIO 1. Scenario 1 should be run on Day 1 of simulator runs. Do this JPM after the scenario is completed with the simulator in Afreeze.@

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

The simulator is in freeze. Based upon the current plant conditions and events during the scenario, determine the emergency classification and make applicable Protective Action Recommendations.

Terminating Conditions:

Event is classified as an ALERT

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Provide candidate with completed copy of the initiating cue	Candidate should review Admin JPM and initiating cue		
2	Candidate determines emergency classification for Loss of Offsite Power	Candidate determines that the classification for Loss of Offsite Power would be a NOUE (EPP-201)	Candidate should evaluate both events and then based on the individual classifications determine the Aoverall@ classification	
3	Candidate determines emergency classification for loss of electrical power	Candidate determines that loss of electrical power would be classified as an: ALERT		
4*	Candidate determines the overall classification	Candidate determines that the overall classification would be: ALERT		
	TASK COMPLETE			

Job Performance Measure

INITIATING CUE: The simulator is in freeze. Based upon the current plant conditions and events during the scenario, determine the emergency classification and make applicable Protective Action Recommendations.

Job Performance Measure

System: A.4: Emergency PlanJTA Task #: SROA5.2 (MOD)Task Title: Event ClassificationKSA Ref: 2.4.41 EAL ClassificationsPEO: _____RO: 2.3SRO: 4.1**Operator's Name:** _____**Performance Environment:** ADMIN CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated _____ Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> Procedure EPP-201, Assessment of Emergency Action Levels, Emergency Classification and Plan Activation@	<u>Tools, Equipment, Job Aids, etc:</u> Static simulator - following Scenario 2
---	--

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

THIS NEEDS TO BE COMPLETED IN CONJUNCTION WITH SCENARIO 2. Scenario 2 should be run on Day 2 of simulator runs. Do this JPM after the scenario is completed with the simulator in Afreeze.@

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

The simulator is in freeze. Based upon the current plant conditions and events during the scenario, determine the emergency classification and make applicable Protective Action Recommendations.

Terminating Conditions:

Event is classified as a SITE AREA EMERGENCY

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Provide candidate with completed copy of the initiating cue	Candidate should review Admin JPM and initiating cue		
2	Candidate determines emergency classification for ATWT	Candidate determines that the classification for ATWT would be a SITE AREA EMERGENCY	Candidate should evaluate both events and then based on the individual classifications determine the Aoverall@ classification	
3	Candidate determines emergency classification for SGTR	Candidate determines that SGTR would be classified as an: ALERT		
4*	Candidate determines the overall classification	Candidate determines that the overall classification would be: SITE AREA EMERGENCY		
	TASK COMPLETE			

Job Performance Measure

INITIATING CUE: The simulator is in freeze. Based upon the current plant conditions and events during the scenario, determine the emergency classification and make applicable Protective Action Recommendations.

Job Performance Measure

System: A.4: Emergency PlanJTA Task #: SROA5.3 (MOD)Task Title: Event ClassificationKSA Ref: 2.4.41 EAL ClassificationsPEO: _____RO: 2.3SRO: 4.1**Operator's Name:** _____**Performance Environment:** ADMIN CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated _____ Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> Procedure EPP-201, Assessment of Emergency Action Levels, Emergency Classification and Plan Activation@	<u>Tools, Equipment, Job Aids, etc:</u> Static simulator - following Scenario 3
---	--

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

THIS NEEDS TO BE COMPLETED IN CONJUNCTION WITH SCENARIO 3. Scenario 3 should be run on Day 3 of simulator runs. Do this JPM after the scenario is completed with the simulator in Afreeze.@

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

The simulator is in freeze. Based upon the current plant conditions and events during the scenario, determine the emergency classification and make applicable Protective Action Recommendations.

Terminating Conditions:

Event is classified as a SITE AREA EMERGENCY

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Provide candidate with completed copy of the initiating cue	Candidate should review Admin JPM and initiating cue		
2	Candidate determines emergency classification for the RCS Leak	Candidate determines that the classification for the RCS Leak would be a SITE AREA EMERGENCY	Candidate should evaluate both events and then based on the individual classifications determine the Aoverall@ classification	
3	Candidate determines emergency classification for ATWT	Candidate determines that ATWT would be classified as an: SITE AREA EMERGENCY		
4*	Candidate determines the overall classification	Candidate determines that the overall classification would be: SITE AREA EMERGENCY		
	TASK COMPLETE			

Job Performance Measure

INITIATING CUE: The simulator is in freeze. Based upon the current plant conditions and events during the scenario, determine the emergency classification and make applicable Protective Action Recommendations.

Job Performance Measure

System: A.4: Emergency PlanJTA Task #: ROA5 (NEW)Task Title: Initial EP Notifications to Offsite Agencies (TIME CRITICAL)KSA Ref: 2.4.39 RO's EP ResponsibilitiesPEO: _____RO: 3.3SRO: 3.1**Operator's Name:** _____**Performance Environment:** ADMIN CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated _____ Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> Procedure EPP-203, AEP Manual: Notification@	<u>Tools, Equipment, Job Aids, etc:</u> EPP-203-8 ANotification Message Form@(completed)
--	---

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

- 1) The offsite agencies must be notified within 15 minutes and the NRC within 60 minutes of the EVENT declaration. The time critical portions of this JPM begin when EPP-203-8 is handed to the applicant.
- 2) The intent of this JPM is for the applicant to make the correct and timely notifications in accordance with EPP-203, EP: Notifications. The intent is NOT to have the applicant read the same forms over and over again. For time considerations acknowledge the notification promptly.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

An ALERT has just been declared in Unit 1. The Notification Message Form (EPP-203-8) has been filled out and approved by the Shift Supervisor. No offsite agencies have been notified of the event at this time.

You are directed to perform **ALL OFFSITE** notifications associated with the ALERT using the Form provided in accordance with EPP-203. **Portions of this JPM are time critical.**

Terminating Conditions:

The Applicant notifies State/County officials within 15 minutes, then notifies the NRC within 60 minutes of the event declaration (event declaration time shall be when the EPP-203-8 form is handed to the applicant).

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Provide candidate with completed copy of the initiating cue	Candidate should review Admin JPM and initiating cue	Annotate the time of Event declaration as the time the Candidate receives EPP-203-8.	
2*	Candidate contacts DPS Waco, Somervell County, and Hood County within 15 minutes of event declaration and reads the information from EPP-203-8. CUE: All agencies acknowledge the notification.	TIME CRITICAL STEP		
3	Notify the NRC Resident Inspector. CUE: RI acknowledges.		Not an Offsite notification, but is in the EPP-203 at this step.	
4*	Candidate contacts NRC Incident Response Center within 60 minutes of event declaration and reads the information from EPP-203-8. CUE: ENS is not functional, so candidate will have to use an alternate means. NRC acknowledges the notification.	TIME CRITICAL STEP		
	TASK COMPLETE			

Job Performance Measure

INITIATING CUE: An ALERT has just been declared in Unit 1. The Notification Message Form (EPP-203-8) has been filled out and approved by the Shift Supervisor. No offsite agencies have been notified of the event at this time.

You are directed to perform **ALL OFFSITE** notifications associated with the ALERT using the Form provided in accordance with EPP-203. **Portions of this JPM are time critical.**

Comanche Peak Steam Electric Station ILE-11/2002

Job Performance Measure

System: Loss of IRNI**JTA Task #:** CPSES BANK: RO1819**Task Title:** Respond to IR NIS Malfunction (ALTERNATE PATH)**KSA Ref:** APE.033.AK3.02**AO:** **RO:** 3.6 **SRO:** 3.9**Operator-s Name:**PLANT **CONTROL ROOM** SIMULATORPERFORMED **SIMULATED** DISCUSSED

Actual

The operator-s performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator-s Signature: _____ Date:

Comments (list all steps not satisfactorily completed):References:

ABN-702, Intermediate Range
Instrumentation@
7247D05, Sh.3
7247D05, Sh. 4

Tools, Equipment, Job Aids, etc:

For simulator setup, initialize ~27% power IC, and go to
RUN. Enter malfunction NI02A @ 1E-3.

Comanche Peak Steam Electric Station ILE-11/2002

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to Manipulate any plant components.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

You are the Reactor Operator.

The plant is at ~ 27% power and reducing load for a required outage. The IR NIS channel N35 failed high. Perform the actions required for the failed IR detector, as the shutdown continues. Tech Spec concerns will be addressed by the Unit Supervisor.

Terminating Conditions:

After P-6 status is verified.

STEP # *Critical	ELEMENT	STANDARD	NOTES	SAT
				UNSAT
1	Verify Reactor NOT tripped. CUE: Reactor Shutdown in progress. Power level has been reduced to 20% as indicated on NI-	Load decrease in progress, performing plant shutdown.	Various indications of plant power could be used NI, N-16, Power L on PCS to verify power level	

Comanche Peak Steam Electric Station

ILE-11/2002

Job Performance Measure

STEP # *Critical	ELEMENT	STANDARD	NOTES	SAT UNSAT
	41/44.			
2	Verify Reactor power >P-6 setpoint (1E-10 amps). CUE: PCIP, 2.5, is LIT. NI-36 reads ($\sim 1 \times 10^{-4}$ amps)	Permissive window PCIP, 2.5, SR RX TRIP BLK PERM P-6, checked. (should be LIT) NI-36 (u N-I-36B or N-36 meter at DR drawer) $\geq 1 \cdot 10^{-10}$ amps	If I&C is contacted, then inform that the P-6 interlock will <u>not</u> be corrected during this JPM.	
3	Verify power level greater than P-10 setpoint (10%). CUE: Power level has been reduced to 15% as indicated on NI-41/44.	Checks power level on NI-41/44. (Could also check PCIP 1.6 Rx Window Lit and/or TSLB's NC-41M, 42M, 43M, and 44 M lit.		
4	Verify Reactor power reduction NOT in progress or required. CUE: Reactor Shutdown in progress and required.	Load decrease in progress, performing plant shutdown.		
*5	Bypass failed IR channel high flux trip prior to reducing power below P-10. CUE: Switch is in BYPASS LEVEL TRIP BYPASS light and ALB-6D, 4.1, both LIT. CUE: Power level has been reduced to 4×10^{-11} amps as indicated on NI-36. SR Channels N-31 & N-32 indicates 3E3 cps.	N35 LEVEL TRIP switch on NIS cabinets taken to BYPASS (prior to reducing power below 10% as indicated on the PR NIS). The following are checked: LEVEL TRIP BYPASS light on Intermediate Range drawer N35. Annunciator window ALB-6D, 4.1, SR.IR TRIP BYP.	At NIS rack (cabinet) On CB-07	

**Comanche Peak Steam Electric Station
ILE-11/2002****Job Performance Measure**

STEP # *Critical	ELEMENT	STANDARD	NOTES	SAT UNSAT
6	Verify P-6 interlock in required state. CUE: PCIP, 2.5, is LIT. NOTE: This step is N/A if ran on the Simulator.	Permissive window PCIP, 2.5, SR RX TRIP BLK PERM P-6, checked. (should be DARK)	If I&C is contacted, then inform that the P-6 interlock will <u>not</u> be corrected during this JPM. TASK COMPLETE	

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

INITIATING CUE:

You are the Reactor Operator.

The plant is at 27% power and reducing load for a required outage. The IR NIS channel N35 failed high. Perform the required action for the failed IR Detector as the shutdown continues. Tech Spec concerns will be addressed by the Unit Supervisor.

Job Performance Measure

System: Emergency Core Cooling SystemJTA Task #: CPSES BANK (MOD): RO1501Task Title: Fill the Accumulators (ALTERNATE PATH)KSA Ref: SF2.006.A1.13PEO:RO:

3.5

SRO:

3.7

Operator-s Name: _____Performance Environment: PLANT CONTROL ROOM SIMULATORPerformance Method: PERFORMED SIMULATED
DISCUSSEDTime to complete JPM: Estimated 20 min Actual _____

The operator-s performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator-s Signature: _____ Date: _____Comments (list all steps not satisfactorily completed): _____References:

SOP-202A(B), ASafety Injection Accumulators

Tools, Equipment, Job Aids, etc:

Simulator B 100%; use malfunction SI02D to drain accumulator 4 to 45%; remove malfunction and clear

Job Performance Measure

SOP-201A(B), ASafety Injection System@	associated containment sump alarms; go to FREEZE; after initiating cue, go to run; after termination criteria met, go to freeze.
--	--

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to Manipulate any plant components.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

Accumulator #4 level is 45% and pressure is near the lower limit. The Unit Supervisor has directed you to refill the accumulator to 52%

Terminating Conditions:

Accumulator #4 level has been adjusted to 52% and pressure is between 623 psig and 644 psig.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Verify the RCS cold leg temperature is greater than 350°F. CUE: All temperatures indicate greater than 350°F	Operator checks RCS cold leg temperature indication on CB-05.	Operator should use SOP-202A(B) section 5.4.1 A Raising Accumulator Level@and start an SIP per SOP-201A(B), 5.4.1, A Starting an SIP in Recirculation@	
2	Verify SIS is in standby. CUE: SIS in standby per SOP-201A(B) Section 5.1.	Unit Supervisor informs operator SIS is in standby.		
3	Verify RCS pressure greater than 1700 psig. CUE: RCS pressure indicates 2235 psig	Operator checks RCS pressure indication on CB-05		
4	Verify SIP recirculation flowpath. CUE: When valve position is checked, each green light DARK, red light LIT.	The following valve positions are checked: <u>u</u> -8806 OPEN <u>u</u> -8814 A & B OPEN <u>u</u> -8813 OPEN		
5	Verify that lube oil level is normal, for pump being started. CUE: When PEO is called, state: lube oil level is normal.	PEO called to check lube oil level for the pump to be started.	Operator may use PCS points listed in SOP-201A(B) to monitor the SIP being started.	
6	Verify that lube oil cooler SSW return flow is normal for pump being started. CUE: SSW flow is normal			

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*7	Start the desired SIP. CUE: The SIP red light LIT, pump disch. press. is normal	Handswitch for selected SIP taken to START and indication checked: 1/ <u>u</u> -APSI1 or 1/ <u>u</u> -APSI2		
8	Verify SIP recirculation flow of 38 to 50 gpm. CUE: WHEN PEO is called state: <u>u</u> -FI-968 reads 43 gpm.	PEO called to read flow on <u>u</u> -FI-968.		
*9	Open 1/ <u>u</u> -8888, ACCUM FILL ISOL VLV. CUE: Valve 1/ <u>u</u> -8888 red light LIT, green DARK	Handswitch for 1/ <u>u</u> -8888 held in OPEN position and position checked .		
*10	Open 1/ <u>u</u> -8871, SI TEST HDR RET ISOL VLV CUE: Valve 1/ <u>u</u> -8871, red light LIT, green DARK.	Handswitch for 1/ <u>u</u> -8871 held in OPEN position and position checked.		
*11	Open 1/ <u>u</u> -8878D, ACCUM 4 FILL VLV. CUE: Valve 1/ <u>u</u> -8878D red light LIT, green DARK	Handswitch for 1/ <u>u</u> -8878D placed in OPEN position and position checked.		
12	Monitor accumulator 4 level CUE: Accumulator 4 levels are _ 52%.	The following meters are checked: <u>u</u> -LI-956 <u>u</u> -LI-957	If done on SIM operator should wait until level is ~52% before continuing.	
*13	Close 1/ <u>u</u> -8878D, ACCUM 4 FILL VLV. CUE: Valve 1/ <u>u</u> -8878D green light LIT, red DARK. When independent verification is requested, then inform that it	Handswitch for 1/ <u>u</u> -8878D placed in closed position and position checked.	Independent verification is necessary for the completion of this step either now or at the completion of this procedure.	

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
	has been done.		of this procedure.	
14	Ensure that accumulator 4 level is between 39% - 61% and record level. CUE: Accumulator 4 level indicates <u>52</u> %.	The following meters are checked: <u>LI-956</u> <u>LI-957</u>		
15	Close 1/ <u>8871</u> and 1/ <u>8888</u> . CUE: Both valves indicate green light LIT, red DARK.	The following valves are closed: ____ 1/ <u>8871</u> ____ 1/ <u>8888</u>		
16	Stop the SI Pump and place its handswitch in AUTO. CUE: SI Pump handswitch in AUTO.	Pump switched off and handswitch placed in AUTO.		
17	Verify 1/1-8821A(B) SIP 1(2) XTIE VLV open. CUE: Valves indicates red light LIT, green DARK.	Verify 1/1-8821A(B) SIP 1(2) XTIE VLV open.		
*18	Ensure Accumulator #4 pressure is 623-644psig. CUE: 1-PI-966 and 1-PI-967 indicate 655 psig.	Check Accum. 4 pressure 623-644 psig: ____ 1-PI-966 ____ 1-PI-967		
*19	Close 1/1-8880, SI/PORV ACCUM N2 ISOL VLV. CUE: Valves indicates green light LIT, red DARK.	Close 1/1-8880, SI/PORV ACCUM N2 ISOL VLV.		
20	Cycle 1-HC-943, ACCUM 1-4 VENT CTRL, to vent N2 header. CUE: Valve cycled.	Cycle 1-HC-943, ACCUM 1-4 VENT CTRL, to vent N2 header.		
*21	Open 1/1-8875D, ACCUM 4 N2 SPLY/VENT VLV. CUE: Valves indicates red light LIT, green DARK.	Open 1/1-8875D, ACCUM 4 N2 SPLY/VENT VLV.		

Job Performance Measure

*22	Throttle open 1-HC-943, ACCUM 1-4 VENT CTRL and shut when pressure 623-644 psig. CUE: Valve cycled. 1-PI-966 and 1-PI-967 indicate 640 psig.	Throttle open 1-HC- 943, ACCUM 1-4 VENT CTRL and shut when pressure 623-644 psig. ____ 1-PI-966 ____ 1-PI-967		
	TASK COMPLETE			

Job Performance Measure

INITIATING CUE: Accumulator #4 level is 45% and pressure is near the lower limit. The Unit Supervisor has directed you to refill the accumulator to 52%

Job Performance Measure

System: Reactor Protection SystemJTA Task #: CPSES BANK: RO1601Task Title: Place Failed Pressurizer Pressure Channel in Trip ConditionKSA Ref: SF7.012.A4.04PEO: _____RO: 3.3SRO: 3.4**Operator's Name:** _____**Performance Environment:** PLANT CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated 10 Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> ABN-705, APressurizer Pressure Instrumentation Malfunction@	<u>Tools, Equipment, Job Aids, etc:</u> Working copy of ABN-705, Att 2,3,4
--	---

Job Performance MeasureSafety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

A failure low of Pressurizer pressure channel PT-455 has occurred during full power operation. The alternate channel has been selected for control and recording. You are directed to place the appropriate bistables in the tripped condition and verify the appropriate alarms and trip status lights.

Terminating Conditions:

The appropriate bistables have been placed in the tripped condition and verified utilizing the appropriate annunciator alarms and trip status lights.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Locate the appropriate bistable test switches.	Protection set 1, card frame 8.		
*2	Place SW-1 on Card 72 in the CLOSED position. CUE: SW-1 is in the CLOSED (UP) position.	SW-1 is on card 72; 1 st row and 7 th column from right of frame 8. Simulated placed in the CLOSED (UP) position.		
*3	Ensure BS-1 and BS-2 on card 21 in the NORM position. CUE: The bistable switches are in the NORM (UP) position.	Top 2 bistable switches on card 21 (1 st row and 6 th column from right of frame 8) checked in the NORM (UP) position.		
*4	Ensure BS-1, BS-2, BS-3 and BS-4 on card in the NORM (UP) position. CUE: The bistable switches are in the NORM (UP) position.	All bistable switches on card 22 (top row and 2 nd column from right of frame 8) checked in the NORM (UP) position.		
*5	Place SW-5 on card 74 in the CLOSED (UP) position. CUE: The bistable switch is in the CLOSED (UP) position.	The switch is on card 74 (2 nd row and 7 th column from right of frame 8) simulated placed in the CLOSED (UP) position.		
6	Ensure BS-1, BS-2, BS-3 and BS-4 on card 46 are in the NORM (UP) position. CUE: The bistable switches are in the NORM (UP) position.	All bistable switches on card 46 (2 nd row and 2 nd column from right of frame 8) checked in the NORM (UP) position.		

Job Performance Measure

7	<p>Verify appropriate annunciator alarms on.</p> <p>CUE: Annunciator windows ALB-5B, 3.4 and 4.4; ALB-5C, 1.5, 2.5, 2.6, 3.1 and 3.5 and ALB-6D, 2.13,3.10 and 3.14 are all lit.</p>	<p>The following annunciator windows are checked:</p> <p>ALB-5B, 3.4, PRZR 1 of 4 PRESS LO</p> <p>ALB-5B, 4.4, PRZR 1 of 4 SI PRESS LO</p> <p>ALB-5C, 1.5, ANY N16 DEV HI/ LO</p> <p>ALB-5C, 2.5, 1of 4 OT N16 HI</p> <p>ALB-5C, 2.6, 1of 4 OP N16 HI</p> <p>ALB-5C, 3.1, PRZR 1 of 4 PRESS HI</p> <p>ALB-5C, 3.5, ANY TAVE DEV HI/LO</p> <p>ALB-6D, 2.13, 1of 4 OP N16 ROD STOP & TURB RUNBACK</p> <p>ALB-6D, 3.10, 1of 4 TAVE LO-LO</p> <p>ALB-6D, 3.14, 1of 4 OT N16 ROD STOP & TURB RUNBACK</p>		
---	---	---	--	--

Job Performance Measure

8	<p>Verify appropriate trip status lights ON.</p> <p>CUE: Trip status lights TSLB-1, 1.7, TSLB-3. 1.1, TSLB-5, 1.2, 1.3, 1.8 and 1.9 and TSLB-9, 1.3, 1.4, 1.5, and 1.9 are LIT.</p>	<p>The following trip status lights are checked:</p> <p>TSLB-1, 1.7, PRZR PRESS LO PB-455D TSLB-3,1.1, RC LOOP 1 TAVE LO TB-421G TSLB-5, 1.2, PRZR PRESS LO PB-455C TSLB-5, 1.3, PRZR PRESS HI PB-455A TSLB-5, 1.8, RC LOOP 1 OT N16 TB-411C TSLB-5, 1.9, RC LOOP 1 OP N16 JB-411D TSLB-9, 1.4, OT N16 ROD STOP & TURB RUNBACK TB-411D TSLB-9, 1.5, OP N16 ROD STOP & TURB RUNBACK TB-411D TSLB-9, 1.9, RC LOOP 1 TAVE LO-LO TB-412D</p>		
	STUDENT INDICATES TASK COMPLETE.			

Job Performance Measure

INITIATING CUE:

A failure low of Pressurizer pressure channel PT-455 has occurred during full power operation. The alternate channel has been selected for control and recording. You are directed to place the appropriate bistables in the tripped condition, and verify the appropriate annunciator alarms and trip status lights.

Job Performance Measure

System: Main Feedwater SystemJTA Task #: CPSES BANK: RO1833Task Title: FW Flow Instrument MalfunctionKSA Ref: SF4.059.A2.11PEO: _____RO: 3.0SRO: 3.3**Operator's Name:** _____**Performance Environment:** PLANT CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated 10 min. Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> ABN-708, AFeedwater Flow Instrumentation Malfunction@	<u>Tools, Equipment, Job Aids, etc:</u> Reset simulator to at power IC. Insert malfunction RX01C at 0%. Go to RUN. After ALB-08A, 2.8 and 2.12 annunciate, go to FREEZE. After initiating cue given, go to RUN.
--	---

Job Performance MeasureSafety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

ALB-08A windows 2.8, "SG 2 STM FLO/FW FLO MISMATCH", AND 2.12, "SG 2 LVL DEV", have annunciated. You notice the controlling FW FLO channel to SG 2 (u-F1-520A) has failed low and inform the Unit Supervisor. The Unit Supervisor directs you to take the appropriate actions of ABN-708.

Terminating Conditions:

SG 2 Main Feed Regulating Valve is in Automatic

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*1	Take manual control of <u>u</u> -FK-520, SG 2 FW FLO CTRL. CUE: Amber light is LIT and white light is DARK.	Manual pushbutton on <u>u</u> -FK-520 depressed and amber light on manual pushbutton and white light on Auto pushbutton checked.		
2	Adjust feedwater flow to attain approximately 67% in SG 2. CUE: SG NR level indication for SG 2 is reading 76%. CUE: SG NR level indication for SG 2 is approximately 67%. (64%).	SG 2 level is checked. Affected FCV adjusted to maintain SG level at program. Downward output pushbutton on <u>u</u> -FK-520 is depressed as required to reduce SG 2 level to 67% (64%).		
*3	Select the alternate feedwater flow channel. CUE: SG NR level is 67% (64%), STM FLO and FW FLO are matched. CUE: <u>u</u> -FS-520C is in the FY-521B position.	Handswitch <u>u</u> -FS-520C placed in FY-521B position.		
*4	Place SG Main Feedwater Control Valve in Auto. CUE: <u>u</u> -FK-520 is properly controlling in Auto and white light is LIT and amber light is DARK.	Auto pushbutton on <u>u</u> -FK-520 depressed and Auto pushbutton white light and manual amber light checked. Proper control is verified.		
	TASK COMPLETE			

Job Performance Measure

INITIATING CUE: ALB-08A windows 2.8, "SG 2 STM FLO/FW FLO MISMATCH", AND 2.12, "SG 2 LVL DEV", have annunciated. You notice the controlling FW FLO channel to SG 2 (u-F1-520A) has failed low and inform the Unit Supervisor. The Unit Supervisor directs you to take the appropriate actions of ABN-708.

Job Performance Measure

System: Emergency Plant Evolutions**JTA Task #:** CPSES BANK (MOD): AO5407A**Task Title:** In Response to a Fire in the Control Room or Cable Spreading Room, Perform PEO #1
Actions to Achieve Hot Shutdown (AB Actions Only)**KSA Ref:** APE.068.AA1.22**PEO:** X**RO:** 4.0**SRO:** 4.3**Operator's Name:** _____**Performance Environment:** PLANT CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED

DISCUSSED

Time to complete JPM: Estimated 15 minutes Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> ABN-803A(B), "Response to a Fire in the Control Room or Cable Spreading Room"	<u>Tools, Equipment, Job Aids, etc:</u> ABN-803A(B), Attachment 3 Gloves, flashlight, valve operator, radio
---	--

<u>Safety Considerations:</u> <p>If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.</p>
<u>Comments:</u> <p>For JPMs which are to be APERFORMED, cues for indications and controls need not be given.</p>
<u>Instructions:</u> <p>You may use any approved reference materials, including logs. Make or simulate all written/oral reports as if the evolution is actually being performed. You are expected to discuss all steps you would take, including identifying what switches/indications you would use.</p>
<u>Initiating Cue:</u> <p>ABN-803A(B), "Response to a Fire in the Control Room or Cable Spreading Room", has been initiated. As PEO No. 1, you have obtained your radio for communications and have completed Attachment 3, through step h (g for Unit 2). Place charging in service and control seal injection per Attachment 3.</p>
<u>Terminating Conditions:</u> <p>The operator reports seal injection flow is established.</p>

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*1	<p>Proceed to AB 810 outside the Charging Pump Valve Room and manually open u-LCV-112E, RWST to CVCS Suction.</p> <p>CUE: <u>u-LCV-112E</u> indicates in the OPEN position.</p>	<p>MANUALLY OPEN <u>u-LCV-112E</u> by DISENGAGING the Motor Clutch and rotating the Handwheel counter clockwise (left). Observe local position indication (open).</p>	<p><u>u-LCV-112E</u>, RWST to CVCS Suction Valve is located in Aux. Bldg. 810' on the Southside (Northside) Corridor.</p> <p>The clutch disengage lever must be depressed until the LEVER is held in-place mechanically, after the handwheel has been rotated.</p>	
*2	<p>Proceed to AB 810, CCW PUMP <u>u-01</u> Room to:</p> <p>Transfer CCWP AREA FAN COOLER 09 CONTROL TO LOCAL</p> <p>START CCWP AREA FAN COOLER 09</p> <p>CUE: When Transfer Switch, <u>u-HS-5800B</u>, is taken to Local, Green light is ON.</p> <p>CUE: When Control Switch, <u>u-HS-5800C</u>, is taken to Start, Green light is OFF and Red light is ON.</p>	<p>Transfer CCWP AREA FAN COOLER 09 control to LOCAL and <u>START</u> CCWP AREA FAN COOLER 09, using TRANSFER SWITCH (<u>u-HS-5800B</u>) and CONTROL SWITCH (<u>u-HS-5800C</u>)</p>	<p>Transfer and start will be accomplished in the CCW PUMP <u>u-01</u>-ROOM located on AB 810'</p> <p>TRANSFER SWITCH is a 2-position maintain switch. LOCAL POSITION is to the right.</p> <p>U1 switch in CCW Pump 1-01 Room, U2 switch in hall outside CCW Pump 2-01 room.</p>	

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
	<p>If performing this JPM on Unit 1 then perform Step 3, then go to Step 6.</p> <p>If performing this JPM on Unit 2 then go to Step 4 and Step 5, then Step 6</p>			
*3	<p>(Unit 1 only)</p> <p>Manually OPEN 1-8111 CCP 1 & 2 MINI-FLOW VALVE</p> <p>CUE: 1-8111 indicates in the OPEN position.</p>	Manually OPEN 1-8111 by disengaging the motor clutch and rotating the handwheel counter clock-wise (left). Observe local position indication.	1-8111 is located in the Charging Pump Valve Room.	
*4	<p>(Unit 2 only)</p> <p>Manually OPEN 2-8512B, CCP 2-01 ALT MINIFLOW DNSTRM ISOL VLV.</p> <p>CUE: 2-8512B indicates in the OPEN position.</p>	Manually OPEN 2-8512B by disengaging the motor clutch and rotating the handwheel counter - clock-wise (left). Observe local position indication (OPEN).	2-8512B is located in the Unit 2 822 Blender Room.	
*5	<p>(Unit 2 only)</p> <p>Manually OPEN 2-8511A, CCP 2-01 ALT MINIFLO UPSTRM ISOL VLV.</p> <p>CUE: 2-8511A indicates in the OPEN position.</p>	Manually OPEN 2-8511A by disengaging the motor clutch and rotating the hand-wheel counter clock-wise (left). Observe local position indication (OPEN).	2-8511A is located in the Unit 2 822 Blender Room.	
*6	<p>(Units 1 & 2)</p> <p>Manually CLOSE <u>u</u>-LCV-112C, VCT OUTLET ISOLATION.</p> <p>CUE: <u>u</u>-LCV-112C indicated in the CLOSED position.</p>	Manually CLOSE <u>u</u> -LCV-112C by disengaging the motor clutch and rotating the handwheel clock-wise (right). Observe local position indication (CLOSED).	<u>u</u> -LCV-112C is located in each respective Unit's Charging Pump Valve Room.	
*7	<p>Manually CLOSE <u>u</u>-8483B-R0, CCP <u>u</u>-01/ <u>u</u>-02 CHRGR FLO CTRL VLV OUT VLV RMT OPER</p> <p>CUE: <u>u</u>-8483-R0 indicates in the CLOSED position.</p>	CLOSE <u>u</u> -8483-R0 by rotating the handwheel clock-wise (right). Observe local position indication (CLOSED).	<u>u</u> -8483 can be operated locally in each respective unit's Charging Pump Valve Room or Remotely in each respective Unit's Blender Room.	

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
	CLOSED position.			
8	<p>Contact the RO and inform him that the charging pump may be started.</p> <p>CUE: Charging Pump has been started.</p> <p>CUE: RO directs opening <u>u-8483B</u>, CCP <u>u-01/ u-02</u> CHRG FLO CTRL VLV OUT VLV RMT OPER, 2 full turns and report back.</p>	The RO is contacted by either 2-way radio or gaitronics.	RO is located at the RSP.	
*9	<p>Throttle OPEN <u>u-8483B-R0</u>, CCP <u>u-01/ u-02</u> CHRG FLO CTRL VLV OUT VLV RMT OPER, is 2 turns open. RO contacted.</p> <p>CUE:RO understands <u>u-8483B</u> is 2 turns open.</p>	Throttle OPEN <u>u-8483B</u> RO 2 full turns by rotating the handwheel or Remote Operator counter clock-wise (left) and reports back to the RO at the RSP.		
	TASK COMPLETE			

Job Performance Measure

INITIATING CUE: ABN-803A(B), "Response to a Fire in the Control Room or Cable Spreading Room", has been initiated. As PEO No. 1, you have obtained your radio for communications and have completed Attachment 3, through step h (g for Unit 2). Place charging in service and control seal injection per Attachment 3.

Job Performance Measure

System: Steam Generator Tube Rupture**JTA Task #:** CPSES BANK: AO3528**Task Title:** Locally Isolate Ruptured S/G**KSA Ref:** EPE.038.EA1.32**PEO:** X**RO:** 4.6**SRO:** 4.7**Operator's Name:** _____**Performance Environment:** PLANT CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated _____ Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> EOP-3.0A(B), Steam Generator Tube Rupture	<u>Tools, Equipment, Job Aids, etc:</u> EOP-3.0A(B), Attachment 4
--	--

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

For JPMs which are to be ~~APERFORMED~~, cues for indications and controls need not be given.

Instructions:

You may use any approved reference materials, including logs. Make or simulate all written/oral reports as if the evolution is actually being performed. You are expected to discuss all steps you would take, including identifying what switches/indications you would use.

Initiating Cue:

Procedure EOP-3.0A(B), "Steam Generator Tube Rupture" is in progress. The Control Room has directed you to perform attachment 4 as part of Step 3 (Isolate Flow From Ruptured SG(s))

Terminating Conditions:

All valves that require local isolation as per attachment 4, have been closed.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
*1	CUE: 1-HS-3228 will NOT close from Control Room. Locally close 1SA-0005, U1 MS to AUX STM ISOL VLV	Valve closed	Located Unit 1 TB 778= NE Corner	

*2	CUE: The Control Room placed 41/2-SDA, STM DMP INTLK SELECT and 43/1-SDB, STM DMP INTLK SELECT in OFF to close the Steam Dump Valves but the valves did NOT close. Locally close the following valves: 1MS-0185, STM DMP TO CNDSR 1-A VLV 2369A UPSTRM ISOL VLV 1MS-0186, STM DMP TO CNDSR 1-A VLV 2370B UPSTRM ISOL VLV 1MS-0187, STM DMP TO CNDSR 1-A VLV 2370F UPSTRM ISOL VLV 1MS-0188, STM DMP TO CNDSR 1-A VLV 2370G UPSTRM ISOL VLV 1MS-0189, STM DMP TO CNDSR 1-A VLV 2369B UPSTRM ISOL VLV	All valves closed.	All valves located in TB 803= South of Main Condenser	
----	--	--------------------	---	--

Job Performance Measure

	<p>1MS-0190, STM DMP TO CNDSR 1-A VLV 2370D UPSTRM ISOL VLV</p> <p>1MS-0191, STM DMP TO CNDSR 1-B VLV 2369C UPSTRM ISOL VLV</p> <p>1MS-0192, STM DMP TO CNDSR 1-B VLV 2370C UPSTRM ISOL VLV</p> <p>1MS-0193, STM DMP TO CNDSR 1-B VLV 2370H UPSTRM ISOL VLV</p> <p>1MS-0194, STM DMP TO CNDSR 1-B VLV 2370J UPSTRM ISOL VLV</p> <p>1MS-0195, STM DMP TO CNDSR 1-B VLV 2370A UPSTRM ISOL VLV</p> <p>1MS-0196, STM DMP TO CNDSR 1-B VLV 2370E UPSTRM ISOL VLV</p>			
*3	<p>LOCALLY CLOSE THE FOLLOWING VALVES:</p> <p>1MS-0520, STM DMP STM TRAP 1-18 UPSTRM ISOL VLV</p> <p>1MS-0522, STM DMP STM TRAP 1-19 UPSTRM ISOL VLV</p> <p>1MS-0524, STM DMP STM TRAP 1-20 UPSTRM ISOL VLV</p>	All valves closed.	All valves located in TB 803= South of Main Condenser	

Job Performance Measure

	1MS-0526, STM DMP STM TRAP 1-21 UPSTRM ISOL VLV			
	1MS-0528, STM DMP STM TRAP 1-22 UPSTRM ISOL VLV			
	1MS-0530, STM DMP STM TRAP 1-23 UPSTRM ISOL VLV			
	1MS-0532, STM DMP STM TRAP 1-24 UPSTRM ISOL VLV			
	1MS-0534, STM DMP STM TRAP 1-25 UPSTRM ISOL VLV			
	1MS-0536, STM DMP STM TRAP 1-26 UPSTRM ISOL VLV			
	1MS-0538, STM DMP STM TRAP 1-27 UPSTRM ISOL VLV			
	1MS-0540, STM DMP STM TRAP 1-28 UPSTRM ISOL VLV			
	1MS-0542, STM DMP STM TRAP 1-29 UPSTRM ISOL VLV			

*4	CUE: The Main Feedwater Pumps are NOT being used to supply the Steam Generators the North side of the MFW	Both valves closed.	Valve located on North side of each FWP skid	
----	---	---------------------	--	--

Job Performance Measure

	<p>pump skids, close the following valves._</p> <p>1MS-0254, FWPT 1-A HP STM SPLY ISOL VLV</p> <p>1MS-0253, FWPT 1-B HP STM SPLY ISOL VLV</p>			
--	---	--	--	--

*5	<p>Locally close the following valves:</p> <p>1VD-0421, MS D/POT 1-03 TO CNDSR 1-A DRN HDR A ISOL VLV</p> <p>1VD-0424, MS D/POT 1-04 TO CNDSR 1-A DRN HDR A ISOL VLV</p> <p>1VD-0425, MS D/POT 1-09 TO CNDSR 1-A DRN HDR A ISOL VLV</p> <p>1VD-0426, MS D/POT 1-02 TO CNDSR 1-A DRN HDR A ISOL VLV</p> <p>1VD-0427, MS D/POT 1-28 TO CNDSR 1-A DRN HDR A ISOL VLV</p> <p>1VD-0428, MS D/POT 1-10 TO CNDSR 1-A DRN A ISOL VLV</p> <p>1VD-0429, MS D/POT 1-20 TO CNDSR 1-A DRN HDR A ISOL VLV</p> <p>1VD-0431, MS D/POT 1-13 TO CNDSR 1-A DRN HDR A ISOL VLV</p>	All valve closed	All valves accessible from operating deck located in the Vent and Drain Valve Alley above the EHC Skid center section.	
----	--	------------------	--	--

Job Performance Measure

	1VD-0432, MS D/POT 1-19 TO CNDSR 1-A DRN HDR A ISOL VLV 1VD-0433, MS D/POT 1-12 TO CNDSR 1-A DRN HDR A ISOL VLV 1VD-0437, MS D/POT 1-11 TO CNDSR 1-A DRN HDR A ISOL VLV			
*6	LOCALLY CLOSE THE FOLLOWING VALVES: 1MS-0028, SG 1-01 SMPL VLV 1MS-0065, SG 1-02 SMPL VLV 1MS-0136, SG 1-04 SMPL VLV 1MS-0291, SG 1-03 SMPL VLV	All valves closed.	All 4 valves located at Unit 1 TB 778=East Wall behind Vent chiller #5, 10 up	
	TASK COMPLETE			

Job Performance Measure

INITIATING CUE: Procedure EOP-3.0A(B), ASteam Generator Tube Rupture@is in progress. The Control Room has directed you to perform attachment 4 as part of Step 3 (Isolate Flow From Ruptured SG(s)).

Job Performance Measure

System: Emergency Diesel GeneratorJTA Task #: CPSES BANK: AO6311ATask Title: Perform a Local Emergency Start of a DG (RCA ENTRY REQUIRED)KSA Ref: SF6.064.A4.01PEO: XRO: 4.0SRO: 4.3**Operator's Name:** _____**Performance Environment:** PLANT CONTROL ROOM SIMULATOR**Performance Method:** PERFORMED SIMULATED
DISCUSSED**Time to complete JPM:** Estimated _____ Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

Job Performance Measure

<u>References:</u> SOP-609A(B), Diesel Generator System	<u>Tools, Equipment, Job Aids, etc:</u> SOP-609A(B) Section 1 through 4 and Section 5.2 of SOP-609A(B).
--	---

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

For JPMs which are to be ~~APERFORMED~~, cues for indications and controls need not be given.

NOTE: Step 9 (checking operating parameters) does NOT need to be performed for a RO and SRO because all are in spec. and no action is required.

Instructions:

You may use any approved reference materials, including logs. Make or simulate all written/oral reports as if the evolution is actually being performed. You are expected to discuss all steps you would take, including identifying what switches/indications you would use

Initiating Cue:

You have been directed to perform a Local Emergency Start of Train A(B) DG for testing. An Engine Water Roll Check, all prerequisites and all Maintenance Department pre-start activities have been performed. The Prompt Team and Chemistry have been informed. The ~~Aslow start~~ is NOT being performed. The DG is an auto-start status. This test does not meet the Surveillance Test requirements.

Terminating Conditions:

Train A(B) DG is running.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Notify Control Room	Starting the Local Emergency		
*2	<p>Start auxiliary lube oil pump by placing handswitch (<u>u</u>-HS-3411-1 Train A or <u>u</u>-HS-3412-1 Train B) in HAND.</p> <p>CUE: Auxiliary lube oil pump RED (ON) light is LIT and GREEN (OFF and AUTO) lights are DARK. Pressure on lube oil pressure gauge (<u>u</u>-PI-3411B-1B Train A or <u>u</u>-PI-3412B Train B) is 56 psig.</p>	Handswitch in HAND position and the lube oil pump running. Lube oil pressure should be 40-60 psig.	<p>Do not run auxiliary lube oil pump in HAND for more than 1 minute per shift without running the DG.</p> <p>Auxiliary lube oil pump handswitch is located on the Local Engine Control Panel.</p>	
*3	<p>Stop auxiliary lube oil pump by placing handswitch (<u>u</u>-HS-3411-1 Train A or <u>u</u>-HS-3412-1 Train B) in OFF then AUTO.</p> <p>CUE: Auxiliary lube oil pump RED (ON) light is DARK and GREEN (OFF and AUTO) lights are LIT.</p>	Auxiliary lube oil pump NOT running and handswitch in AUTO position.	<p>Diesel must be started within 60 seconds of stopping Aux. lube oil pump.</p> <p>If not started within 60 seconds must repeat above step of JPM.</p>	
*4	Take local control of DG by placing the Master Switch (<u>u</u> -HS-3413-3b, RLMS Train A or <u>u</u> -HS-3414-3B, RLMS Train B) in LOCAL.	The Master Switch in LOCAL position.	Master Switch is located on Local Generator Control Panel.	

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
	CUE: The Master Switch is in the LOCAL position.			
*5	Start the DG by placing the local emergency Stop-Start handswitch (<u>u</u> -HS-3413-4B, LOC/EMER/MAN/START Train A or <u>u</u> -HS-3414-4B LOC/EMER/MAN/START Train B) in START. CUE: Engine rpm is increasing.	Local emergency Stop-Start handswitch in START position and engine running.	Local emergency Stop-Start handswitch is located on the Local Generator Control Panel.	
6	Verify auxiliary lube oil pump handswitch (<u>u</u> -HS-3411-1 Train A or <u>u</u> -HS-3412-1 Train B) in AUTO and pump not running. CUE: Auxiliary lube oil pump RED (ON) light DARK and GREEN (OFF and AUTO) lights are LIT. Pump handswitch is in AUTO.	Auxiliary lube oil pump handswitch in AUTO position and pump NOT running.		
*7	Stop Auxiliary jacket water pump by placing handswitch (<u>u</u> -HS-3415-1 Train A or <u>u</u> -HS-3416-1 Train B) in OFF and then AUTO. Verify pump is not running. CUE: Auxiliary jacket water pump RED (ON) light DARK and GREEN (OFF and AUTO) lights are LIT. Pump handswitch is in AUTO.	Auxiliary jacket water pump handswitch in AUTO position and pump NOT running.	Auxiliary jacket water pump handswitch is located on the Local Engine Control Panel.	

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
8	Verify DG voltage is building and engine speed is normal. CUE: DG voltage is increasing and engine speed is 450 rpm. If Operator asks, voltage is 7000V.	DG voltage increasing and engine speed is between 440 and 475 RPM.	DG voltage is read on the Local Generator Control Panel. Engine speed is read on the Local Engine Control Panel.	
9	Check operating parameters: Lube oil pressure Turbo oil pressure, left bank Turbo oil pressure, right bank Jacket water pressure Fuel oil pressure, black-engine driven pump Engine speed CUE: L/O press = 53 psig T/O LF press = 28 psig T/O RF press = 27 psig JW press = 23 psig FO black press = 42 psig Engine speed = 450 rpm	Lube oil pressure Turbo oil pressure, left front Turbo oil pressure, right front Jacket water pressure Fuel oil pressure, black-engine driven pump Engine speed	RUNNING and READY TO LOAD lights are located on the Local Engine Control Panel. NOTE: TASK may be TERMINATED without having a Reactor Operator Log any of these values SINCE all will be in spec. and no action is required	
	TASK COMPLETE			

Job Performance Measure

INITIATING CUE:

You have been directed to perform a Local Emergency Start of Train A(B) DG for testing. An Engine Water Roll Check, all prerequisites and all Maintenance Department pre-start activities have been performed. The Prompt Team and Chemistry have been informed. The slow start is **NOT** being performed. The DG is an auto-start status. This test does not meet the Surveillance Test requirements.

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

System: Reactor Coolant

JTA Task #: CPSES BANK: RO1102

Task Title: Start/Stop RCP (ALTERNATE PATH)

KSA Ref: SF4.003.A4.06

PEO: _____

RO: _____

2.9

SRO: _____

2.9

Operator=s Name: _____

Performance Environment: PLANT CONTROL ROOM **SIMULATOR**

Performance Method: **PERFORMED** SIMULATED

DISCUSSED

Time to complete JPM: Estimated 20 min Actual _____

The operator=s performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY

UNSATISFACTORY

Reason, if unsatisfactory:

Evaluator=s Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____

References:

SOP-108A(B), AReactor Coolant Pump@

Tools, Equipment, Job Aids, etc:

SOP-108A/B (Working Copy). Reset to Heatup IC.

Comanche Peak Steam Electric Station
ILE-11/2002

Job Performance Measure

	Rack in #3 RCP breaker using Remote Function RCR14. Override Ammeter for RCP #3 to max when pump is started and delete override when pump is stopped.
--	---

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to Manipulate any plant components.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

IPO-001, "Plant Heatup From Cold Shutdown to Hot Standby", has progressed to the point of starting the third Reactor Coolant Pump per SOP-108. All prerequisites have been met and all steps have been completed through step 5.1.7 in SOP-108. All seal flows are within limits. You are directed to start #3 RCP continuing with step 5.1.8 of SOP-108.

Terminating Conditions:

The #3 RCP and its associated oil lift pump has been stopped.

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	<p>Verify the alarms on ALB-5A are clear</p> <p>CUE: Alarms clear.</p>	<p>The following alarms are checked clear:</p> <p>1.2 ANY RCP SEAL 1 LKOFF FLO HI</p> <p>1.6 ANY RCP SEAL WTR INJ FLOW LO</p> <p>2.2 ANY RCP SEAL 1 _P LO</p> <p>3.1 ANY RCP SEAL WTR STANDPIPE LVL HI</p> <p>3.2 ANY RCP SEAL 2 LKOFF FLO HI</p> <p>4.1 ANY RCP SEAL WTR STANDPIPE LVL LO</p> <p>3.4 RCP 3 UP BRG L/O RESVR LVL HI/LO</p> <p>3.5 RCP 3 LOW BRG L/O RESVR LVL HI/LO</p>		

2	<p>Verify proper cooling water flows.</p> <p>CUE: <u>FI-4683</u> indicates 175 gpm.</p> <p>CUE: <u>FI-4685</u> indicates 8 gpm.</p> <p>CUE: <u>FI-4684</u> indicates 355 gpm.</p>	<p>The following parameters are checked within the specified limits:</p> <p>RCP 3 UP BRG L/O CLR CCW RET FLO <u>FI-4683</u> indicates 150-190 gpm RCP 3 LOW BRG L/O CLR CCW</p>	(CB-03)	
---	--	---	---------	--

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

	<p>gpm. CUE: <u>FI-4686</u> indicates 40 gpm</p>	<p>RET FLO <u>FI-4685</u> indicates 5 to 10 gpm</p> <p>RCP 3 MOTOR AIR CLR CCW RET FLO <u>FI-4684</u> indicates 340 to 380 gpm</p> <p>RCP 3 THBR CLR CCW RET FLO <u>FI-4686</u> indicates 35 to 55 gpm</p>		
3	<p>Initiate trending of data for the affected RCP if not previously done.</p> <p>CUE: The Relief RO has initiated trending as required.</p>	<p>The plant computer is trending the points specified per SOP-108 Attachment 2</p>		
4	<p>Ensure the breaker for the #3 RCP is racked in.</p> <p>CUE: The breaker was previously racked in.</p>	<p>The #3 RCP breaker is racked in (verified by dispatching a PEO to check RCP #3 breaker on <u>A3</u> LOCALLY).</p>		
5	<p>Ensure the overcurrent trip selector switch is in the COLD LOOP position</p> <p>CUE: The selector switch was previously placed in this condition.</p>	<p>The #3 RCP Overcurrent Trip Selector switch is placed in the COLD LOOP position (verified by dispatching a PEO to check the switch is in the proper position at the RCP #3 Breaker on <u>A3</u> LOCALLY).</p>		
6	<p>Station personnel at #3 RCP to observe the pump.</p> <p>CUE: The RCP is not accessible</p>	<p>Operator asks if the RCP is accessible.</p>		
*7	<p>Start the #3 RCP oil lift pump</p> <p>CUE: Green light OFF Red</p>	<p>1/<u>PCPX3-LP</u>, RCP 3 OIL LIFT PMP, switch taken to the START</p>		

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

	light ON.	taken to the ASTART@ position B candidate verifies green light off and red light on and should mark time to verify pump runs for 2 minutes prior to starting #3 RCP.		
8	Check OIL PRESS permissive interlock (blue light) lit. CUE: Blue light ON.	Candidate verifies Blue AOIL PRESS@ light lit.		
*9	Start the #3 RCP CUE: Green light OFF Red light ON.	1/ <u>u</u> -PCPX3 taken to the START _ 2 minutes after the oil lift pump start. Candidate verifies Green light off and Red light on.		
10	Verify Alarm 2.1 on ALB-5B clear. CUE: Window 2.1 is DARK	ANY RCP FAIL TO START Alarm 2.1 on ALB-5B is clear.		
11	VERIFY #3 RCP undervoltage TSLB goes out. CUE: White light not lit.	Candidate verifies TSLB-4, 3.2, RCP 3 BUS UNDERVOLT NOT lit.		
12	Verify #3 Loop flow increases within 10 seconds. CUE: Loop flow is increasing	Candidate checks #3 loop flow on <u>u</u> -FI-434/35/36, RC LOOP 3 FLO	#3 RCP should be stopped if flow does not increase within 10 sec.	
13	Verify #3 RCP motor amps have decreased to less than or equal to 750 amp within one minute CUE: Meter for motor amps is pegged high.	Candidate checks #3 motor current on <u>u</u> -II-RCP3, RCP3 MOTOR CURRENT, and observes it does not decrease within 1 minute.	#3 RCP should be stopped if motor current does not decrease to less than or equal to 750 amps in one minute.	

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

14	Inform the SRO of problem with motor amps. CUE: SRO acknowledges report.	SRO informed of problem.		
*15	Stop #3 RCP. CUE: Green light ON Red light OFF.	Candidate momentarily places 1/ <u>u</u> -PCPX1, #3 RCP to STOP.		
16	Stop the #3 RCP oil lift pump CUE: Blue and Red lights off. Green light on. TASK COMPLETE	Candidate should take switch 1/ <u>u</u> -PCPX3-LP. RCP 3 OIL LIFT PUMP, to the stop position after RCP #3 has operated greater than 1 minute <u>OR</u> if #3 RCP has been stopped.		

**Comanche Peak Steam Electric Station
ILE-11/2002**

Job Performance Measure

INITIATING CUE:

IPO-001, "Plant Heatup From Cold Shutdown to Hot Standby", has progressed to the point of starting the third Reactor Coolant Pump per SOP-108. All prerequisites have been met and all steps have been completed through step 5.1.7 in SOP-108. All seal flows are within limits. You are directed to start #3 RCP continuing with step 5.1.8 of SOP-108.

Job Performance Measure

System: Containment Cooling SystemsJTA Task #: CPSES BANK: RO1703Task Title: Restore Containment CoolingKSA Ref: SF5.022.A4.01PEO: _____RO: 3.6SRO: 3.6Operator's Name: _____Performance Environment: PLANT CONTROL ROOM ***SIMULATOR***Performance Method: ***PERFORMED*** SIMULATED

DISCUSSED

Time to complete JPM: Estimated 20 min. Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____Comments (list all steps not satisfactorily completed): _____References:EOP-0.0A, Reactor Trip or Safety Injection@
SOP-814, Ventilation Chilled Water System@Tools, Equipment, Job Aids, etc:Load an at Power IC, enter malfunction RP14A &
RP14B then delete malfunction, wait two minutes, reset
SI, sequencer and phase A. Enter EDR33 & EDR 36 to
CLOSE, ensure all pipe penetration fans off with green

Job Performance Measure

	flags.
--	--------

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

Unit 1 is recovering from a Safety Injection. The Unit Supervisor has directed you to restore Containment Cooling to service per EOP-0.0A, Attachment 9, step 4. SI has been reset and power restored to all MCCs. CCW non-safeguards loop is aligned. HVAC Centrifugal Chillers X-03 and X-04 are unavailable. Containment Phase A isolation has been reset.

Terminating Conditions:

Terminate, once at least one Reactor Coolant Pipe Penetration Ventilation Fan is started.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Ensure 1-HS-4650, VENT CHLR CCW SPLY & RET LV is open. CUE: 1-HS-4650 handswitch indication is red. The chilled water containment isolation valves were closed on Phase A isolation signal.	Operator visually verifies BHS_4650 to be open by red light indication on the handswitch at CB-3.	CUE: If asked inform operator: Vent Chillers X-05 & X-06 have CW aligned from Unit 1	
*2	Open 1-HS-6082, CH WTR RET ISOL VLV. CUE: 1-HS-6082 handswitch indication is red.	Take handswitch 1-HS-6082 to the open position and verify red light indication on the handswitch on CB-3	Steps 2 through 4 may be done in any order.	
*3	Open 1-HS_6083 CH WTR RET ISOL VLV. CUE: 1-HS-6083 handswitch indication is red.	Take handswitch 1-HS-6083 to the open position and verify red light indication on the handswitch on CB-3.		
*4	Open 1-HS-6084, CH WTR SPLY ISOL VLV. CUE: 1-hs-6084 HANDSWITCH INDICATION IS RED. All chilled water Recirc pumps are tripped.	Take handswitch 1-HS_6084 to the open position and verify red light indication on the handswitch on CB-3.		
5	Ensure CH WTR RECIRC PMP 1 <u>OR</u> 3 running. CUE: Depending on which pump was started: X-HS-6055 or X-HS-6057 handswitch indication is red. X-FI-6073 indicates 150 gpm.	Take handswitch X-HS-6055 (pump 1) <u>or</u> X-HS-6057 (pump 3) to the start position and verify red light indication on the handswitch. Flow may be verified on X-FI-6073.	Steps 5 and 6 may be done in any order.	
6	Ensure CH WTR RECIRC PMP 2 <u>OR</u> 4 running.	Take handswitch X-HS-6056 (pump 2) <u>or</u> X-HS-6058 (pump 4) to		

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
	CUE: Depending on which pump was started: X-HS-6056 or X-HS-6058 handswitch indication is red. X-FI-6073 indicates 2500 gpm.	the start position and verify red light indication on the handswitch. Flow may be verified on X-FI-6073.		
7	Place the remaining two CH WTR RECIRC PMPS to AUTO After Stop Position. CUE: Depending on which pumps were taken to AUTO After Stop: X-HS-6055 X-HS-6056 X-HS-6057 X-HS-6058 Handswitch indication is green.	Take handswitches for the chiller pumps <u>not</u> started to the AUTO After Stop Position X-HS-6055 X-HS-6056 X-HS-6057 X-HS-6058 Verify green light indication on the handswitch.	Pumps in this step may be operated in any order. NOTE: If PEO asked status of CW Booster Pumps, report pumps X-12 & X-13 running	
8	Dispatch PEO to start HVAC CENTRIFUGAL WATER CHILLER X-01 and X-02. CUE: HVAC chillers X-01 and X-02 are running.	Operator uses radio or Gaitronics to dispatch PEO to start HVAC CENTRIFUGAL CHILLERS X-01 and X-02.	Note: May only start one chiller.	
*9	Start CNTMT FN CLR FN1. CUE: 1-HS-5405A handswitch indication is red.	Take handswitch 1-HS-5405A to the start position and verify red light indication on the handswitch	Note: Only 3 CNTMT Fan coolers need be started. May be done in any order.	
*10	Start CNTMT FN CLR 2. CUE: 1-HS-5409A handswitch indication is red.	Take handswitch 1-HS-5409A to the start position and verify red light indication on the handswitch.		
*11	Start CNTMT FN CLR FN3.	Take handswitch 1-HS-5413A to the start		

Job Performance Measure

	CUE: 1-HS-5413A handswitch indication is red.	position and verify red light indication on the handswitch.		
*12	Start CNTMT FN CLR FN 4. CUE: 1-HS-5417A handswitch indication is red.	Take handswitch 1-HS- 5417A to the start position and verify red light indication on the handswitch.		
*13	Start CRDM VENT FN 1. CUE: 1-HS-5421 handswitch indication is red.	Take handswitch 1-HS- 5421 to the start position and verify red light indication on the handswitch.	Note: Only 1 CRDM Vent Fan need be started.	
*14	Start CRDM VENT FN 2. CUE: 1-HS-5423 handswitch indication is red.	Take handswitch 1-HS- 5423 to the start position and verify red light indication on the handswitch.		
*15	Start NEUT DET WELL FN CLR FN 9 & DMPR CUE: 1-HS-5435 handswitch indication is red.	Take handswitch 1-HS- 5435 to the start position and verify red light indication on the handswitch.	Note: Only 1 neutron detector well fan cooler need be started.	
*16	Start NEUT DET WELL FN CLR FN 10 & DMPR. CUE: 1-HS-5440 handswitch indication is red.	Take handswitch 1-HS- 5440 to the start position and verify red light indication on the handswitch.		
*17	Start RC PIPE PENET AREA VENT FN 1. CUE: 1-HS-5461 handswitch indication is red.	Take handswitch 1-HS- 5461 to the start position and verify red light indication on the handswitch.	Note: Must start 1 or 2 Vent Fan	
*18	Start RC PIPE PENET AREA VENT FN 2. CUE: 1-HS-5463 handswitch indication is red.	Take handswitch 1-HS- 5463 to the start position and verify red light indication on the handswitch	Note: Must start 1 or 2 Vent Fan	
*19	Start RC PIPE PENET AREA VENT FN 3.	Take handswitch 1-HS- 5465 to the start position and verify red	Note: Must start 3 or 4 Vent Fan	

Job Performance Measure

	CUE: 1-HS-5465 handswitch indication is red.	light indication on the handswitch		
*20	Start RC PIPE PENET AREA VENT FN 4. CUE: 1-HS-5467 handswitch indication is red. TASK COMPLETE	Take handswitch 1-HS-5467 to the start position and verify red light indication on the handswitch	Note: Must start 1 or 2 Vent Fan	

Job Performance Measure

INITIATING CUE: Unit 1 is recovering from a Safety Injection. The Unit Supervisor has directed you to restore Containment Cooling to service per EOP-0.0A, Attachment 9, step 4. SI has been reset and power restored to all MCCs. CCW non-safeguards loop is aligned. HVAC Centrifugal Chillers X-03 and X-04 are unavailable. Containment Phase A isolation has been reset.

Job Performance Measure

System: CVCSJTA Task #: CPSES BANK: RO1336Task Title: Rx M/U Water Malfunction (ALTERNATE PATH)KSA Ref: SF2.004.A4.07PEO: _____RO: _____

3.9

SRO: _____

3.7

Operator's Name: _____Performance Environment: PLANT CONTROL ROOM **SIMULATOR**Performance Method: **PERFORMED** SIMULATED

DISCUSSED

Time to complete JPM: Estimated 15 min. Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____Comments (list all steps not satisfactorily completed): _____References:ABN-105 ACVCS Malfunctions@
SOP-104A(B) ARx M/U System@
ALM-011A(B)
ALM-061A(B)Tools, Equipment, Job Aids, etc:

Simulator Setup: IC-15, enter CV01A, trip #1 Rx MU Pump, with RSCU code 1 when dilution started. IO alarm ALB-1, C.5 (ON) and ZL-5349AB (ON) when pump trips.

Job Performance Measure

TDM-203A(B)	
-------------	--

Job Performance MeasureSafety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

You have just relieved the shift and Reactor power is 50%. The Unit Supervisor directs you to perform a normal dilution of 50 gallons to prepare to raise power.

Terminating Conditions:

PEO dispatched to start Common RMUW pump.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Place 1/ <u>u</u> -LCV-112A in HUT position CUE: HUT A red light on 1/ <u>u</u> -LCV-112A	1/ <u>u</u> -LCV-112A in HUT position and associated red light is lit.	Step 1 may not be performed per NOTE in SOP-104A Section 5.1.3.	
2	Monitor VCT level and pressure during dilution. CUE: <u>u</u> -L1-112A indicates 48% and <u>u</u> -P1-115 indicates 19 psig.	Monitor <u>u</u> -L1-112A and <u>u</u> -P1-115 during dilution.		
3	Go to A STOP@MU RCS MU MAN ACT CUE: 1/ <u>u</u> -MU green light on	1/ <u>u</u> -MU RCS MU MAN ACT in A STOP@		
4	Place 43/ <u>u</u> -MU RCS MU MODE SELECT in A DILUTE@	43/ <u>u</u> -MU RCS MU MODE SELECT in A DILUTE@	NOT CRITICAL dilution evaluated in another JPM.	
5	Set <u>u</u> -FK-111 to desired flow. CUE: RMUW Pot set to desired flow.	<u>u</u> -FK-111 set as desired.		
6	Set <u>u</u> -FY-111B A RCS MU BATCH FLO@flow to 50 gallons. CUE: <u>u</u> -FY-111B set to 50 gal	Set <u>u</u> -FY-111B A RCS MU BATCH FLO@to 50 gal		
7	Go to start on 1/ <u>u</u> -MU, RCS MU MAN ACT CUE: The following alarms come in: RMUW LO PRESS, on ALB-1, 2.5 RMUW PMP 1/COMM OVRLOAD TRIP, on ALB-1, 3.5 RCS MU FLO DEV on ALB-6A 3.7	1/ <u>u</u> -MU, RCS MU MAN ACT IN A START@	Activate CV09A with MFA1 Activate IOs ALB-1, C/5 to CN ZL-5349AB to ON	

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
8	Identify the affected pump on <u>u</u> -ZL-5349A RMUQ PMP 1 and X-ZL-5350A COMM RMUW PMP. CUE: Green and white light lit on <u>u</u> -ZL-5349A, green light on X-ZL-5350A.	Monitor status of lights <u>u</u> -ZL-5349A and x-ZL-5350A.		
9	Go to stop on 1/ <u>u</u> -MU, RCS MU MAN ACT CUE: 1/ <u>u</u> -MU, RCS MU MAN ACT IN ASTOP@	1/ <u>u</u> -MU, RCS MU MAN ACT IN ASTOP@		
*10	Start X-HS-5350, RMUW pump X-01. CUE: PEO called	Dispatch PEO to start X-HS-5350, RMUW pump X-01.		

Job Performance Measure

INITIATING CUE: You have just relieved the shift and Reactor power is 50%. The Unit Supervisor directs you to perform a normal dilution of 50 gallons to prepare to raise power.

Job Performance Measure

System: Component Cooling Water System **JTA Task #:** CPSES BANK (MOD): RO3608**Task Title:** Shift CCW Pumps with CCW Pump Trip (ALTERNATE PATH)**KSA Ref:** APE.026.AK3.04**PEO:** _____**RO:** 3.5**SRO:** 3.7**Operator-s Name:** _____**Performance Environment:** PLANT CONTROL ROOM **SIMULATOR****Performance Method:** **PERFORMED** SIMULATED

DISCUSSED

Time to complete JPM: Estimated _____ Actual _____

The operator-s performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator-s Signature: _____ Date: _____

Comments (list all steps not satisfactorily completed): _____**References:**

SOP-502A, ACCW System@

ABN-502, AComponent Cooling Water System
Malfunction@**Tools, Equipment, Job Aids, etc:**

ABN-502, Simulator: 1) Load 100% IC

2) Insert and activate MALF-CC03A??

3) Insert and activate MALF-CC02A??

Job Performance Measure

	4) Insert and activate MALF-CC02B??
--	-------------------------------------

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to Manipulate any plant components.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

The Unit is operating at 50% power. The Unit Supervisor directs you to shift CCW pumps (start CCWP2, and secure CCWP1 per SOP-502) in preparation for maintenance.

Terminating Conditions:

Reactor tripped.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Ensure SSWP2 is running CUE: SSWP2 indication is RED.	Operator visually verifies SSWP2 is running by verifying handswitch indication is RED.		
2	Ensure oil level in bearing housings for CCWP2 are normal. CUE: bearing housing oil levels are reported normal.	Operator directs someone to verify oil level for CCWP2.		
*3	Start CCWP2 CUE: <u>u</u> -HS-4519A handswitch light indication is RED.	Take handswitch <u>u</u> -HS-4519A to the start position and verify red light indication on the handswitch.		
4	Ensure the following equipment are removed from service: RHR Pumps 1-01/02, CS Pumps 1-01/02/03/04 CUE: Listed Pumps are removed from service.	Same as Element.		
*5	Stop CCWP1 CUE: <u>u</u> -HS-4518A handswitch light indication is green. (CCWP2 trips): <u>u</u> -HS-4519A green light and white trip light lit. Annunciator Alarms: CCWP 2 OVRLOAD/TRIP, CCW TRN A/B SFGD LOOP PRESS LO, CCW HX 2 OUT &	Operator holds the <u>u</u> -HS-4518A handswitch in STOP until flow and pressure stabilize and then releases handswitch.	WARNING: Operator may attempt to trip RX (per section 6.0 of ABN-502A A Loss of all CCW Flow@) when CCWP2 trips; operator SHOULD go to section 2.0 of ABN-502A	

Job Performance Measure

	RECIRC FLO LO, CCW HX 2 SPLY FLO LO		ACCW Pump Trip@and attempt to start CCWP1; DO NOT allow operator to trip RX (it would interfere with JPMS3 running concurrently).	
6	Verify unaffected train CCW Pump B RUNNING. CUE: <u>u</u> -HS-4518A handswitch light indication is green.	Operator visually verifies CCWP 1 is running by verifying <u>u</u> - HS-4518A handswitch indication is RED on CB-3	If operator attempts to trip the RX, DO NOT allow RX trip, and terminate the JPM.	
*7	Start <u>u</u> -HS-4518A CCWP 1 CUE: <u>u</u> -HS-4518A RED light lit and flow restored.	Take handswitch <u>u</u> -HS- 4518A to the start position and verify red light indication on the handswitch and flow restored.		
	TASK COMPLETE			

Job Performance Measure

INITIATING CUE: The Unit is operating at 50% power. The Unit Supervisor directs you to shift CCW pumps (start CCWP2, and secure CCWP1 per SOP-502) in preparation for maintenance.

Facility:	CPSES	Scenario No.:	1	Op-Test No.:	11/2002
Examiners:	Howard Bundy	Operators:			
	Mike Murphy				
	Tom Stetka				
	Fred Sanchez				
Note:	(NEW) SRO Admin A.5-1, Emerg. Class. is to be done in conjunction with this Scenario. (PRELOAD - MET Tower Data → wind 105) Time (T) = 0 at end of power increase → as directed by Chief Examiner				
Initial Conditions:	Full power steady state; BOL; Equilibrium Xenon; Severe thunderstorm warning and high winds issued and ABN-907, Section 5 completed. EDG 1-01 is out of service for maintenance (12 hours into LCO). (IC Info.: EGR06 - DG1 out of service)				
Turnover:	The plant has been at 100% power for the last 15 days. A power reduction to 76% is required to perform MSIV testing. The load reduction should be initiated as soon as the shift change is completed.				
Event No.	Malf. No.	Event Type*	Event Description		
1 T=0		N (SRO) R (RO)	Reduce power to 76%		
2 T=15	RX05A	I (SRO) I (RO)	Pressurizer level transmitter LT-459 fails low [value=0, ramp over 1 min]		
3 T=22	TC05A	C (SRO) C (BOP)	#1 Main turbine control valve fails closed		
4 T=30	ED06G	C (ALL)	Loss of 1D3 bus		
5 T=33 T=35	RC03D	C (RO) C (SRO)	RCP 4 vibration - initial severity @ 9 mils and ramp severity to 25 mils over 30 min. High vib. alarm on RCP 4 (shaft) alarms at 15 mils & increasing @ approx 0.5 mils/min. Manual Rx Scram due to high RCP 1-04 vibrations, no SI. Enter EOP-0.0A and then transition to EOS-0.1A.		
6 T=44	ED01	M (ALL)	Lighting strike in switchyard - loss of offsite power. EDG 1-02 starts and loads (E19 triggers automatically when the reactor is tripped)		
7 T=50	EG07B	C (ALL)	EDG 1-02 trips (overspeed) - loss of all power. Transition to ECA-0.0A and possibly ABN-601.		
T=60			EDG 1-02 is restarted after S/G depressurization has started per ECA-0.0A.		

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

Op-Test No: 11/2002Scenario No: 1Event No: 1Page 1 of 1

Event Description: Reduce power to 70%

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Review IPO-003A, Power Operations
				Notifies the Dispatcher prior to reducing load
				Notifies Chemistry and Radiation Protection if power reduction will be greater than 15% in one hour
				Notifies Reactor Engineering of power reduction greater than 25%
				Calculates the amount of boration required
				Calculates the rate of boration
				Reviews AFD guidance
				Sets in the desired unloading rate on the LOAD GRADIENT device
				Initiates boration
				Lowers the LOAD REFERENCE device in incremental steps to control the power decrease
				Maintains AFD within the target band
				Maintains rods above the rod insertion limit
				Maintain Tavg within 1°F of Tref

*BOLD INDICATES CRITICAL STEP

Op-Test No: 11/2002Scenario No: 1Event No: 2Page 1 of 3

Event Description: Pressurizer level transmitter LT-459 fails low

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				<p>Recognizes indications that pressurizer level transmitter LT-459 failed low:</p> <p>LI459A, pressurizer level channel I, indicates low</p> <p>Letdown isolates</p> <p>Pressurizer low level heater cutoff</p> <p>PRZR LVL LO (5B-3.6)</p> <p>PRZR LVL DEV LO (5C-1.2)</p> <p>Informs SRO</p>
				Refers to ABN-706, Pressurizer Level Instrumentation Malfunction, and directs operators
				Stops load decrease and Assists as directed
				Transfers LS-459D, PRZR LVL CTRL CHAN SELECT, to an operable alternate control channel
				Verifies automatic control restoring pressurizer level to program
				Verifies instruments on common instrument line - NORMAL
				Ensures LS-4590E, LR-459 PRZR LVL SELECT selected to a valid channel
				Directs I&C to place bistable BS-1, Cab 01, Frame 08, Card 47, test switch in TEST and verify channel test status light ON

*BOLD INDICATES CRITICAL STEP

Op-Test No: **11/2002**Scenario No: **1**Event No: **2**Page **2** of **3**

Event Description: Pressurizer level transmitter LT-459 fails low

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Verifies trip status panel TSLB-5 indicator 1.1 ON and Notes verification in Unit Log
				Restores letdown:
				Ensures charging flow through regenerative heat exchanger
				Opens LCV-459 and LCV-460, letdown isolation valves
				Takes manual control of PK-131, LTDN HX OUT PRESS CTRL, and opens the valve to 30% demand
				Opens the desired orifice isolation valve
				Adjusts PK-131, LTDN HX OUT PRESS CTRL, to obtain approximately 310 psig on PI-131, LTDN HX OUT PRESS, then places in automatic
				Adjusts TK-130, LTDN HX OUT TEMP CTRL to obtain approximately 95°F on TI 130, LTDN HX OUT TEMP, then places in automatic
				Recloses pressurizer heater group C feeder breaker by placing PRZR CTRL HTR GROUP C control switch in the ON position

***BOLD INDICATES CRITICAL STEP**

Op-Test No: **11/2002**Scenario No: **1**Event No: **2**Page **3** of **3**

Event Description: Pressurizer level transmitter LT-459 fails low

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Refers to Technical Specifications: Reactor Trip Instrumentation T. S. Table 3.3-1 Item No. 11 Accident Monitoring T. S. Table 3.3-6 Item No. 5
				Initiates repairs per STA-606
				Initiates a ONE Form per STA-421 as applicable

***BOLD INDICATES CRITICAL STEP**

Op-Test No: **11/2002**Scenario No: **1**Event No: **3**Page **1** of **1**

Event Description: #1 Main Turbine control valve fails closed

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Determines turbine/reactor power change - informs SRO
				Ensure rod control and steam dumps maintain RCS temperature
				Determines turbine control valve closed
				Directs and Implements ABN-401:
				1. Verifies S/G level control, PRZR level control, and PRZR pressure control working correctly
				2. Verify turbine load stable and match LOAD REFERENCE indication with existing load
				3. Reduce turbine load until all operable HP control valves indicate <100% open
				4. Check status of ALL main turbine stop and control valves
				Notify PSO, plant management, and prompt team
				Note for simulator operator - If asked, as PEO, report no apparent reason for #1 CV closure

*BOLD INDICATES CRITICAL STEP

Op-Test No: **11/2002**Scenario No: **1**Event No: **4**Page **1** of **1**

Event Description: Loss of 1D3 Bus

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Performs actions of ALM-0102
				After performing a board walkdown, observes that 1D3 voltage is pegged low (1-CB-11) and announces loss of 1D3 bus (this can be difficult to identify - will require some good analysis)
				Send PEO to equipment to check
				Determines that RCPs can not be tripped from control room
				Refers to T/S 3.3.1

*BOLD INDICATES CRITICAL STEP

Op-Test No: **11/2002**Scenario No: **1**Event No: **5**Page **1** of **1**

Event Description: High Vibration on RCP 1-04 (shaft)

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Directs and Implements ABN-101
				Trip the reactor due to high rate of RCP vibration increase. Make plant announcement
				Go to EOP-0.0A
				Stop RCP 1-04 - locally (call to have AO open breaker)
				Note: Trip the reactor due to high RCP vibration - preventing a challenge to plant safety and a degradation of any barrier to fission product release (App D, Step D.1.a)

*BOLD INDICATES CRITICAL STEP

Op-Test No: **11/2002** Scenario No: **1** Event No: **6** Page **1** of **1**

Event Description: Switchyard lighting strike - loss of offsite pwr (EDG 1-02 starts and loads)

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Direct and Implement ABN-601 Section 5
				Check 6.9 KV safeguard buses energized (Train B)
				Check 6.9 KV non-safeguard buses energized
				Check Blackout Sequencer
				Check switchyard buses - will be de-energized
				Perform Attachment 20
				Refer to EPP-201 → classify as NOUE
				Verify numerous transformer/switchyard status
				Re-energize various buses (next event before this can be completed)
				Shift briefing, various announcements, contact distribution, and contact Prompt team
				Note to Simulator Operator: Call RO and report lighting strike in switchyard and high winds. Load Met Tower with wind speed of 105 mph (sustained)

***BOLD INDICATES CRITICAL STEP**

Op-Test No: **11/2002**Scenario No: **1**Event No: **7**Page **1** of **2**

Event Description: EDG 1-02 trips on overspeed → Loss of all power

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Direct and Implement ECA-0.0A
				Verify Rx trip
				Verify turbine trip
				Check RCS isolated
				Verify AFW flow > 460 gpm
				Power can not be restored to AC safeguards bus - go to ABN-601, Step 6
				Initiate DC bus load shedding - Control Room calls and has someone begin to load shed - local actions
				Depressurize intact SGs to 270 psig
				Send PEO to check on EDG trip (trip on overspeed)
				Direct and Implement ABN-601
				Start the DG per Attachment 1- EDG restarted AFTER SG depressurization started

*BOLD INDICATES CRITICAL STEP

Op-Test No: 11/2002Scenario No: 1Event No: 7Page 2 of 2

Event Description: EDG 1-02 trips on overspeed → Loss of all power

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Transition back to ECA-0.0A
				After SG pressures have been stabilized - end of scenario (based on Chief Examiner)
				Note: Depressurize intact SGs → Reduce temp and press of RCS to reduce RCP seal leakage and minimize RCS inventory loss (no way to makeup). (preventing a challenge to plant safety (App D, Step D.1.a))

*BOLD INDICATES CRITICAL STEP

Job Performance Measure

System: Containment Cooling SystemsJTA Task #: CPSES BANK: RO1703Task Title: Restore Containment CoolingKSA Ref: SF5.022.A4.01PEO: _____RO: 3.6SRO: 3.6Operator's Name: _____Performance Environment: PLANT CONTROL ROOM **SIMULATOR**Performance Method: **PERFORMED** SIMULATED

DISCUSSED

Time to complete JPM: Estimated 20 min. Actual _____

The operator's performance was evaluated against the standards contained in this JPM and was determined to be:

SATISFACTORY**UNSATISFACTORY**

Reason, if unsatisfactory:

Evaluator's Signature: _____ Date: _____Comments (list all steps not satisfactorily completed): _____References:EOP-0.0A, Reactor Trip or Safety Injection@
SOP-814, Ventilation Chilled Water System@Tools, Equipment, Job Aids, etc:Load an at Power IC, enter malfunction RP14A &
RP14B then delete malfunction, wait two minutes, reset
SI, sequencer and phase A. Enter EDR33 & EDR 36 to
CLOSE, ensure all pipe penetration fans off with green

Job Performance Measure

	flags.
--	--------

Job Performance Measure

Safety Considerations:

If this JPM is to be performed in the plant/control room, the candidate is NOT to manipulate any plant components unless he/she has permission from the Shift/Unit Supervisor.

Comments:

Cues for indications and controls need not be given if this JPM is performed on an operating simulator.

Instructions:

Make or simulate all written and/or oral reports as if the evolution is actually being performed. You are expected to discuss the steps that you would take to include an identification of what switches/indications you would use.

Initiating Cue:

Unit 1 is recovering from a Safety Injection. The Unit Supervisor has directed you to restore Containment Cooling to service per EOP-0.0A, Attachment 9, step 4. SI has been reset and power restored to all MCCs. CCW non-safeguards loop is aligned. HVAC Centrifugal Chillers X-03 and X-04 are unavailable. Containment Phase A isolation has been reset.

Terminating Conditions:

Terminate, once at least one Reactor Coolant Pipe Penetration Ventilation Fan is started.

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
1	Ensure 1-HS-4650, VENT CHLR CCW SPLY & RET LV is open. CUE: 1-HS-4650 handswitch indication is red. The chilled water containment isolation valves were closed on Phase A isolation signal.	Operator visually verifies BHS_4650 to be open by red light indication on the handswitch at CB-3.	CUE: If asked inform operator: Vent Chillers X-05 & X-06 have CW aligned from Unit 1	
*2	Open 1-HS-6082, CH WTR RET ISOL VLV. CUE: 1-HS-6082 handswitch indication is red.	Take handswitch 1-HS-6082 to the open position and verify red light indication on the handswitch on CB-3	Steps 2 through 4 may be done in any order.	
*3	Open 1-HS_6083 CH WTR RET ISOL VLV. CUE: 1-HS-6083 handswitch indication is red.	Take handswitch 1-HS-6083 to the open position and verify red light indication on the handswitch on CB-3.		
*4	Open 1-HS-6084, CH WTR SPLY ISOL VLV. CUE: 1-hs-6084 HANDSWITCH INDICATION IS RED. All chilled water Recirc pumps are tripped.	Take handswitch 1-HS_6084 to the open position and verify red light indication on the handswitch on CB-3.		
5	Ensure CH WTR RECIRC PMP 1 <u>OR</u> 3 running. CUE: Depending on which pump was started: X-HS-6055 or X-HS-6057 handswitch indication is red. X-FI-6073 indicates 150 gpm.	Take handswitch X-HS-6055 (pump 1) <u>or</u> X-HS-6057 (pump 3) to the start position and verify red light indication on the handswitch. Flow may be verified on X-FI-6073.	Steps 5 and 6 may be done in any order.	
6	Ensure CH WTR RECIRC PMP 2 <u>OR</u> 4 running.	Take handswitch X-HS-6056 (pump 2) <u>or</u> X-HS-6058 (pump 4) to		

Job Performance Measure

STEP# *Critical	ELEMENT	STANDARD	NOTES	SAT/ UNSAT
	CUE: Depending on which pump was started: X-HS-6056 or X-HS-6058 handswitch indication is red. X-FI-6073 indicates 2500 gpm.	the start position and verify red light indication on the handswitch. Flow may be verified on X-FI-6073.		
7	Place the remaining two CH WTR RECIRC PMPS to AUTO After Stop Position. CUE: Depending on which pumps were taken to AUTO After Stop: X-HS-6055 X-HS-6056 X-HS-6057 X-HS-6058 Handswitch indication is green.	Take handswitches for the chiller pumps <u>not</u> started to the AUTO After Stop Position X-HS-6055 X-HS-6056 X-HS-6057 X-HS-6058 Verify green light indication on the handswitch.	Pumps in this step may be operated in any order. NOTE: If PEO asked status of CW Booster Pumps, report pumps X-12 & X-13 running	
8	Dispatch PEO to start HVAC CENTRIFUGAL WATER CHILLER X-01 and X-02. CUE: HVAC chillers X-01 and X-02 are running.	Operator uses radio or Gaitronics to dispatch PEO to start HVAC CENTRIFUGAL CHILLERS X-01 and X-02.	Note: May only start one chiller.	
*9	Start CNTMT FN CLR FN1. CUE: 1-HS-5405A handswitch indication is red.	Take handswitch 1-HS-5405A to the start position and verify red light indication on the handswitch	Note: Only 3 CNTMT Fan coolers need be started. May be done in any order.	
*10	Start CNTMT FN CLR 2. CUE: 1-HS-5409A handswitch indication is red.	Take handswitch 1-HS-5409A to the start position and verify red light indication on the handswitch.		
*11	Start CNTMT FN CLR FN3.	Take handswitch 1-HS-5413A to the start		

Job Performance Measure

	CUE: 1-HS-5413A handswitch indication is red.	position and verify red light indication on the handswitch.		
*12	Start CNTMT FN CLR FN 4. CUE: 1-HS-5417A handswitch indication is red.	Take handswitch 1-HS- 5417A to the start position and verify red light indication on the handswitch.		
*13	Start CRDM VENT FN 1. CUE: 1-HS-5421 handswitch indication is red.	Take handswitch 1-HS- 5421 to the start position and verify red light indication on the handswitch.	Note: Only 1 CRDM Vent Fan need be started.	
*14	Start CRDM VENT FN 2. CUE: 1-HS-5423 handswitch indication is red.	Take handswitch 1-HS- 5423 to the start position and verify red light indication on the handswitch.		
*15	Start NEUT DET WELL FN CLR FN 9 & DMPR CUE: 1-HS-5435 handswitch indication is red.	Take handswitch 1-HS- 5435 to the start position and verify red light indication on the handswitch.	Note: Only 1 neutron detector well fan cooler need be started.	
*16	Start NEUT DET WELL FN CLR FN 10 & DMPR. CUE: 1-HS-5440 handswitch indication is red.	Take handswitch 1-HS- 5440 to the start position and verify red light indication on the handswitch.		
*17	Start RC PIPE PENET AREA VENT FN 1. CUE: 1-HS-5461 handswitch indication is red.	Take handswitch 1-HS- 5461 to the start position and verify red light indication on the handswitch.	Note: Must start 1 or 2 Vent Fan	
*18	Start RC PIPE PENET AREA VENT FN 2. CUE: 1-HS-5463 handswitch indication is red.	Take handswitch 1-HS- 5463 to the start position and verify red light indication on the handswitch	Note: Must start 1 or 2 Vent Fan	
*19	Start RC PIPE PENET AREA VENT FN 3.	Take handswitch 1-HS- 5465 to the start position and verify red	Note: Must start 3 or 4 Vent Fan	

Job Performance Measure

	CUE: 1-HS-5465 handswitch indication is red.	light indication on the handswitch		
*20	Start RC PIPE PENET AREA VENT FN 4. CUE: 1-HS-5467 handswitch indication is red. TASK COMPLETE	Take handswitch 1-HS-5467 to the start position and verify red light indication on the handswitch	Note: Must start 1 or 2 Vent Fan	

Job Performance Measure

INITIATING CUE: Unit 1 is recovering from a Safety Injection. The Unit Supervisor has directed you to restore Containment Cooling to service per EOP-0.0A, Attachment 9, step 4. SI has been reset and power restored to all MCCs. CCW non-safeguards loop is aligned. HVAC Centrifugal Chillers X-03 and X-04 are unavailable. Containment Phase A isolation has been reset.

Facility:	CPSES	Scenario No.:	3	Op-Test No.:	11/2002
Examiners:	Howard Bundy	Operators:			
	Mike Murphy				
	Tom Stetka				
	Fred Sanchez				
Note: (BANK) This scenario is an unused spare from the 2001 CPSES exam					
Initial Conditions: 50% power and steady.					
Turnover: No equipment is out of service. Train A equipment is in service. FWP repairs have been completed by the previous shift. You have been directed to return to 100% power @8%/hr not to exceed 10%/hr.					
Event No.	Malf. No.	Event Type*	Event Description		
1 T=0		N (SRO) N (BOP) R (RO)	Increase Reactor power back to 100%		
2** T=15	MS13A	I (RO) I (SRO)	MSL 1 Press Instrument PI-2325 fails high (100%)		
3 T=22	FW16	C (RO) C (BOP) C (SRO)	Lowering vacuum on main condenser due to loss of vacuum breaker water seal (6% severity)		
4 T=32	RX15A	C (RO) C (SRO)	Pzr spray flow control valve failure (PCV-455B) @ 60% severity. RXR96 is PCV-455B CTRL driver card - remove then delete malfunction		
5 T=45	TC06C MS07A MS10A1 @100%	M (ALL)	Main turbine spurious trip and MSIV #1 closes causing SG1 Safety MS-021 to fail open		

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

** Note - Initiate after Chief Examiner determines power increase is sufficient

Op-Test No: **11/2002**Scenario No: **3**Event No: **1**Page **1** of **1**

Event Description: Increase Rx Power - approx 8%/hr

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Increase reactor power per IPO-003A
				Provide shift briefing
				Calc amount of dilution needed to raise power to 1145 Mwe (Rx Eng data)
				Initiate dilution and outward rod motion
				Set desired loading rate on the LOAD GRADIENT device
				Raise the LIMIT LOAD device to >1180 MW
				Raise the LOAD REFERENCE device to increase turbine load
				Verify proper rod bank insertion, overlap, and sequencing

*BOLD INDICATES CRITICAL STEP

Op-Test No: **11/2002**Scenario No: **3**Event No: **2**Page **1** of **1**

Event Description: MSL #1 Press Instrument (PI-2325) Fails High

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Refers to ALM-0064A and diagnosis ARV open by control board indications
				Directs and Implements ABN-709, Section 2.0
				Determines PI-2325 failed high and ZL-2325 indicates valve open
				Ensures SG 1 press <1125 psig and manually closes ARV
				Notifies Chemistry to determine if release permit is required
				Contacts Prompt Team and initiates repairs

***BOLD INDICATES CRITICAL STEP**

Op-Test No: **11/2002**Scenario No: **3**Event No: **3**Page **1** of **1**

Event Description: Main Condenser Air In-leakage

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Determines Condenser Vacuum Lowering
				Directs Actions of ABN-304, Section 3.0
				Starts all available condenser vacuum pumps
				Notifies Shift Manager and Load Dispatcher of imminent load reduction
				Reduces turbine load as necessary per IPO-3A
				Notifies Chemistry of excessive air in-leakage
				Dispatches personnel to check for leaks
				Note to Simulator Operator: 2 minutes after being dispatched as PEO to check for leakage paths, remove Malf FW16 and report back that main condenser vacuum breaker loop seal was empty and has been refilled
				Stop unnecessary CEVs per SOP-309
				Critical Task - Turbine/Rx trip does not occur on low condenser vacuum.

*BOLD INDICATES CRITICAL STEP

Op-Test No: 11/2002Scenario No: 3Event No: 4Page 1 of 1

Event Description: PZR Spray Valve PCV-455 fails to 60% open

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Determines PRZR Spray Valve RC Loop 1 is open
				Directs Actions of ABN-705, Section 3
				Attempts to close Spray Valve PK-455B
				Initiate load reduction to 40% per IPO-3A
				Ensures all PRZR heaters are on
				Directs I&C to de-energize Spray Valve PCV-455B by removing 1-PCY-0455B Driver Card
				Note to Simulator Operator: After 1 minute, using remote function RXR96, remove/pull PCV-455B Ctrl Drive Card and remove malfunction RX15A. Report back to control room that card has been removed.
				Check PRZR pressure trending to normal
				Contact Plant Management and initiate repairs
				Critical Task → Rx does not trip on low press

*BOLD INDICATES CRITICAL STEP

Op-Test No: <u>11/2002</u> Scenario No: <u>3</u> Event No: <u>5</u> Page <u>1</u> of <u>2</u>				
Event Description: Turbine Spurious trip, MSIV #1 closure, Stm Line Safety Valve 1MS-0021 fails open				
Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Determines #1 MSIV closed and STM Safety is failed open
				Trips the reactor
				Directs and implements EOP-0.0
				Verifies Rx trip and bypass brks open, all rod bottom lights on, neutron flux decreasing, and turbine tripped
				Verifies power to AC SFGD buses
				Verifies SI actuated or is required
				Determines SG1 is FAULTED and transitions to EOP-2.0
				Directs and Implements EOP-2.0
				Closes all MSIV's and checks bypasses closed
				Isolates #1 S/G including #1 MSL supply to TDAFWP
				Checks for SGTR by verifying Secondary Rad levels -- normal

*BOLD INDICATES CRITICAL STEP

Op-Test No: 11/2002Scenario No: 3Event No: 5Page 2 of 2

Event Description: Turbine Spurious trip, MSIV #1 closure, Stm Line Safety Valve 1MS-0021 fails open

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Transitions to EOP-1.0
				Directs and Implements EOP-1.0
				Check if RCPs should be stopped
				Check for faulted S/Gs
				Check intact S/G levels and Secondary Rad levels
				Transition to EOS-1.1
				Terminate scenario when Crew transitions to EOS-1.1 or at the discretion of the Chief Examiner

*BOLD INDICATES CRITICAL STEP

Facility:	CPSES	Scenario No.:	4	Op-Test No.:	11/2002
Examiners:	Howard Bundy	Operators:			
	Mike Murphy				
	Tom Stetka				
	Fred Sanchez				
Note:	(NEW)				
Initial Conditions:	20% Turbine Load at BOL				
Turnover:	Plant Startup in Progress following a routine refueling outage. No equipment is out of service. IPO-003A, Power Operations is complete through step 5.3.9. Starting at step 5.4, Establishing 100% Turbine Load, continue the plant startup in accordance with IPO-003A.				
Event No.	Malf. No.	Event Type*	Event Description		
1 T=0		R (RO) N (BOP) N (SRO)	Increase turbine load in accordance with IPO003A, Power Operations When operator starts dilution, insert malfunction CV16A		
2 T=15	CV16A	I (RO) I (SRO)	LT-112 Fails within the auto makeup range		
3 T=25	RC03C	C (RO) C (SRO)	RCP 3 shaft high vibration		
4 T=35	RC09C2	M (ALL)	Reactor coolant system loop #3 cold leg rupture (double ended shear)		
5 T=35		C (ALL)	Rx will not trip in manual or automatic. Go to FRS-0.1A, "Response to Nuclear Power Generation/ATWT"		
6 T=35	SI04B	C (RO)	Train B SI Pump failure		

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

Preload Information

T=0:

- ! RP01 Auto Rx trip failure
- ! RP15E Rx trip breakers jammed closed

Op-Test No: **11/2002**Scenario No: **4**Event No: **1**Page **1** of **1**

Event Description: Increase turbine load in accordance with IPO-003A, Power Operation

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Review IPO-003A, Power Operation
				Contacts chemistry to verify SG and secondary chemistry parameters
				Notifies the Dispatcher of intent to increase turbine load
				Verifies: PCIP, 1.2, "IR TRN A RX TRIP BLK" is on PCIP, 2.2, "IR TRN B RX TRIP BLK" is on PCIP, 3.2, "PR TRN A LO SETPT TRIP BLK" is on PCIP, 4.2, "PR TRN B LO SETPT TRIP BLK" is on
				Calculates amount of dilution required
				Sets in the desired loading rate on the LOAD GRADIENT device
				Initiates RCS dilution
				Maintains Axial Flux Difference within the band
				Rases the LIMIT LOAD device to 400 MW
				Raises the LOAD REFERENCE device to 350 MW in incremental steps

*BOLD INDICATES CRITICAL STEP

Op-Test No: **11/2002** Scenario No: **4** Event No: **2** Page **1** of **1**

Event Description: VCT Level Transmitter LT-112 Fails in the Auto Makeup Range

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Recognizes indication of LT-112 failure: Auto makeup start and does not stop VCT level increasing VCT LVL LO annunciator VCT LVL LO-LO annunciator Informs SRO
				Refers to or directs operators to ALM-0061A 3.5 or 4.5, VCT Level LO, VCT LVL LO-LO
				Monitors VCT on LI-112A and LI-185.
				Places 1/1-MU, RCS MU MAN ACT, in STOP
				Reduce VCT level by positioning 1/1-LCV-112A, VCT LVL CTRL VLV to HUT
				Verify 1-LK-112C, VCT LVL CTRL, potentiometer setpoint is correct per TDM-203A
				Verify 1-PI-115, VCT PRESS, is approximately 30 psig
				Ensure 1-LI-185, VCT LVL, and 1-PI-115, VCT PRESS, are decreasing
				Refers to ABN-105, Chemical and Volume Control System Malfunction, and directs operators

*BOLD INDICATES CRITICAL STEP

Op-Test No: **11/2002**Scenario No: **4**Event No: **3**Page **1** of **1**

Event Description: RCP #3 shaft high vibration

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Recognizes indications that #3 RCP shaft vibration is high
				Refers to ABN-101, Reactor Coolant Pump Trip/Malfunction and directs the operators
				Stops load change if in progress
				Determines that #3 RCP shaft vibration is 18 mils, Frame vibration 3 mils and steady
				NOTE: If consulted by SRO, Shift Manager and Duty Manager will advise to secure the affected pump and shutdown the plant.
				Stops RCP #3
				Stabilizes the secondary plant
				Directs shutdown per IPO - 003A/004A
				Notifies Load Dispatcher of power reduction
				NOTE: Manual and automatic RX trip functions are not functional.

*BOLD INDICATES CRITICAL STEP

Op-Test No: <u>11/2002</u> Scenario No: <u>4</u> Event No: <u>4/5</u> Page <u>1</u> of <u>4</u>				
Event Description: Reactor coolant system loop #3 cold leg rupture (double ended guillotine shear) and ATWT (SI Pump B failure)				
Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Recognize indications of loop #3 cold leg rupture: Safety Injection Pressurizer pressure decreasing Pressurizer level low Containment pressure and humidity increasing
				Transitions to EOP-0.0A, Reactor Trip or Safety Injection, Step 1 and directs operators
				Recognize RX failed to trip and inform SRO
				Attempt to manually trip reactor from both trip switches
				Transitions to FRS-0.1A, Response to Nuclear Power Generation/ATWT, Step 1, and directs operators
				Verifies control rods inserting at greater than 48 steps per minute OR manually insert control rods
				Manually trips turbine
				Verifies total AFW flow is greater than 860 gpm

*BOLD INDICATES CRITICAL STEP

Op-Test No: 11/2002Scenario No: 4Event No: 4/5Page 2 of 4

Event Description: Reactor coolant system loop #3 cold leg rupture (double ended guillotine shear) and ATWT (SI Pump B failure)

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Performs IMMEDIATE ACTION to initiate Emergency Boration of RCS: Ensures at least one CCP running Verifies charging flow is greater than 30 gpm Starts available boric acid pump Opens Emergency Boration valve 1-8104 Verifies emergency boration flow Checks PRZR pressure less than 2335 psig
				Dispatch an operator to locally trip the reactor
				NOTE: steps 1-14 of EOP-0.0A, Reactor Trip or Safety Injection, should be accomplished concurrent with FRS-0.1A
				Verify Containment Ventilation Isolation
				Verify reactor subcritical
				Verify CST Levels
				Check SG level
				Ensure all dilution paths isolated
				Check for reactivity insertion from uncontrolled cooldown

*BOLD INDICATES CRITICAL STEP

Op-Test No: 11/2002Scenario No: 4Event No: 4/5Page 3 of 4

Event Description: Reactor coolant system loop #3 cold leg rupture (double ended guillotine shear) and ATWT (SI Pump B failure)

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Check MSIVs and bypass valves closed
				Direct steps 1-14 of EOP-0.0A, Reactor Trip or Safety Injection, concurrent with FRS-0.1A
				Verify power to Safeguards buses
				Verify both trains of SI actuated
				Verify SSW pumps - RUNNING
				Recognize Train B SI Pump failed to start
				Send AO to attempt manual start of SI pump
				When AO reports pump coupling broke (7 minutes after being sent), secure pump - pull to lock
				Verify CIS Phase A Verify CVIS actuation Verify CS initiated Verify CCW pumps running Verify RHR pumps running Verify CVCS proper alignment Verify Feedwater Isolation

*BOLD INDICATES CRITICAL STEP

***BOLD INDICATES CRITICAL STEP**

Facility:	CPSES	Scenario No.:	5	Op-Test No.:	11/2002
Examiners:	Howard Bundy	Operators:			
	Mike Murphy				
	Tom Stetka				
	Fred Sanchez				
Note: (BANK) This Scenario is an unused backup from the 1999 CPSES Exam					
Initial Conditions: Full power steady state; BOL; Equilibrium Xenon (I/C Info: EG06, DG1 Out of Service.)					
Turnover: The plant has been at 100% power for the last 15 days. Diesel Generator 1 is out of service for injector replacement; Diesel Generator 1 should be returned to service in about 1 hour. Shift order directs you to shift CCP's to add oil to CCP1-01.					
Event No.	Malf. No.	Event Type*	Event Description		
1 T=0		N (RO) N (SRO)	SWAP Charging Pumps		
2 T=10		I (BOP) I (SRO)	Steam Generator Pressure Transmitter PT-2325 fails high [Value = 100]		
3 T=20		C (BOP) C (SRO) R (RO)	Heater drain pump 1-02 trips/auto turbine runback. Annunciator ALB-9A Window 8.2		
4 T=32		M (ALL)	Loss of all off-site power. Mechanical failure causes spurious trip of diesel generator 2 breaker [Initiate 5 minutes after diesel starts] [Return diesel generator to service 15 minutes after the reactor trip]		

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

Op-Test No: **11/2002**Scenario No: **5**Event No: **1**Page **1** of **1**

Event Description: Swap centrifugal charging pumps

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Directs operator to place 1-02 ccp in service and secure ccp 1-01 per SOP
				Ensures breaker is racked in.
				Ensures 1/1-8110, 1/1-8111, 1-ZL-8220, 1-ZL-8221 are open
				Contacts PEO to start 1-02 ccp aux oil pump.
				Starts ccp 1-02.
				Controls PZR level
				Secures ccp1-01 per SOP-103A, 5.3.4
				Contacts PEO to secure 1-01 ccp aux oil pump

*BOLD INDICATES CRITICAL STEP

Op-Test No: **11/2002**Scenario No: **5**Event No: **2**Page **1** of **1**

Event Description: Steam Generator No. 1 pressure transmitter PT-2325 fails high

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Recognizes indication that PT-2325 failed high: SG 1 Atmospheric Relief Valve opens Tave decreasing Informs SRO
				Refers to ABN-709, Steam Line, Steam Header & 1st Stage Pressure & Feed Header Pressure Instrument Malfunction, and directs operators
				Assists as directed
				Verifies SG atmospheric relief is NOT closed
				Take manual control of relief valve and close valve
				Adjusts to within 1 degree of Tref
				Initiates repair and informs management

***BOLD INDICATES CRITICAL STEP**

Op-Test No: <u>11/2002</u> Scenario No: <u>5</u> Event No: <u>3</u> Page <u>1</u> of <u>1</u>				
Event Description: PV-2610, heater drain pump 1-02 water injection pressure control valve fails closed				
Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Recognizes indication that PV-2610 failed closed: HDP 2 SEAL WTR PRESS LO (8.2 illuminated) Informs SRO
				Assists as directed
				Refer to ALM-0091A 8.2, HDP SEAL WTR PRESS LO, and direct operators:
				Dispatch an operator to TB 755 to determine cause of alarm
				Ensure instrument air is aligned to PC-2610 (TBO performs)
				Verify HD-0312, HTR DRN PMP 1-01/1-02 SL WTR IN ISOL VLV is open (TBO perform)
				Directs operator to reduce turbine power to <70% per IPO-003A
				Shutdown HDP 1-02 per SOP-308A for Shutdown

*BOLD INDICATES CRITICAL STEP

Op-Test No: 11/2002Scenario No: 5Event No: 4Page 1 of 2

Event Description: Loss of All AC Power

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Enters EOP-0.0A, Reactor Trip or Safety Injection, and directs operators
				Verify reactor trip
				Verify turbine trip
				Verify power to AC safeguards busses
				Check if SI is actuated
				Reports loss of off-site power Reports only 1 AC safeguards bus is energized
				Following Safety Injection remain in EOP-0.0A and directs operators
				Recognize loss of all AC (diesel generator 2 output breaker trips 5 minutes after the diesel starts)
				Transitions to ECA-0.0A, Loss of All AC Power, and directs operators
				Check if RCS is isolated

*BOLD INDICATES CRITICAL STEP

Op-Test No: 11/2002Scenario No: 5Event No: 4Page 2 of 2

Event Description: Loss of All AC Power

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Verify AFW flow - Greater than 460 gpm
				Closes diesel generator 2 output breaker
				When diesel generator 1 is restored to service (15 minutes after reactor trip) restore power to an AC Safeguards Bus
				Transitions to ECA-0.0A, Loss of All AC Power, step 24, when power is restored to an AC Safeguards Bus and directs operators
				Transitions to ECA-0.1A, Loss of All AC Power Recovery Without SI Required, or ECA-0.2A, Loss of All AC Power Recovery With SI Required, and direct operators

*BOLD INDICATES CRITICAL STEP

Facility:	CPSES	Scenario No.:	6(SPARE)	Op-Test No.:	11/2002
Examiners:	Howard Bundy	Operators:			
	Mike Murphy				
	Tom Stetka				
	Fred Sanchez				
Note:	(NEW)				
Initial Conditions:	50% Turbine Load at EOL (IC20; MS08B; MSIV 2 fails to close; Need to update operator aid to 25 psig in VCT)				
Turnover:	Plant startup in progress following a routine refueling outage. No equipment is out of service. IPO-003A, Power Operations, is complete through step 5.4.22. Starting at step 5.4.23, Establishing 100% Turbine Load, continue the plant startup in accordance with IPO-003A. Control Bank D at 170 steps, 517 MWE, 1554 ppm RCS boron Conc., Xenon at equilibrium conditions, Target power change ramp rate of 8%, MAX ramp rate of 10%.				
Event No.	Malf. No.	Event Type*	Event Description		
1 T=0		R (RO) N (BOP) N (SRO)	Increase turbine load in accordance with IPO-003A, Power Operation Note: Examiner must initiate Event 2		
2 T=15	CV15	C (SRO) C (RO)	PCV-131, "Letdown Pressure Control Valve" fails closed.		
3 T=23	IA01A	C (ALL)	Instrument air leak - IA Receiver 1-01 relief valve lifting (Severity = 1500 scfm leak)		
4 T=30	RP06A	I (SRO) I (RO)	Loop 1 N16 fails high (Start Event 5 prior to RO/BOP placing bistables in trip)		
5 T=46	RD01D	C (RO) C (SRO)	Control bank continuous rod withdrawal (Control Bank D)		
6	MS02 MS08B	M (ALL)	Main steam line leak outside containment downstream of SG 2 MSIV; SG 2 MSIV, HV-2334A, fails to close. (Insert at 1.13 x 10E7 lbm/hour) EXAMINER NOTE: INSERT AFTER TRANSITION TO EOS-0.1A.		

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

Op-Test No: **11/2002**Scenario No: **6**Event No: **1**Page **1** of **1**

Event Description: Increase turbine load in accordance with IPO-003A, Power Operations

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Review IPO-003A, Power Operations
				Briefs Crew on power change
				Calculates amount of dilution required
				Initiates RCS dilution
				Sets in the desired loading rate on the LOAD GRADIENT device
				Raises the LIMIT LOAD device to 1100 MW.
				Raises the LOAD REFERENCE device to 1050 MW in incremental steps
				Maintains Axial Flux Difference within the band

*BOLD INDICATES CRITICAL STEP

Op-Test No: 11/2002				Scenario No: 6				Event No: 2				Page 1 of 1			
Event Description: PCV-131, "LTDN Press Ctrl Valve," fails closed															
Time	RO	BOP	SRO	Applicant's Actions or Behavior											
				Refer to ALM-0061A											
				Letdown press > 310 psig, isolates letdown → closes 1/1-8149A, 1/1-8149B, and 1/1-8149C and transitions to ABN-105											
				Directs and Implements Procedure ABN-105, Section 5.0											
				Establishes excess letdown											
				Simultaneously lower 1-FK-121 to 32 gpm and adjust 1-HC-182 to 6 to 13 gpm											
				Align excess letdown per SOP-103A											
				Contacts the Prompt Team to repair PCV-131 and notifies Ops Managment											
				Note to Sim Oper: When called as PEO to open LCS-8409-RO, "U1 Ltdn Hx Out Press Ctrl Vlv Byp Remote Oper," report that the valve is stuck shut and CANNOT be opened											

***BOLD INDICATES CRITICAL STEP**

Op-Test No: <u>11/2002</u> Scenario No: <u>6</u> Event No: <u>3</u> Page <u>1</u> of <u>1</u>				
Event Description: Instrument Air leak due to IA Receiver 1-01 relief valve lifting				
Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Determines IA system has a leak by acknowledging alarm and observing plant parameters
				Directs and Implements Procedure ABN-301
				Verifies both IA compressors are running
				Determines IA press < 85psig
				Starts and aligns a common IA compressor
				Stops unnecessary use of IA
				Sends PEO to determine cause of low IA press (PEO finds IA Receiver 1-01 relief valve lifting - able to reset the valve)
				Checks equipment on main control board for proper operation
				Contacts Prompt Team and informs Ops Management

*BOLD INDICATES CRITICAL STEP

Op-Test No: **11/2002**Scenario No: **6**Event No: **4**Page **1** of **1**

Event Description: Loop 1 N16 fails high

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Directs and Implements Procedure ABN-704
				Place control rods in manual and ensure T_{ave} is within 1°F of T_{ref}
				Select the failed channel on 1/1-JS-411E, CHAN DEFEAT
				Within 6 hours have I&C place bistable test switches for failed channel in the CLOSED position
				Refer to T/S 3.3.1
				Contacts Prompt Team and Ops Management

*BOLD INDICATES CRITICAL STEP

Op-Test No: **11/2002**Scenario No: **6**Event No: **5**Page **1** of **1**

Event Description: Control Bank Continuous Rod Withdrawal

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Recognizes indications of control bank continuous withdrawal: Rods stepping out when not required Tavg increasing Pressurizer pressure increasing Pressurizer level increasing Informs SRO
				Refers to ABN-712, Rod Control System Malfunction, and directs operators
				Places rod control in manual and Reports rods continue to step out
				Directs operator to trip the reactor and perform the immediate actions of EOP-0.0A, Reactor Trip or Safety Injection, and directs operators
				Verify Reactor Trip
				Verify Turbine Trip
				Verify Power to AC Safeguards Busses
				Check if SI is Actuated
				Transitions to EOS-0.1A, Reactor Trip Response and directs operators

*BOLD INDICATES CRITICAL STEP

Op-Test No: 11/2002				Scenario No: 6		Event No: 6		Page 1 of 3	
Event Description: Main Steam line break outside containment downstream of SG 2 MSIV, HV-2334A, which fails to close									
Time	RO	BOP	SRO	Applicant's Actions or Behavior					
				Recognize indications of main steam line break outside containment: MSIVs on 1, 3 and 4 SGs close Safety Injection Steam line pressure decreasing Containment pressure and humidity indicates normal					
				Transitions back to EOP-0.0A, Reactor Trip or Safety Injection, Step 1 and directs operators					
				Verify Reactor Trip Verify Turbine Trip Verify Power to AC Safeguards Bussed					
				Verify both trains of SI actuated					
				Verify SSW pumps - RUNNING					
				Verify SI Pumps running					
				Verify CIS Phase A Verify CVIS actuation Verify CS initiated Verify CCW pumps running Verify RHR pumps running Verify CVCS proper alignment Verify Feedwater Isolation					

*BOLD INDICATES CRITICAL STEP

Op-Test No: 11/2002Scenario No: 6Event No: 6Page 2 of 3

Event Description: Main Steam line break outside containment downstream of SG 2 MSIV, HV-2334A, which fails to close

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Check if MS lines should be isolated
				Verify AFW Alignment
				Verify ECCS Flow
				Verify EDG status
				Check RCS Tave at or tending to 557
				Check PZR valve status
				Check if RCPs should be stopped
				At step 22, Check if any SG is faulted, transitions to EOP-2.0A, Faulted SG Isolation, and directs operators
				Attempts to manually close SG 2 MSIV - dispatches operators to locally close SG 2 MSIV
				Directs operators in isolation of SG 2

*BOLD INDICATES CRITICAL STEP

Op-Test No: **11/2002**Scenario No: **6**Event No: **6**Page **3** of **3**

Event Description: Main Steam line break outside containment downstream of SG 2 MSIV, HV-2334A, which fails to close

Time	RO	BOP	SRO	Applicant's Actions or Behavior
				Isolates SG 2 main feedline Isolates AFW flow to SG 2 Isolates SG 2 blowdown and sample lines Ensures SG 2 atmospheric closed Ensures SG 2 main steamline drip pot isolation valve closed
				At Step 8, transitions to EOP-1.0A, Loss of Reactor or Secondary Coolant, Step 1, and directs operators

*BOLD INDICATES CRITICAL STEP

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>CP1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.1.074.EA1.24</u>	
Importance Rating	<u>3.6</u>	<u>3.8</u>

Proposed Question:

The plant is responding to an inadequate core cooling condition with core exit thermocouples greater than 1200°F. From the choices below, select the choice that lists the best recovery technique in the correct priority for this condition.

- A. Start ECCS, depressurize secondary, start RCP, depressurize RCS.
- B. Start RCP, depressurize RCS, depressurize secondary, start ECCS.
- C. Trip RCPs, trip turbine, depressurize secondary, isolate accumulators.
- D. Start ECCS, depressurize RCS, trip RCPs, depressurize secondary.

Proposed Answer: A

Explanation:

Technical Reference: FRC-0.1A

Proposed references to be provided to applicants during examination:

Learning Objective: _____**Question Source:**

Bank #

CPSES
MCO.MI3.OB105-
005

Modified

New **Question History:**

Last NRC Exam _____

Cognitive Level:

 Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content:**55.41** 7 **55.43** **Comments:****RO TEST QUESTION #: 1**

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

1

1

K/A #

4.2.005.AA1.05

Importance Rating

3.4

3.4

Proposed Question:

During a Reactor startup with Control Bank D at 20 steps and the Reactor subcritical, the DRPI ROD DEV annunciator is received. The Reactor Operator observes that Control Bank B rod F2 indicates 210 steps while Control Bank B Group 1 step counter indicates 228 steps. No other alarms are received and all other parameters indicate normal. This event would require the crew to:

- A. Consider the rod misaligned and within one hour insert all Control Banks to Control Bank Offset (CBO).
- B. Consider the rod misaligned and continue rod withdrawal to reach Critical conditions then realign the rod.
- C. Consider the rod misaligned and compare DRPI and Step Counter positions at least once per 12 hours.
- D. Consider the rod misaligned and implement the requirements of Technical Specifications 3.0.3.

Proposed Answer: A

Explanation:

Technical Reference: ABN-712

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES
SYS.CR1.OB15- 4

Modified

New

Question History: Last NRC Exam

Cognitive Level:

X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content:

55.41

7

55.43

Comments:

RO TEST QUESTION #: 3

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.067.AA1.05</u>	
Importance Rating	<u>3.0</u>	<u>3.1</u>

Proposed Question:

The Control Room Ventilation System has been aligned for Control Room Recirculation due to a large fire in a field adjacent the plant. The Unit Supervisor checks the logs and realizes that the ventilation system has been in recirc for approximately 24 hours. Which of the following statements describes the situation in the Control Room?

- A. The humidity in the Control Room has dropped dangerously low due to too much time operating on recirc.
- B. The carbon monoxide level in the Control Room is increasing due to too much time operating on recirc.
- C. The air quality in the Control Room has been polluted by contaminants from the fire due to too much time operating on recirc.
- D. The carbon dioxide level in the Control room is increasing due to too much time operating on recirc.

Proposed Answer: D

Explanation:

Technical Reference: SOP-802 "Control Room Ventilation System"

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43 _____

Comments:

RO TEST QUESTION #: 4

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.068.AA1.14</u>	
Importance Rating	<u>4.2</u>	<u>4.4</u>

Proposed Question:

A fire in the control room with heavy smoke requires immediate evacuation of the control room. Unit 1 was at 95% power at the time the evacuation procedure was initiated. The Unit 1 Reactor Operator was only able to trip the turbine prior to exiting the control room. Assuming that the plant responds as expected, which ONE of the following local actions needs to be taken to complete the RO's initial evacuation assignments?

- A. Open the Reactor Trip Breakers.
- B. Isolate the Main Steam lines.
- C. Remove pressurizer PORV fuses.
- D. Isolate dilution paths and S/G Process Sampling.

Proposed Answer: B

Explanation:

Technical Reference: ABN-803A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 2703 Modified X
New _____

Question History: Last NRC Exam Prairie Island 1(WEC), 6/16/1997

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7, 8, 10
55.43 5

Comments:

Modifications: clarified stem, and adapted distracters to CPSES, and replaced one distracter.

RO TEST QUESTION #: 5

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.068.AA2.10</u>	
Importance Rating	<u>4.2</u>	<u>4.4</u>

Proposed Question:

A bomb threat has forced a control room evacuation. Prior to the bomb threat, the plant was operating steady at 100%. The relevant control room actions directed by ABN-905A "Loss of Control Room Habitability" were completed and plant operations have been transferred to the Remote Shutdown Panel (RSP). When the Reactor Operator arrives at the RSP, he should expect to see the following indications:

- A. Neutron flux decreasing steadily and rod bottom lights on.
- B. Neutron flux and rods at approximately the level they were when he left the control room.
- C. Neutron flux decreasing steadily and the reactor trip breakers are open.
- D. Neutron flux at approximately the level it was before he left the control room and reactor trip breakers closed.

Proposed Answer: C

Explanation:

ABN-905A directs a reactor trip prior to leaving the control room, and rod bottom lights are not indicated at the RSP. The RO can observe both neutron flux decreasing, and reactor trip breakers open from the RSP.

Technical Reference: ABN-905A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: _____ **Bank #** _____ **Modified** _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 1, 6, 10
55.43 _____

Comments:

RO TEST QUESTION #: 6

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

1

1

K/A #

4.2.076.AA2.03

Importance Rating

2.5

3.0

Proposed Question:

Unit 1 was at 35% power during a plant shutdown when a 20% load rejection occurred. The plant has been stabilized, and the shutdown is continuing. The daily RCS chemistry sample has been analyzed and the RCS specific activity determined to be 0.1 uc/gm Dose Equivalent I-131. The previous sample had a specific activity of 0.01 uc/gm Dose Equivalent I-131. Which one of the below statements identifies the required response?

- A. Be in mode 3 condition with Tave less than 500 degrees F within 6 hours.
- B. Initiate a Safety Injection and enter EOP-0.0A.
- C. Obtain and analyze a plant vent grab sample.
- D. Continue with plant operations as planned, there is no required response to the stated conditions.

Proposed Answer: C

Explanation:

Technical Reference: IPO-004A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES

Modified

IPO.XO4.OB900

- 002

X

New

Question History: Last NRC Exam

Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content:

55.41

10

55.43

5

Comments:

Modifications: altered two distractors.

RO TEST QUESTION #: 7

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.076.AA2.04</u>	
Importance Rating	<u>2.6</u>	<u>3.0</u>

Proposed Question:

The Liquid Waste Processing Effluent Radiation Monitor High Radiation alarm has been received. Which of the following is the correct action for the operator to take initially?

- A. Ensure X-RV-5251 is closed or close its upstream isolation valve.
- B. Reopen X-RV-5251 and ensure correct pump is running.
- C. Reopen X-RV-5253 and ensure correct pump is running.
- D. Ensure X-RV-5253 is closed or close its upstream isolation valve.

Proposed Answer: D

Explanation:

Technical Reference: ALM-301, ABN-903

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES
SYS.WP1.OB12 -
003

Modified

New

Question History:

Last NRC Exam

Cognitive Level:

 Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 10**55.43** 5

Comments:

RO TEST QUESTION #: 8

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.027.G.2.4.2</u>	
Importance Rating	<u>3.9</u>	<u>4.1</u>

Proposed Question:

The following SEQUENTIAL events have just occurred:

- charging flow decreased to minimum,
- pressurized level decreased,
- letdown isolated and heaters turned off,
- pressurized level increased to high level reactor trip.

Pressurizer level control selector switch is in the LT-459 position and pressure control is on PT-455. No operator actions have been taken. Which failure has occurred?

- A. Pressure Channel 455 failed high.
- B. Pressure Channel 455 failed low.
- C. Level channel 459 failed high.
- D. Level channel 459 failed low.

Proposed Answer: C

Explanation:

Technical Reference: LO21.RLS.IC3.LN

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
MCO.TA3.OB103
- 002

Modified

X
New

Question History:

Last NRC Exam _____

Cognitive Level:

 Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 7
55.43

Comments:

Modifications: altered two of the distracters.

RO TEST QUESTION #: 9

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.1.055.EK1.02</u>	
Importance Rating	<u>4.1</u>	<u>4.4</u>

Proposed Question:

Unit 1 has just experienced a station blackout and a subsequent reactor trip. According to EOS-0.1A "Reactor Trip Response," all of the following are indications of natural circulation flow EXCEPT:

- A. Steam generator pressures are stable or decreasing
- B. Pressurizer pressure is stable or decreasing
- C. Core exit thermocouple temperatures are stable or decreasing
- D. RCS cold leg temperatures at saturation temperature for S/G pressure

Proposed Answer: B

Explanation:

Technical Reference: EOS-0.1A Attachment 3

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank # INPO 10526 Modified X
New

Question History:

Last NRC Exam Indian Point 3 (WEC), 4/15/1996

Cognitive Level:

 Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 8, 10
55.43

Comments:

Modifications: adapted to CPSES terminology, and replaced one distracter.

RO TEST QUESTION #: 10

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.067.AK1.01</u>	
Importance Rating	<u>2.9</u>	<u>3.9</u>

Proposed Question:

While you are on shift on Saturday night, an equipment operator calls the control room and informs you that he has found a fire smoldering in an electrical panel. If available, the preferred method for fighting this type of fire is:

- A. halon.
- B. foam.
- C. water fog/spray.
- D. dry powder extinguisher.

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 5378 Modified
New

Question History: Last NRC Exam Salem 1(WEC), 1/22/1996

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 8, 10
55.43

Comments:

RO TEST QUESTION #: 11

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.069.AK1.01</u>	
Importance Rating	<u>2.6</u>	<u>3.1</u>

Proposed Question:

The following plant conditions exist:

- o Procedure in effect EOP-1.0B.
- o Containment pressure 65 psig and increasing.

You transition to FRZ-0.1B, "Response to High Containment Pressure" and upon completion of all steps in FRZ-0.1B, you determine that containment pressure is now 61 psig. At this point, you are required to:

- A. reinitiate and remain in FRZ-0.1B until the condition is no longer an ORANGE priority.
- B. exit FRZ-0.1B and enter EOS-0.0B.
- C. reinitiate and remain in FRZ-0.1B until the condition is no longer a RED priority.
- D. exit FRZ-0.1B and return to EOP-1.0B at the step in effect.

Proposed Answer: D

Explanation:

Technical Reference: FRZ-0.1B, and ODA-407 "Guideline on Use of Procedures"

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 8, 10
55.43 5

Comments:

RO TEST QUESTION #: 12

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.5.E09.EK1.02</u>	
Importance Rating	<u>3.3</u>	<u>3.7</u>

Proposed Question:

Which of the below most correctly completes the following statement regarding natural circulation?

"Natural Circulation flowrate will be greater if...

- A. ONE reactor coolant pump runs for an hour after the reactor trip, then stops."
- B. ALL reactor coolant pumps run until the plant is in mode 4, then stop."
- C. ALL reactor coolant pumps stop at the same time the reactor trips."
- D. ALL reactor coolant pumps run for an hour after the reactor trip, then stop."

Proposed Answer: C

Explanation:

Technical Reference:

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES

Modified

SJ2.XG7.OB104 -
002

X

New

Question History:

Last NRC Exam

Cognitive Level:

X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content:

55.41 8, 10**55.43**

Comments:

Modifications: several distracters altered.

RO TEST QUESTION #: 13

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.068.AK2.03</u>	
Importance Rating	<u>2.9</u>	<u>3.1</u>

Proposed Question:

Choose the statement which correctly describes the operational characteristics of "CR/HSP" switches positioned to "HSP."

- A. Deenergizes the associated component to its "fail-safe" position.
- B. Aligns alternate safe-shutdown control power to ensure automatic operation during a fire.
- C. Isolates the component from the Control Room and removes automatic control function.
- D. Isolates the component from the Control Room but maintains automatic control functions.

Proposed Answer: C

Explanation:

Technical Reference: OPT-216A "Remote Shutdown Operability Test"

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43 _____

Comments:

RO TEST QUESTION #: 14

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.051.AK3.01</u>	
Importance Rating	<u>2.8</u>	<u>3.1</u>

Proposed Question:

Given the following Unit 1 plant conditions:

- o Unit was initially at 100% power and has been manually tripped.
- o Tave is 542F on all channels.
- o "A" Condenser vacuum is 14" vacuum
- o "B" Condenser vacuum is 18" vacuum
- o two Circ water pumps are running

Which ONE of the following describes steam dump availability?

- A. Only the atmospheric dumps are available.
- B. Steam dump is NOT available.
- C. Only the condenser dump is available.
- D. Both atmospheric and condenser dumps are available

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 2694 Modified
New

Question History: Last NRC Exam Prairie Island 1 (WEC) 6/16/1997

Cognitive Level: Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5, 10
55.43

Comments:

RO TEST QUESTION #: 15

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.5.E07.EK3.01</u>	
Importance Rating	<u>3.1</u>	<u>3.7</u>

Proposed Question:

Given the following:

- The RCS has had a stuck open Pressurizer safety valve.
- The reactor tripped and safety injection initiated.
- The RCS rapidly depressurized to saturation conditions.
- Pressurizer level initially dropped and then began to rise rapidly.

Which one of the following characterizes the relationship between pressurizer level and RCS inventory under these conditions?

- A. Level is an accurate indication of inventory, because voiding would occur first in the pressurizer due to the high temperature of the pressurizer walls.
- B. Level is an accurate indication of inventory, because hydraulic pressure would force any voids to the pressurizer steam space and out the safety valve.
- C. Level is NOT an accurate indication of inventory, because RCS voiding may result in a rapidly increasing pressurizer level.
- D. Level is NOT an accurate indication of inventory, because at higher temperatures the cold calibrated pressurizer level channels falsely indicate high.

Proposed Answer: C**Explanation:****Technical Reference:** EOS-1.2A, step 14 caution**Proposed references to be provided to applicants during examination:****Learning Objective:** _____**Question Source:**

Bank #

CPSES

Modified

EO1.XG3.OB900 -4

New

Question History:

Last NRC Exam

Cognitive Level: Memory or Fundamental KnowledgeX

Comprehension or Analysis

10 CFR Part 55 Content:**55.41** 5, 10**55.43** **Comments:****RO TEST QUESTION #: 16**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>1</u>
K/A #	<u>4.1.029.EA1.03</u>	
Importance Rating	<u>3.5</u>	<u>3.2</u>

Proposed Question:

Given the following plant conditions:

- The unit was at 100% power
- A condition requiring a trip was diagnosed
- The operators are using FRS-0.1A, "Response to Nuclear Power Generation/ATWT", to respond to an ATWT
- The Turbine is tripped
- Emergency Boration valve 1/1-8104 has failed to open

Which ONE of the following describes the actions that the operator is required to perform?

- A. Open RWST supply to CCP's 1/1 LCV-112D and 1/1 LCV-112E, and shut VCT supply to CCP's 1/1 LCV-112B and 1/1 LCV-112C.
- B. Open VCT supply to CCP's 1/1 LCV-112B and 1/1 LCV-112C, and shut RWST supply to CCP's 1/1 LCV-112D and 1/1 LCV-112E.
- C. Open RWST supply to CCP's 1/1 LCV-112D, and shut VCT supply to CCP's 1/1 LCV-112B.
- D. Open VCT supply to CCP's 1/1 LCV-112B, and shut RWST supply to CCP's 1/1 LCV-112D.

Proposed Answer: A

Explanation:

Technical Reference: FRS-0.1A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: _____ **Bank #** _____ **Modified** _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ **Memory or Fundamental Knowledge**
X **Comprehension or Analysis**

10 CFR Part 55 Content: **55.41** 7
55.43 _____

Comments:

RO TEST QUESTION #: 17

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

2

1

K/A #

4.5.E02.EA1.01

Importance Rating

4.0

3.9

Proposed Question:

Unit 1 and Unit 2 have experienced a Reactor trip and a loss of offsite power. Unit 2 systems and equipment functioned as required. The following complications were experienced on Unit 1:

-The Train B Diesel Generator was tagged out for maintenance and Train A Diesel Generator started and supplied the 6.9 safeguards bus as required. An inadvertent Safety Injection has occurred. Train A CCP tripped on restart as the Blackout Sequencer fired.

-During the response actions of EOS-1.1A, "Safety Injection Termination", the Unit Supervisor identifies a caution that states "If RCP seal cooling had previously been lost, the affected RCP(s) should not be started prior to a status evaluation".

Which of the following is the appropriate recovery actions of EOS-1.1A for the conditions as described in this event?

- A. RCP seal injection valves are isolated. The PD pump is loaded on the Train A electrical bus to provide normal charging. Following restoration of non-safeguards power, RCPs are not started prior to an engineering evaluation.
- B. RCP seal injection valves are isolated. The PD pump is load shed on an SI signal and is not available to reload until the automatic SI signal is reinstated. Following restoration of non-safeguards power, RCPs are not started prior to an engineering evaluation.
- C. The PD pump is manually loaded on the Train A electrical bus to provide normal charging and seal injection. Following restoration of non-safeguards power, the RCP can be started in accordance with RCP operating instructions without an engineering evaluation. RCP seal injection valves are isolated.
- D. The PD pump is load shed on an SI signal and is not available to reload until the automatic SI signal is reinstated. Following restoration of non-safeguards power, RCPs can be started without an engineering evaluation.

Proposed Answer: C

Technical Reference: EOS-1.1A, STEP 26 CAUTION, EOP-0.0A, ATT. 9

Question Source:

Bank #

CPSES

Modified

SJ1.XG9.OB107-

1

New

Question History: Last NRC Exam

Cognitive Level: Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7

55.43

Comments:

RO TEST QUESTION #: 18

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>1</u>
K/A #	<u>4.5.E02.EA2.01</u>	
Importance Rating	<u>3.3</u>	<u>4.2</u>

Proposed Question:

Given the following:

- o A Turbine/Generator trip has caused a Reactor trip.
- o The operators are in EOP-0.0A, "Reactor Trip or Safety Injection," at step 4, "Check SI Status."
- o RCS pressure is 1980 psig and slowly dropping.
- o Pressurizer level is 22% and stable.
- o Core exit T/Cs are 575 F and slowly rising.
- o Containment pressure is 15 psia.
- o All S/G NR levels are 20% and slowly rising.

Which of the following actions should be taken?

- A. Transition to FRZ-0.1A, "Response to High Containment Pressure."
- B. Proceed to EOS-0.1A, "Reactor Trip Response."
- C. Transition to FRH-0.1A, "Response to Loss of Secondary Heat Sink."
- D. Initiate SI and continue in EOP-0.0A.

Proposed Answer: C

Explanation:

Technical Reference: EOP-0.0A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: _____ **Bank #** _____ **Modified** _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 10
55.43 _____

Comments:

RO TEST QUESTION #: 19

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.1.009.EA2.01</u>	
Importance Rating	<u>4.2</u>	<u>4.8</u>

Proposed Question:

The plant is recovering from a loss of coolant accident in accordance with EOP-1.0A "Loss of Reactor or Secondary Coolant" with current conditions as follows:

- SI Pump Status: Both On
- RCP Status: ALL On
- RCS Pressure: 1987 psig and Stable
- Highest T-hot: 552 degrees F and Stable
- Highest CET: 560 degrees F and Stable
- Pressurizer Level: 34% and Increasing
- 1A S/G Narrow Range Level: 12% and Stable
- 1B S/G Narrow Range Level: 17% and Decreasing
- Total AFW Flow: 100 gpm
- Containment Pressure: 5 psig

Which ONE of the following actions should be taken?

- A. Stop all running RCPs
- B. Transition to FRZ-0.1A "Response to High Containment Pressure"
- C. Increase Total AFW flow to > 200 gpm
- D. Transition to EOS-1.1A "SI Termination"

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination: _____

Learning Objective: _____

Question Source: Bank # INPO 10764 Modified X
New _____

Question History: Last NRC Exam Kewaunee 1 (WEC), 12/18/1997

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 10
55.43 5

Comments:

Modifications: replaced one distracter.

RO TEST QUESTION #: 20

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.1.038.3EA2.11</u>	
Importance Rating	<u>3.7</u>	<u>3.9</u>

Proposed Question:

During the diagnostic steps of EOP-0.0 following a manual Reactor trip and SI due to a slowly decreasing Pressurizer level, the BOP notices that the Main Steam Line Radiation Monitor for one of the Steam Generators had been in alarm, but is now reading only slightly above normal on the PC-11 trends. Which statement below is correct?

- A. The trend is correct because when the Reactor and Turbine were tripped, the steam flow through the detector decreased resulting in the lower reading.
- B. The trend is correct because while the Reactor was critical, N-16 was being produced and entering the SG through a leak. The N-16 has now decayed away resulting in a lower reading.
- C. The trend is correct because the Main Steam Line Radiation Monitors are isolated on the SI signal resulting in the decreased reading.
- D. The trend is incorrect because if the radiation monitor was in alarm, the trend should continue to increase as the Krypton and Xenon reach a new higher equilibrium value until the leak is stopped.

Proposed Answer: B

Explanation:

Technical Reference: SOER 93-1, PALO VERDE SGTR

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # CPSES Modified _____
SYS.RM1.OB13-6
 New _____

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: 55.41 11
55.43 5

Comments:

RO TEST QUESTION #: 22

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

2

1

K/A #

4.5.E02.EK1.02

Importance Rating

3.4

3.9

Proposed Question:

Following a LOCA, if the SI accumulators cannot be isolated, the correct action is to:

- A. continue with the following steps, since isolation is not required.
- B. drain the SI accumulators.
- C. sample the pressurizer steam space for noncondensibles.
- D. vent the SI accumulators.

Proposed Answer: D

Explanation:

Technical Reference: EOP-1.0A, STEP 15 BASIS

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES

Modified

ERG.XDD.OB103-

1

New

Question History: Last NRC Exam

[illegible]

10 CFR Part 55 Content:	55.41	<u>8, 10</u>
	55.43	

Comments:

RO TEST QUESTION #: 24

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

2

1

K/A #

4.5.E04.EK1.01

Importance Rating

3.5

3.9

Proposed Question:

ECA-1.2A, "LOCA Outside Containment", alerts the operator that some points of the system are a high probability for a LOCA. Which of the below has the highest probability for a LOCA outside containment?

- A. CCW piping interface with RCP Seals
- B. RHR low pressure piping arrangement
- C. SI to RHR cross-tie piping arrangement
- D. SI piping and injection lines to the RCS

Proposed Answer: B

Explanation:

Technical Reference: ECA-1.2A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES
SM1.XGH.OB102-

Modified

1

X

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge

X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 8, 10

55.41

8, 10

55.43

Comments:

Modification: altered one distracter.

RO TEST QUESTION #: 25

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

2

1

K/A #

4.5.E01.EK2.01

Importance Rating

3.3

3.5

Proposed Question:

In accordance with the information provided on the foldout page of EOS-0.0A, "Rediagnosis" operators should proceed to FRZ-0.1A, "Response to High Containment Pressure," if:

- A. containment pressure indicates > 50 psig.
B. containment pressure is > 5 psig, and level in all SGs is < 5% (NR).
C. containment pressure indicates >5 psig.
D. containment pressure is >15 psig and containment spray is not on.

Proposed Answer: A

Explanation:

Technical Reference: EOS-0.0A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES

Modified

SJ1.XG5.OB105 -
002

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7

55.43

Comments:

RO TEST QUESTION #: 26

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

2

1

K/A #

4.5.E01.EK2.02

Importance Rating

3.5

3.8

Proposed Question:

Unit 2 is operating in EOP-0.0B, REACTOR TRIP OR SAFETY INJECTION. The Reactor is tripped and safety injection has actuated. The following plant indications and responses are observed;

- Containment pressure is 8 psig and rising.
- RCS subcooling is 57°F.
- Both CCPs and SIPs are running.
- Both CCWPs are running.
- Pressurizer level is 13%.
- Pressurizer pressure is 1815 psig.
- Two banks of steam dumps are open.
- Tave is 563 and rising.

Based on the above information, from the list below SELECT the required action.

- Increase auxiliary feedwater flow to the steam generators.
- Take manual control of steam dumps and increase demand.
- Take manual control of SG ARVs and throttle to control temperature.
- Allow SG ARVs to automatically control temperature..

Proposed Answer: C

Technical Reference: EOP-0.0B

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES

Modified

EO0.XG2.OB402-

2

New

Question History:

Last NRC Exam

Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content:

55.41

7

55.43

Comments:

RO TEST QUESTION #: 27

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>1</u>
K/A #	<u>4.2.001.AK2.05</u>	
Importance Rating	<u>2.9</u>	<u>3.1</u>

Proposed Question:

Unit 1 is steady with reactor power at 90%. All systems are operating normally with the rod control system in automatic. Without warning, the rods begin to step and Tav_g begins to increase above T_{ref}, which remains constant. Pressurizer pressure and level also begin to increase.

These symptoms are consistent with which of the following?

- A. PRZR pressure control system failure
- B. Main turbine/generator load increase
- C. Continuous rod insertion
- D. Continuous rod withdrawal

Proposed Answer: D

Explanation:

Technical Reference: ABN-712A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
SYS.CR1.OB09-1

Modified

New

Question History: Last NRC Exam

Cognitive Level:

 Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 7
55.43

Comments:

RO TEST QUESTION #: **28**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.5.E05.EK3.01</u>	
Importance Rating	<u>3.4</u>	<u>3.8</u>

Proposed Question:

What adverse consequence could result from delaying feed and bleed cooling if the conditions are met in FRH-0.1B "Response to Loss of Secondary Heat Sink"?

- A. Inability to provide sufficient injection for core cooling due to high RCS pressure.
- B. High temperature induced failure of U-tube bends
- C. RCP seal failure
- D. Inability to recover the SGs without damage from high thermal stresses.

Proposed Answer: A

Explanation:

Technical Reference: FRH-0.1B

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 8340 Modified
New

Question History: Last NRC Exam Ginna 1 (WEC), 5/8/1996

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5, 10
55.43

Comments:

RO TEST QUESTION #: **29**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.5.E16.EK3.01</u>	
Importance Rating	<u>2.9</u>	<u>3.1</u>

Proposed Question:

Unit 2 is operating at 100% power. Over twelve hours the following plant indications and responses were observed in the control room;

- Containment humidity increased slightly
- Containment radiation increased slightly
- Containment dew point increased slightly
- Containment sump pumps have operated 1 time every hour.
- Automatic makeup to the VCT occurred 7 times.
- Letdown was maintained at 70 gpm and charging went from 82 gpm to 78 gpm.
- Pressurizer level has remained at 60%.
- Pressurizer pressure has trended from 2235 psig to 2220 psig and stabilized.
- No other abnormal alarms are annunciated.

Based on the above indications the operating crew entered ABN-103 and the following actions were taken;

- Radiation Protection was contacted to investigate containment radiation.
- Preparations are in progress to make a containment entry.
- Radiation Protection and Radwaste were notified that containment sumps would be left in operation to the WHT.
- Letdown and charging have been isolated and then realigned for normal operation.
- OPT-303 has been performed and unidentified leakage is 6 gpm.
- Preparations are being made to commence a reactor shutdown.

Based on the above information, SELECT from the list below the source of the unidentified leakage.

- A. Reactor Coolant System cold leg leak.
- B. Reactor Coolant System hot leg leak.
- C. Pressurizer vapor space leak.
- D. The yellow condition guideline must be implemented immediately due to plant conditions.

Proposed Answer: C

Technical Reference: ABN-103A

Question Source:

Bank #

CPSES
SYS.RC1.OB14
010

Modified

New

Cognitive Level:

Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 5, 10

55.43

Comments:

RO TEST QUESTION #: 30

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>1</u>
K/A #	<u>4.5.E01.EK3.02</u>	
Importance Rating	<u>3.0</u>	<u>3.9</u>

Proposed Question:

Which of the below most correctly completes the following statement regarding natural circulation?

"Natural circulation flowrate will be greater if..

- A. reactor coolant pumps stop at the same time the reactor trips"..
- B. ALL reactor coolant pumps run for an hour after the reactor trip, then stop".
- C. one reactor coolant pump runs for an hour after the reactor trip, then stops".
- D. two reactor coolant pumps run for an hour after the reactor trip, then stop".

Proposed Answer: B

Explanation:

Technical Reference: EOS-0.0A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
SJ1.XG5.OB101 -
001

Modified

New

Question History: Last NRC Exam

Cognitive Level:X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content:**55.41** 5, 10**55.43** **Comments:**

RO TEST QUESTION #: 31

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.2.008.AK3.03</u>	
Importance Rating	<u>4.1</u>	<u>4.6</u>

Proposed Question:

EOP-1.0A, "Loss of Reactor or Secondary Coolant," Step 1; "Check if RCPs should be stopped," is a continuous action step. Which ONE of the following is the basis for continuously monitoring for the criteria to perform this step in response to a LOCA?

- A. Minimize cooldown rate
- B. Prevent excessive RCS inventory loss
- C. Prevent RCP damage from cavitation
- D. Minimize RCP run time with less than the required subcooling

Proposed Answer: B

Explanation:**Technical Reference:** _____

Proposed references to be provided to applicants during examination: _____

Learning Objective: _____**Question Source:**

Bank # INPO 10769 Modified
New

Question History: Last NRC Exam Kewaunee 1 (WEC), 12/18/1997

Cognitive Level:

 Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 5, 10
55.43

Comments:

RO TEST QUESTION #: 32

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	<u>1</u>	<u>1</u>
	Group #	<u>2</u>	<u>2</u>
	K/A #	<u>4.5.E03.EK3.04</u>	
	Importance Rating	<u>3.5</u>	<u>3.9</u>

Proposed Question:

Unit 1 Pressurizer level is 89% and the RVLIS 49" above flange lights are dark and the plant computer indicates an INVENTORY yellow condition. The unit has experienced a small break LOCA and plant response is being directed by EOS-1.2A, POST-LOCA COOLDOWN AND DEPRESSURIZATION. ECCS flow has not been terminated. The Unit Supervisor has currently decided not to implement the yellow condition guideline. From the list below SELECT why this is or is not an acceptable decision.

- A. Transition has been made from EOP-0.0A, the yellow condition guideline should be implemented when EOS-1.2A is completed.
- B. There exist other, more critical plant conditions that should be addressed before implementation of the yellow condition guideline.
- C. Voids are not a concern when responding to a small break LOCA.
- D. The yellow condition guideline must be implemented immediately due to plant conditions.

Proposed Answer: B

Explanation:

Technical Reference: FRI-0.3A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:	Bank #	CPSES	Modified
		FRI.XH6.OB401	
		005	
			New

Question History: Last NRC Exam

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:	55.41	5, 10
	55.43	

Comments:

RO TEST QUESTION #: 33

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>3</u>	<u>2</u>
K/A #	<u>4.2.065.AA1.05</u>	
Importance Rating	<u>3.3</u>	<u>3.3</u>

Proposed Question:

Unit 1 is in MODE 2 with a startup in progress when instrument air header pressure begins decreasing. Attempts to restart and align an instrument air compressor to Unit 1 are unsuccessful and instrument air header pressure reaches 30 psig. The RO opens the Reactor Trip Breakers and the crew enters EOP-0.0. Select the corrective actions to be taken in response to this loss of Instrument air.

Dispatch a PEO to.....

- A. close the MSIVs.
- B. control charging flow.
- C. close the S/G ARVs.
- D. control AFW flow.

Proposed Answer: B

Explanation:

Technical Reference: ABN-301A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
SYS.IA1.OB14-
005

Modified

New _____

Question History: Last NRC Exam _____

Cognitive Level:X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content:**55.41**7**55.43****Comments:**

RO TEST QUESTION #: **34**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>4.2.028.AA1.07</u>	
Importance Rating	<u>3.3</u>	<u>3.3</u>

Proposed Question:

The reactor is critical at 10E-4% power when charging pump suction inadvertently switches from the VCT to the RWST. This occurs for approximately 10 minutes, then is stopped by the operators. Which one of the following describes the comparative effect that this will have on letdown flow?

- A. It will decrease the most at EOL.
- B. It will decrease the most at BOL.
- C. It will not be significantly affected.
- D. It will increase the most at BOL.

Proposed Answer: C

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination: _____

Learning Objective: _____

Question Source:

Bank
#

INPO 194

Modified
#

New

Question History:

Last NRC Exam Arkansas Nuclear 2 (CE), 8/28/1998

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u> X </u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41

7

55.43

Comments:

RO TEST QUESTION #: 35

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

3

3

K/A #

4.2.056.AA2.02

Importance Rating

3.5

3.6

Proposed Question:

The plant is recovering from a loss of off-site power. Select the choice below which can be used as an indication that the Blackout Sequencer Operator Lockouts have reset (no longer present).

- OL light on the associated sequencer is lit.
- All step lights are lit on both sequencers.
- Start of RMUW pump on associated train.
- TD AFW pump steam supply valve opens.

Proposed Answer: C

Explanation:

Technical Reference: ABN-602A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie

SYS.ES3.OB11-1

d

New

Question History: Last NRC Exam

Cognitive Level: X
_____ Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content:	55.41	10
	55.43	5

Comments:

RO TEST QUESTION #: 36

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.7.015.A1.08</u>	
Importance Rating	<u>3.3</u>	<u>3.4</u>

Proposed Question:

Which limiting safety system setting provides a correction for changes in density and heat capacity of the reactor coolant system?

- A. Overpower Delta T
- B. Power Range High Flux
- C. Pressurizer Low Pressure
- D. Overtemperature Delta T

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 9124 Modified X
New

Question History: Last NRC Exam Cook 1 (WEC), 7/7/1997

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43

Comments:

Modifications: Replaced one distracter.

RO TEST QUESTION #: **37**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.5.022.A1.02</u>	
Importance Rating	<u>3.6</u>	<u>3.8</u>

Proposed Question:

Technical Specification state, "Containment pressure shall be maintained between - 0.3 and +1.3 psig in Modes 1, 2, 3 and 4." Which Containment system is used to control Containment pressure?

- A. Containment Pressure Relief System
- B. Containment Ventilation System
- C. Containment Pressure Control System
- D. Containment Purge Supply and Exhaust System

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination: _____

Learning Objective: _____

Question Source:

Bank	CPSES	Modified	X
#	<u>SYS.CL1.OB16</u>	d	<u> </u>
		New	<u> </u>

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43

Comments:

Modifications: Replaced one distracter.

RO TEST QUESTION #: **38**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.5.022.A2.06</u>	
Importance Rating	<u>2.8</u>	<u>3.2</u>

Proposed Question:

The containment design criteria are based on limiting the containment leakage rate under design basis accident conditions. According to the limiting containment analysis, containment pressure will:

- A. exceed the containment design pressure for a short time, but the containment cooling systems will ultimately restore containment pressure below the design limit.
- B. not exceed the containment design pressure initially. However, the analysis assumes a hydrogen burn that results in containment overpressure, which is ultimately controlled by the containment cooling systems.
- C. exceed the containment ultimate capacity, leading to a gross failure of the containment structure.
- D. not exceed the containment design pressure as long as a single train of containment cooling systems operates to perform its design function.

Proposed Answer: D

Explanation:

Technical Reference: ERG-HP/LP BACKGROUND, FRZ-0.1

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES MCO.MIF.OB102- 1	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

 X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u> 5 </u>
55.43	<u> 5 </u>

Comments:

RO TEST QUESTION #: 39

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

1

1

K/A #

3.4.059.A2.04

Importance Rating

2.9

3.4

Proposed Question:

ECA-2.1A/B, "Uncontrolled Depressurization of All Steam Generators," identifies that Auxiliary Feedwater flow to each Steam Generator with a narrow range level of less than 5% must be controlled at a minimum of 100 gpm. Which of the following is the reason for the minimum flow requirement?

- A. Prevent Steam Generator tube dryout.
- B. Ensure adequate RCS subcooling margin.
- C. Maintain a verifiable cooldown rate.
- D. Prevent further Steam Generator depressurization.

Proposed Answer: A

Explanation:

Technical Reference: ECA-2.1A/B STEP 2 AND BASES

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie
d

SK1.XG1.OB103-
1

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content:	55.41	5
	55.43	5

Comments:

RO TEST QUESTION #: 40

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.7.072.A2.01</u>	
Importance Rating	<u>2.7</u>	<u>2.9</u>

Proposed Question:

WHICH ONE of the following electrical power systems would effect the operation of the Unit 1 Control Room Air Area Radiation Monitors when LOST?

- A. 118 VAC Instrument Bus System.
- B. QSPDS Power Supply System.
- C. 120 Volt Vital AC System.
- D. Non-Safety related 125 VDC System.

Proposed Answer: A

Explanation:

Technical Reference: Drawing E1-0018-H

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: _____ **Bank #** _____ **Modified** _____
New X

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43 5

Comments:

RO TEST QUESTION #: **41**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.2.004.A2.19</u>	
Importance Rating	<u>2.8</u>	<u>3.5</u>

Proposed Question:

During oxygen scavenging in the RCS, the CVCS demineralizers flow is:

- A. maximized to aid in removal of the ammonia which is created by the evolution.
- B. bypassed to prevent the creation of ammonia from the added hydrazine.
- C. maximized to aid in removal of chlorides and fluorides from the RCS.
- D. bypassed to prevent the removal of the added hydrazine before it can remove the oxygen.

Proposed Answer: D

Explanation:

Technical Reference: IPO-001

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank #	CPSES IPO.XO1.OB900- <u>6</u>	Modified <u> </u> New <u> </u>
-----------	-------------------------------------	--

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43 5

Comments:

RO TEST QUESTION #: **42**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.4.061.A3.02</u>	
Importance Rating	<u>4.0</u>	<u>4.0</u>

Proposed Question:

Given the following:

- ECA-2.1A, "Uncontrolled Depressurization of All Steam Generators," has been entered.
- SGs 1, 3, and 4 narrow range levels are 20%.
- SG 2 narrow range level is 40%.
- RCS pressure is 1200 psig and decreasing.
- RCS subcooling is 42 degrees F.
- Containment pressure is 14 psig.
- RCS cooldown rate is greater than 100 degrees F/hour.

Which one of the following actions should be taken for the given conditions?

- A. Stop AFW flow to all SGs until cooldown rate is less than 100 degrees F/hour.
- B. Reduce AFW flow to SGs 1, 3, and 4 to 100 gpm until cooldown rate is less than 100 degrees F/hour.
- C. Stop AFW flow to SGs 1, 3, and 4 until cooldown rate is less than 100 degrees F/hour.
- D. Reduce AFW flow to SG 2 to 100 gpm and stop AFW flow to SGs 1, 3, and 4 until cooldown rate is less than 100 degrees F/hour.

Proposed Answer: B**Explanation:****Technical Reference:** ECA-2.1A**Proposed references to be provided to applicants during examination:****Learning Objective:** _____**Question Source:**

Bank #	CPSES EO2.XG4.OB900 001	Modified
		New

Question History: Last NRC Exam _____**Cognitive Level:**

<u>Memory or Fundamental Knowledge</u>
<u>X</u> Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u>7</u>
55.43	_____

Comments:**RO TEST QUESTION #:** 43

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.2.004.A3.12</u>	
Importance Rating	<u>3.0</u>	<u>2.7</u>

Proposed Question:

TCV-129 protects the BTRS demineralizers by:

- A. shutting the BTRS isolation valves at 155°F upstream of the BTRS demineralizers.
- B. diverting CVCS letdown flow to the VCT which stops flow through BTRS at 155°F upstream of the BTRS demineralizers.
- C. starting the BTRS chiller at 155°F upstream of the BTRS demineralizers.
- D. TCV-129 does not protect the BTRS demineralizers.

Proposed Answer: B

Explanation:

Technical Reference: SOP-106A SECTION 4.0

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SYS.BT1.OB900 016	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: 55.41 7
55.43

Comments:

RO TEST QUESTION #: 44

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.4.003.A3.01</u>	
Importance Rating	<u>3.3</u>	<u>3.2</u>

Proposed Question:

A caution in EOP-1.0A/B, "Loss of Reactor or Secondary Coolant" states that "seal injection flow should be maintained to all RCPs". After the Unit Supervisor has informed the operating crew of this caution, the RO checks seal injection flow and identifies that seal injection flow is approximately 20 gpm to each Reactor Coolant Pump.

Which of the following is the proper initial response to the current plant conditions?

- A. Quickly proceed to the ECCS Termination Criteria to determine if one CCP can be stopped.
- B. Reference ABN-101, "Reactor Coolant Pump Trip/Malfunction" for possible RCP No. 1 Seal Failure.
- C. Verify that HV-8801A and HV-8801B have not closed causing an increased flow through the RCP seal injection.
- D. Adjust charging flow control valve FCV-121 to obtain seal injection flow to within 6 to 13 gpm.

Proposed Answer: D

Explanation:

Technical Reference: EOP-1.0A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SJ3.XG2.OB104 009	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u>X</u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u>7</u>
55.43	<u> </u>

Comments:

RO TEST QUESTION #: 45

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.4.059.A4.11</u>	
Importance Rating	<u>3.1</u>	<u>3.3</u>

Proposed Question:

Which ONE of the following Feedwater Isolation Signals (FWI) must be manually reset by pushing the FWI reset pushbuttons before the feedwater isolation valves may be opened?

- A. Containment Isolation
- B. Safety Injection
- C. Hi-Hi Steam Generator Level
- D. P-4 coincident with Lo Tave.

Proposed Answer: D

Explanation:

Technical Reference: SOP-302A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SYS.MF1.OB07 - 002	Modified
		New <u> </u>

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: 55.41 7
 55.43 _____

Comments:

RO TEST QUESTION #: 46

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.9.068.G.2.3.4</u>	
Importance Rating	<u>2.5</u>	<u>3.1</u>

Proposed Question:

A discharge permit is being routed to discharge Plant Effluent Holdup and Monitor Tank to Outfall 004. Which of the following Post NID QA Analysis results require that the radwaste supervisor be notified?

- A. Antimony (Sb) - 1.5 E-6 uci/ml
- B. Cobalt (Co) - 2.3 E-7 uci/ml
- C. Cesium (CS) - 1.0 E-5 uci/ml
- D. Iodine (I) - < MDA

Proposed Answer: C

Explanation:

Technical Reference: RWS-103 ATT9

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SYS.WP1.OB07 001	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

<u>X</u>	Memory or Fundamental Knowledge
_____	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u>10</u>
55.43	<u>4</u>

Comments:

RO TEST QUESTION #: 47

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

1

1

K/A #

3.7.015.K1.03

Importance Rating

3.1

3.1

Proposed Question:

A normal reactor startup is planned for the unit following maintenance on excore nuclear instrumentation. Believing a problem may still exist, the RO is directed to closely observe source range operation throughout the evolution. Which one of the following is an indicator that the source range channel failed high during the reactor startup? Assume that the reactor trips.

- A. Rod withdrawal block
- B. P-6 energized
- C. P-10 energized
- D. Flux Doubling Alarm is lit

Proposed Answer: D

Explanation:

Technical Reference: ALM-0064

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie

SYS.EC1.OB10-2

d

New

Question History: Last NRC Exam

Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content:

55.41 2, 9

55.43

Comments:

RO TEST QUESTION #: 48

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.7.017.K1.02</u>	
Importance Rating	<u>3.3</u>	<u>3.5</u>

Proposed Question:

With Hot and Cold leg injection in progress, which of the following temperature indications should be used to monitor RCS temperature?

CET Temperature equal to:

- A. Representative CET
- B. Hot leg Safety Channel
- C. Cold leg Safety Channel
- D. Subcooled Margin

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 3145 Modified
New

Question History: Last NRC Exam Waterford 3 (WEC), 9/6/1996

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 2, 9
55.43

Comments:

RO TEST QUESTION #: 49

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.1.001.K1.05</u>	
Importance Rating	<u>4.5</u>	<u>4.4</u>

Proposed Question:

An approach to criticality is being performed by means of control rod withdrawal. The RO stops control rod motion when the reactor is close to criticality but still subcritical. The SR count rate should:

- A. continue to increase, but at a slower rate. The startup rate should stabilize at a lower positive value.
- B. continue to increase for a short time and then plateau. The startup rate should gradually decrease to zero.
- C. stop increasing and stabilize at its present value. The startup rate should immediately decrease to zero.
- D. begin to slowly decrease. The startup rate should gradually decrease to zero from a slightly negative value.

Proposed Answer: B

Explanation:

Technical Reference: IPO-002A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES IPO.XO2.OB900- 012	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u>X</u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u>2, 9</u>
55.43	<u> </u>

Comments:

RO TEST QUESTION #: 50

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.7.015.K1.08</u>	
Importance Rating	<u>2.6</u>	<u>2.9</u>

Proposed Question:

With the unit at 85% power, the Reactor Operator notes that the P-8 permissive lamp on the PCIP suddenly comes on. The Unit Supervisor determines that protection is no longer provided for the loss of a single RCP. The most appropriate action in accordance with Technical Specifications would be to:

- A. Restore P-8 within 6 hours or be in HSB within the next 6 hours.
- B. Restore P-8 within one hour or be in MODE 2 in 7 hours.
- C. Restore P-8 within one hour or trip associated bistables within 6 hours.
- D. Reduce power to less than 48% within one hour.

Proposed Answer: B

Explanation:

Technical Reference: TS 3.3.1

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank CPSES Modified
SYS.ES1.OB17-1
New

Question History: Last NRC Exam _____

Cognitive Level:

 Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 2, 9
55.43

Comments:

RO TEST QUESTION #: 51

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

1

1

K/A #

3.4.003.K1.01

Importance Rating

2.6

2.8

Proposed Question:

Unit 1 is operating at 50% power when a RCP Lube Oil Low Level alarm actuates. Maintenance personnel request to enter the Containment Loop Rooms to setup a camera for remote monitoring capability. Who must approve this entry into the Containment Loop Rooms?

- A. Shift Manager.
B. Radiation Protection Manager.
C. Plant Manager.
D. Either B or C.

Proposed Answer: D

Explanation:

Technical Reference: OPD1.ADM.XAB, STA-620

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie
d

ADM.XAB.OB13-
1

New

Question History: Last NRC Exam

[illegible]

10 CFR Part 55 Content:	55.41	2, 9
	55.43	

Comments:

RO TEST QUESTION #: 52

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.4.003.K1.10</u>	
Importance Rating	<u>3.0</u>	<u>3.2</u>

Proposed Question:

The following conditions exist:

- RCS temperature - 340 degrees F
- Steam Generator pressure - 50 psig
- A bubble exists in the Pressurizer

Which ONE of the following statements would describe the initial primary plant response if a Reactor Coolant Pump were started?

- | | RCS
temperature | RCS
pressure |
|----|--------------------|-----------------|
| A. | INCREASE | INCREASE |
| B. | INCREASE | DECREASE |
| C. | DECREASE | INCREASE |
| D. | DECREASE | DECREASE |

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 16073 Modified
New

Question History: Last NRC Exam Byron 1 (WEC), 10/14/1996

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 2, 9
55.43

Comments:

RO TEST QUESTION #: 53

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.5.022.K3.02</u>	
Importance Rating	<u>3.0</u>	<u>3.3</u>

Proposed Question:

Which plant condition will most likely cause a RV FLANGE LKOFF TEMP HI alarm?

- A. Loss of Ventilation Chillers 1, 2, 3 and 4.
- B. Loss of Ventilation Chillers 7, 8 and 9.
- C. Loss of power to 1PC1.
- D. Loss of power to 1C1.

Proposed Answer: A

Explanation:

Technical Reference: ALM-0053A, Window 1.1

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank #

CPSES
SYS.RC1.OB04

Modified

New

Question History:

Last NRC Exam

Cognitive Level:X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content:**55.41**7**55.43****Comments:**

RO TEST QUESTION #: **54**

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

1

1

K/A #

3.4.061.K3.02

Importance Rating

4.2

4.4

Proposed Question:

During the performance of IPO-002A the operator is directed to replace Motor Driven AFW pump fuses. These fuses restore pump auto-start on:

- A. LO-LO S/G level.
- B. Blackout Signal.
- C. Safety Injection Signal.
- D. trip of both Main Feedwater Pumps..

Proposed Answer: D

Explanation:

Technical Reference: IPO-002A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie
d

IPO.XO2.OB900 -
023

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content:	55.41	7
	55.43	

Comments:

RO TEST QUESTION #: 55

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.4.061.K4.01</u>	
Importance Rating	<u>4.1</u>	<u>4.2</u>

Proposed Question:

Given the following:

- o The Unit is in mode 3.
- o A loss of offsite power has occurred.
- o Steam is being released through the S/G PORV's.

What is the minimum level required in the CST to support cooldown to RHR entry conditions?

- A. 63%
- B. 69%.
- C. 53%.
- D. 59%.

Proposed Answer: C

Explanation:

Technical Reference: TS 3.7.6

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified X
New _____

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
____ Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43 _____

Comments:

RO TEST QUESTION #: 56

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.2.013.K4.12</u>	
Importance Rating	<u>3.7</u>	<u>3.9</u>

Proposed Question:

WHICH ONE (1) of the following describes the design interlock or operating practice that is used to prevent ALL automatic Safety Injection (SI) actuations following a reset of the SI signal?

- A. The sixty (60) second delay timer in the SI reset circuitry.
- B. Manually blocking steam line pressure and PZR pressure SI from the control board.
- C. The seal-in feature of the reset circuitry disarms all subsequent SI actuations.
- D. The P-4 interlock, actuated by the opening of the reactor trip breakers.

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination: _____

Learning Objective: _____

Question Source:

Bank # INPO 4225 Modified
New

Question History: Last NRC Exam Harris 1 (WEC), 2/24/1997

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43

Comments:

RO TEST QUESTION #: **57**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.1.001.K4.23</u>	
Importance Rating	<u>3.4</u>	<u>3.8</u>

Proposed Question:

During a 10% step load increase, the operator observes:

- 855 MWe (stable)
- Tave - Tref error = 8°F (Tave 8°F low)
- 68% RTP (increasing)
- OTNI6/C-3 (PCIP) dark
- all controls in automatic

Which of the below describes a possible response of the rod control system during this transient?

- A. Rods not moving out due to the OPNI6 rod stop (C-4).
- B. Rods moving out due to Rx power increasing with turbine load constant.
- C. Rods not moving out to restore Tave (when Tave is 3°F low) due to Reactor power increasing.
- D. Rods moving out to restore Tave (when Tave is 3°F low) due to Reactor power increasing.

Proposed Answer: C

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # CPSES Modified X
MCO.TA2.OB103
 New _____

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43 _____

Comments:

Modification: replaced one distracter.

RO TEST QUESTION #: 58

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.2.013.K6.01</u>	
Importance Rating	<u>2.7</u>	<u>3.1</u>

Proposed Question:

An Engineered Safety Features (ESF) Containment Hi-3 Pressure signal occurs when:

- A. 2/4 Hi containment pressure detectors sense pressure \geq 3.2 psig.
- B. 2/4 Hi containment pressure detectors sense pressure \geq 18.2 psig.
- C. 2/3 Hi containment pressure detectors sense pressure \geq 18.2 psig.
- D. 2/3 Hi containment pressure detectors sense pressure \geq 3.2 psig.

Proposed Answer: B

Explanation:

Technical Reference: ALM-0022A (ALB 2B, 3.10)

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank	CPSES	Modified
#	<u>SYS.CT1.OB04-3</u>	<u>X</u>
		New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43

Comments:

Modified: altered one distracter

RO TEST QUESTION #: 59

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.7.012.A1.01</u>	
Importance Rating	<u>2.9</u>	<u>3.4</u>

Proposed Question:

During the performance of OPT-309, "Unit Calorimetric", the feedwater temperature points utilized were reading 10°F LOWER than actual feedwater temperature. Power range nuclear instruments adjustments were performed per the OPT.

What is the status of the current power range indications?

- A. Indicated power is LESS THAN actual power; therefore, power range instruments are set CONSERVATIVELY.
- B. Indicated power is LESS THAN actual power; therefore, power range instruments are set NON-CONSERVATIVELY.
- C. Indicated power is GREATER THAN actual power; therefore, power range instruments are set NON-CONSERVATIVELY.
- D. Indicated power is GREATER THAN actual power; therefore, power range instruments are set CONSERVATIVELY.

Proposed Answer: D

Explanation:

Technical Reference: LO21.SF4.XOC, OPT-309

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SF4.XOC.OB103- <u>1</u>	Modified New <u> </u>
--------	-------------------------------------	-----------------------------------

Question History: Last NRC Exam

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u> X </u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u> 5 </u>
55.43	<u> </u>

Comments:

RO TEST QUESTION #: 60

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.8.029.A2.01</u>	
Importance Rating	<u>2.9</u>	<u>3.6</u>

Proposed Question:

Given the following conditions:

- Unit 1 is in mode 6 for a refueling outage.
- Off-load of fuel is 55 % complete and ongoing.
- Containment purge and exhaust is in service.
- The instrument department has just reported that the current HI and HI-HI setpoints for CONTAINMENT EXHAUST RADIATION MONITOR were incorrectly set two decades HIGH.

Based on this information, the required action is to:

- A. suspend core off-load until the containment purge and exhaust valves are closed.
- B. suspend core off-load until the correct setpoints are entered.
- C. continue core off-load and direct HP to perform continuous air monitoring of the containment.
- D. continue core off-load and verify purge exhaust directed through the charcoal filter bank.

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 1342 Modified
New

Question History: Last NRC Exam North Anna 1 (WEC), 1/26/1996

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43 5

Comments:

RO TEST QUESTION #: **61**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.6.062.A2.09</u>	
Importance Rating	<u>2.7</u>	<u>3.0</u>

Proposed Question:

Current flow to ground is limited in a neutral grounding transformer by:

- A. the reflected impedance of the secondary into the primary.
- B. a series current limiting resistor.
- C. a protective overcurrent relay.
- D. a circuit breaker

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank	CPSES	Modifie
#	SYS.AC2.OB900	d
	<u>- 002</u>	
		New <u> </u>

Question History: Last NRC Exam

Cognitive Level:

 X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u>5</u>
55.43	<u>5</u>

Comments:

RO TEST QUESTION #: 62

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.7.073.A2.01</u>	
Importance Rating	<u>2.5</u>	<u>2.9</u>

Proposed Question:

WHICH ONE (I) of the following actions occur upon loss of power to the Containment Atmosphere Particulate Radioactivity Monitor?

- A. Containment purge isolation will occur DIRECTLY from the monitor.
- B. A loss of process sample flow occurs and causes a high radiation alarm due to detector integration.
- C. A loss of process sample flow occurs and blocks any actuation from the monitor.
- D. Phase "A" isolation will occur from fail safe relays in the RM-80.

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 4252 Modified
New

Question History: Last NRC Exam Harris 1 (WEC), 2/24/1997

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43 5

Comments:

RO TEST QUESTION #: **63**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.2.011.A2.04</u>	
Importance Rating	<u>3.5</u>	<u>3.7</u>

Proposed Question:

Unit 1 is in the following configuration: RCS pressure is 300 psig, Tavg is 300°F, and Train "A" RHR is in the shutdown cooling mode. At this point, pressurizer level starts decreasing rapidly with flow controller FK-121 fully open.

Select the correct action to be taken if pressurizer level continues to decrease.

- A. Unisolate the Safety Injection Accumulators.
- B. Reduce letdown flow - transfer to the 45 gpm orifice.
- C. Dispatch an operator to rack in the breakers to the non-operating CCP and one SIP.
- D. Reset containment isolation Phase A and B.

Proposed Answer: C

Explanation:

Technical Reference: ABN-108

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SYS.RC1.OB30 - 032	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u>X</u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u>5</u>
55.43	<u>5</u>

Comments:

RO TEST QUESTION #: 64

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>1</u>
K/A #	<u>3.5.026.A3.01</u>	
Importance Rating	<u>4.3</u>	<u>4.5</u>

Proposed Question:

A large break LOCA has occurred on Unit 1. Given the following conditions:

- Containment pressure is 22 psig
- Containment Spray failed to automatically initiate
- Manual pushbutton actuation for Containment Spray was also unsuccessful

Which ONE of the following describes the required operator actions following manual start of Containment Spray Pumps?

- A. Verify CS Heat Exchanger Outlet valves are OPEN; manually OPEN Chemical Additive Tank Discharge valves.
- B. Manually OPEN CS Heat Exchanger Outlet valves; manually OPEN Chemical Additive Tank Discharge valves.
- C. Manually OPEN CS Heat Exchanger Outlet valves; verify Chemical Additive Tank Discharge valves are OPEN.
- D. Verify CS Heat Exchanger Outlet valves are OPEN; verify Chemical Additive Tank Discharge valves are OPEN.

Proposed Answer: B

Explanation:

Technical Reference: SOP-204A, FRZ-0.1A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43 _____

Comments:

RO TEST QUESTION #: 65

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.4.055.A3.03</u>	
Importance Rating	<u>2.5</u>	<u>2.7</u>

Proposed Question:

Unit 1 is at 100% power with CEV 1-02 running, CEV 1-01 in standby, and CEV 1-03 off. While conducting a CEV lineup verification, you discover 1CV-0235 CNDSR VAC PMP 1-01 SUCT PRESS SW 2970A/2971A/2972A HP RT VLV closed, and the instrument air line between 1PS-2971A and 1CV-235 is disconnected. If Main Condenser vacuum decreases to 23" with this alignment, how will CEV operation be affected?

- A. CEV 1-02 will eventually trip.
- B. CEV 1-01 will start on low vacuum, and 1-HV-2956 will open.
- C. CEV 1-01 will NOT start on low vacuum, and 1-HV-2956 will NOT open.
- D. CEV 1-01 will start on low vacuum, but 1-HV-2956 will NOT open.

Proposed Answer: D

Explanation:

Technical Reference: M1-2211, SH 02

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SYS.CV1.OB106- 003	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u>X</u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u>7</u>
55.43	<u> </u>

Comments:

RO TEST QUESTION #: 66

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.8.029.A4.04</u>	
Importance Rating	<u>3.5</u>	<u>3.6</u>

Proposed Question:

While lifting a fuel assembly from the Reactor vessel lower core plate, audible Source Range indication inside Containment is lost and cannot be corrected. Which of the following actions are correct for this situation?

- A. Movement of the fuel assembly must cease immediately. Containment evacuation is required.
- B. Core alterations may continue as long as the criticality alarm is NOT alarming. Containment evacuation is NOT required.
- C. Movement of the fuel assembly shall continue to place it in a safe location. Containment evacuation is required.
- D. Core alteration may continue as long as Containment Integrity is met. Containment evacuation is NOT required.

Proposed Answer: C

Explanation:

Technical Reference: TS 3.9; RFO-102, RFO-302

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank #	CPSES RFO.SYE.OB404 002	Modified
		New

Question History: Last NRC Exam

Cognitive Level:

	Memory or Fundamental Knowledge
<u>X</u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u>7</u>
55.43	

Comments:

RO TEST QUESTION #: 67

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.7.012.G.2.2.22</u>	
Importance Rating	<u>3.4</u>	<u>4.1</u>

Proposed Question:

While in mode 4 with one Control Bank rod indicating at 9 steps, which of the following conditions requires entry into a Technical Specification LCO?

- A. One Source Range Nuclear Instrument is inoperable.
- B. Planned maintenance on a Coolant Charging Pump.
- C. Maintenance on a Power Range Nuclear Instrument.
- D. One channel of Pressurizer Pressure Instrument fails low.

Proposed Answer: A

Explanation:

Technical Reference: TS SECTION 3.3.1-1

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank

Modified
New X

Question History: Last NRC Exam _____

Cognitive Level:

 Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 2, 7, 10
55.43 2

Comments:

RO TEST QUESTION #: 68

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.7.016.K1.10</u>	
Importance Rating	<u>3.1</u>	<u>3.1</u>

Proposed Question:

Which of the following conditions would require entering a CPSES Technical Specification Limiting Condition for Operation action with the plant in hot standby?

- A. Opening the outer door to the Personnel Air Lock to enter Containment
- B. Containment pressure at 1.2 psig
- C. Containment air temperature 123°F
- D. One train of Electric Hydrogen Recombiners inoperable

Proposed Answer: C

Explanation:

Technical Reference: TS 3.6.5

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank #	CPSES SYS.CY1.OB900- 25	Modified
		New

Question History: Last NRC Exam

Cognitive Level:

X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content:

55.41 2, 9
55.43

Comments:

RO TEST QUESTION #: 69

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.2.006.K2.02</u>	
Importance Rating	<u>2.5</u>	<u>2.9</u>

Proposed Question:

Upon loss of all a/c power while operating in mode 1 at 100% power, how will the SIS Accumulator Isolation Valves respond?

- A. SIS Accumulator Isolation Valves are air operated and are not affected by loss of a/c.
- B. They will fail open.
- C. They will fail shut.
- D. They will remain in the same position they were in before the loss of a/c.

Proposed Answer: D

Explanation:

The SIS Accumulator Isolation Valves are motor operated and will not change positions on loss of their 480v power supply.

Technical Reference: Drawings M1-0262, M1-2262, E1-0005, E1-0009

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank
#

Modified
d

New X

Question History: Last NRC Exam _____

Cognitive Level:

 X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content:

55.41 3, 7
55.43 _____

Comments:

RO TEST QUESTION #: 70

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.4.035.K3.01</u>	
Importance Rating	<u>4.4</u>	<u>4.6</u>

Proposed Question:

Due to a malfunction with the S/G Blowdown Mixed Bed Demineralizer Outlet Radiation Valve, S/G Blowdown flow has isolated. What effect does this have on Reactor power if the unit is operating at 80% RTP?

- A. Reactor power increases approximately 5%.
- B. Reactor power decreases approximately 2%.
- C. Reactor power remains the same.
- D. Reactor power decreases initially, and slowly rises back to original value.

Proposed Answer: B

Explanation:

Technical Reference: DBD-ME-0239

Proposed references to be provided to applicants during examination:

Learning Objective: _____**Question Source:**

Bank	CPSES	Modified
#	<u>SYS.SB1.OB06-1</u>	<u> </u>
		New <u> </u>

Question History: Last NRC Exam

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u> X </u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u> 7 </u>
55.43	<u> </u>

Comments:

RO TEST QUESTION #: 71

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

2

2

K/A #

3.7.016.K3.08

Importance Rating

3.5

3.7

Proposed Question:

Unit 1 is operating at 100% power with all control systems in their normal alignment when the Pressurizer Pressure Instrument selected for control to the Pressurizer Master Pressure Controller fails high. Which of the below actions will occur? (assume no operator actions)

- A. PCV-455A will open and not re-close.
B. PCV-456 will open and not re-close.
C. PCV-456 will open and re-close at 2185 psig.
D. PCV-455A will open and re-close at 2185 psig.

Proposed Answer: D

Explanation:

Technical Reference: LO21.MCO.TA3.LP

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES
O.TA3.OB102
- 24

Modifie
d

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content:	55.41	7
	55.43	

Comments:

RO TEST QUESTION #: 72

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

2

2

K/A #

3.4.035.K4.06

Importance Rating

3.1

3.4

Proposed Question:

The _____ are designed to prevent overpressurization of the S/Gs.

- A. S/G Atmospheric
- B. Main Steam Safety Valves
- C. LP Turbine Atmospheric Relief Diaphragms
- D. MSR Relief Valves

Proposed Answer: B

Explanation:

Technical Reference: OP51.SYS.MR1

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie

SYS.MR1.OB03-1

d

New

Question History: Last NRC Exam

Cognitive Level:

<div style="border-bottom: 1px solid black; width: 80px; margin: auto;">X</div>	Memory or Fundamental Knowledge Comprehension or Analysis
---	--

10 CFR Part 55 Content:	55.41	7
	55.43	

Comments:

RO TEST QUESTION #: 73

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.8.029.K4.03</u>	
Importance Rating	<u>3.2</u>	<u>3.5</u>

Proposed Question:

With the Unit in Mode 5, which of the following automatic actions will occur when the Containment Purge Exhaust Monitor reaches a High-High alarm condition?

- A. A Containment Isolation Signal will be generated isolating all Phase-A flowpaths from the containment.
- B. Containment Purge Supply and Exhaust Fans will trip, and the Purge Supply and Exhaust Dampers will close.
- C. The Supplemental Leak Collection and Release System (SLCRS) will be aligned to bypass the Main Filter Bank and provide an elevated release flowpath.
- D. The Containment Purge Exhaust will be aligned to the SLCRS and then filtered through the Main Filter Banks.

Proposed Answer: B

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination: _____

Learning Objective: _____

Question Source: Bank # INPO 588 Modified
New

Question History: Last NRC Exam Beaver Valley 2 (WEC), 3/17/1997

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43

Comments:

RO TEST QUESTION #: **74**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.7.073.K4.01</u>	
Importance Rating	<u>4.0</u>	<u>4.3</u>

Proposed Question:

If the S/G Blowdown Mixed Bed Demineralizer Outlet Radiation Monitor was to lose power, what effect would this have on the S/G Blowdown System?

- A. The Control Room would not receive warning of S/G Blowdown Demineralizer resin exhaustion.
- B. The radiation valve would close and all S/G Blowdown flow stops.
- C. The radiation valve will be unable to perform its intended function.
- D. The Control Room would receive a S/G Blowdown Panel trouble alarm and the system will continue to operate.

Proposed Answer: B

Explanation:

Technical Reference: E1-0040, Sh 97, ALM-3200 att 3

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank # CPSES Modified
SYS.SB1.OB09-2
 New _____

Question History: Last NRC Exam _____

Cognitive Level:

X Memory or Fundamental Knowledge
 _____ Comprehension or Analysis

10 CFR Part 55 Content:

55.41 7
55.43 4

Comments:

RO TEST QUESTION #: 75

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.8.086.K4.01</u>	
Importance Rating	<u>3.1</u>	<u>3.7</u>

Proposed Question:

A fire has been reported in the Aux. Building. The Fire Brigade has responded and is using the Fire Protection Hose Stations to fight the fire. Which ONE of the following describes the response of the fire pumps to decreasing fire header pressure?

- A. The diesel driven pumps start at 142 psig and the electric fire pump starts if pressure is not raised above 120 psig in 10 seconds.
- B. One diesel driven fire pump starts at 148 psig and the electric fire pump starts at 120 psig.
- C. The electric fire pump starts at 142 psig and one diesel driven fire pump starts in 10 seconds if pressure is not above 140 psig.
- D. The electric fire pump starts at 142 psig; one diesel driven fire pump starts at 120 psig; the other diesel driven fire pump starts in 10 seconds if pressure is not raised above 120 psig.

Proposed Answer: C

Explanation:

Technical Reference: SOP-904

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
SYS.FP1.OB106-
001

Modified

New

Question History:

Last NRC Exam

Cognitive Level:X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content:**55.41**7**55.43****Comments:**

RO TEST QUESTION #: 76

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.4.035.K4.05</u>	
Importance Rating	<u>2.9</u>	<u>3.2</u>

Proposed Question:

The following conditions are observed on Unit 2 at the moment of a reactor trip:

Reactor Power = 29 %

S/G NR Level = 27 %

One Reactor Coolant Pump has just tripped off

Which of the following statements are the likely to be true regarding the reactor trip?

- A. The reactor tripped on S/G Water Level Low-Low to prevent a loss of heat sink.
- B. The reactor tripped on S/G Water Level Low-Low to prevent a loss of level indication.
- C. The reactor tripped on P-8 interlock to ensure adequate margins to DNB are maintained.
- D. The reactor tripped on P-8 interlock to prevent exceeding peak fuel centerline temperature limits.

Proposed Answer: A

Explanation:

Power is below the P-8 Low Flow trip block of 39%, and the purpose of SG Low-Low Level trip is to prevent loss of heat sink, not loss of level indication.

Technical Reference: TS TABLE 3.3.1-1

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 4, 6, 8
55.43 _____

Comments:

RO TEST QUESTION #: **77**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.8.086.K4.03</u>	
Importance Rating	<u>3.1</u>	<u>3.7</u>

Proposed Question:

The Unit 2 Safeguards PEO has reported that the 2-02 Diesel Generator Starting Air Compressor is extremely warm. If a fire were to occur on this component a local.....

- A. ionization smoke detector would detect the fire and initiate the deluge system.
- B. thermal detector would detect the fire and provide alarms.
- C. thermal detector would detect the fire and initiate the deluge system.
- D. ionization smoke detector would detect the fire and provide alarms.

Proposed Answer: D

Explanation:

Technical Reference: ABN-901 att1 & 5

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank #	CPSES SYS.FP1.OB303 - 001	Modified
		New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content: 55.41 7
55.43

Comments:

RO TEST QUESTION #: 78

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>3.8.008.A2.04</u>	
Importance Rating	<u>3.3</u>	<u>3.5</u>

Proposed Question:

Unit 4 is operating at 100% power in normal alignment when the following events occur:

- A rupture develops in a RCP thermal barrier.
- ONE of the CCW PRMS monitors has just gone into alarm.
- CCW head tank level indicates 81%.
- CCW surge tank level reads 100%.
- CCW flow from RCP thermal barriers has increased to 110 gpm.

Which one of the following describes current condition of the CCW head tank vent valve, and RCP thermal barrier outlet?

- A. CCW head tank vent is open. RCP thermal barrier outlet is closed.
- B. CCW head tank vent is open. RCP thermal barrier outlet is open.
- C. CCW head tank vent is closed. RCP thermal barrier outlet is closed.
- D. CCW head tank vent is closed. RCP thermal barrier outlet is open.

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 5100 Modified
New

Question History: Last NRC Exam Turkey Point 4 (WEC), 8/7/1998

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43 5

Comments:

RO TEST QUESTION #: **80**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>3.4.045.K1.06</u>	
Importance Rating	<u>2.6</u>	<u>2.6</u>

Proposed Question:

When testing Main Steam Isolation Valve #1 (MSIV-1) from the control room, which of the following conditions will actuate the "MSIV #1 TEST FAILED" alarm?

- A. MSIV-1 fails to reach 90% open in 10 seconds or less.
- B. MSIV-1 fails to reach 90% open in 20 seconds or less.
- C. MSIV-1 closes 10% and fails to return to full open.
- D. MSIV-1 closes more than 10% during the test.

Proposed Answer: B

Explanation:

Technical Reference: OP51.SYS.MR1.OB20

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank CPSES Modified
SYS.MR1.OB20-1
New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 2,9
55.43

Comments:

RO TEST QUESTION #: **81**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>3.4.076.K1.07</u>	
Importance Rating	<u>2.5</u>	<u>2.3</u>

Proposed Question:

The service water pump bearings are cooled and lubricated with water supplied from the:

- A. discharge of service water pumps.
- B. discharge of screen wash pumps.
- C. demineralized water pumps.
- D. circulating water pumps.

Proposed Answer: A

Explanation:

Technical Reference: OP51.SYS.SW1.LN; M1-0233

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank #	CPSES SYS.SW1.OB02- 6	Modified
		New

Question History: Last NRC Exam

Cognitive Level:

X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content:

55.41 2,9
55.43

Comments:

RO TEST QUESTION #: 82

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

3

3

K/A #

3.4.076.K2.01

Importance Rating

2.7

2.7

Proposed Question:

Which of the following components is powered from the safeguards 6.9 KV buses?

- A. CW pumps
- B. RCPs
- C. HDPs
- D. SSW pumps

Proposed Answer: D

Explanation:

Technical Reference: E1-0003, E1-0004

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES
SYS.AC2.OB03 -
004

Modified

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content:	55.41	7
	55.43	

Comments:

RO TEST QUESTION #: 83

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>3.4.045.K4.47</u>	
Importance Rating	<u>4.0</u>	<u>4.3</u>

Proposed Question:

A reactor trip generates a turbine trip by:

- A. deenergizing the remote trip solenoids in the EHC system.
- B. deenergizing the main trip valve in the EHC system.
- C. energizing the remote trip solenoids in the EHC system.
- D. energizing the main trip valve in the EHC system.

Proposed Answer: C

Explanation:

Technical Reference: CP-0003-26,sect 12

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
SYS.MT1.OB27 -
001

Modified

New

Question History: Last NRC Exam _____

Cognitive Level:

 X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content:

55.41 7
55.43

Comments:

RO TEST QUESTION #: **84**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>3.5.007.K4.01</u>	
Importance Rating	<u>2.6</u>	<u>2.9</u>

Proposed Question:

What is a disadvantage of using the RCDT method to cool the water in the PRT?

- A. May take up to 24 hours to cool down the PRT.
- B. Requires a TS LCO entry.
- C. May take up to 8 hours to cool down the PRT.
- D. Maximum flow through LCV-1003 is limited by the heat exchanger.

Proposed Answer: C

Explanation:

Technical Reference: SOP-110A, Section 5.4

Proposed references to be provided to applicants during examination:

Learning Objective: _____**Question Source:**

Bank #	CPSES SYS.RC1.OB15 - 003	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content:

55.41 7
55.43 _____

Comments:

RO TEST QUESTION #: 85

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>3</u>	<u>2</u>
K/A #	<u>3.5.028.K5.02</u>	
Importance Rating	<u>3.4</u>	<u>3.9</u>

Proposed Question:

The following conditions exist:

- The plant was operating at 100% power, when a Large Break LOCA to Containment occurred
- Containment Hydrogen is 1%
- Water level in the Reactor Core is 50% (half the fuel is exposed)

Which ONE of the following will make hydrogen conditions in containment worse?

- A. Water level in the reactor core increasing from 50% to 90% level
- B. Instrument air leak to containment
- C. Excessive leakage from containment thru the Containment Vacuum Breakers
- D. Exit Thermocouples at 1800 degrees F and rising

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 10850 Modified
New

Question History: Last NRC Exam Kewaunee 1 (WEC), 12/18/1997

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43

Comments:

RO TEST QUESTION #: **86**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>3</u>	<u>2</u>
K/A #	<u>3.5.028.K6.01</u>	
Importance Rating	<u>2.6</u>	<u>3.1</u>

Proposed Question:

The temperature of the air mixture in the containment hydrogen recombiners is controlled by:

- A. cycling the recombiner electric heaters on and off to maintain temperature in the proper band.
- B. regulating the air flow at the discharge of the recombiner used to preheat the inlet flow.
- C. varying the power to the recombiner electric heaters.
- D. regulating the air flow at the inlet of the recombiner.

Proposed Answer: C

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 5355 Modified
New

Question History: Last NRC Exam Salem 1 (WEC), 1/22/1996

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43

Comments:

RO TEST QUESTION #: 87

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>2.1.16</u>	
Importance Rating	<u>2.9</u>	<u>2.8</u>

Proposed Question:

Select the statement that describes why portable radios should not be used in "Radio Free Zones."

- A. Radio transmission interferes with security radios in the event of a security plan implementation.
- B. Radio frequencies may inadvertently interfere with CENTREX equipment.
- C. Radios are useless in these areas due to signal reception difficulties.
- D. Radios produce electromagnetic interference (EMI) that may cause inadvertent equipment operation.

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 5417 Modified
New

Question History: Last NRC Exam Salem 1 (WEC), 1/22/1996

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 10
55.43

Comments:

RO TEST QUESTION #: **88**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>2.1.18</u>	
Importance Rating	<u>2.9</u>	<u>3.0</u>

Proposed Question:

The NRC must be notified in writing within 30 days if a licensed operator is convicted of a felony. Which of the following is responsible for notifying the NRC of the conviction?

- A. The licensed individual.
- B. The Manager, Operations.
- C. The Plant Manager.
- D. Vice President, Nuclear Operations.

Proposed Answer: A

Explanation:

Technical Reference: STA-501

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES

Modified

ADM.XA7.OB01-2

New

Question History:

Last NRC Exam

Cognitive Level: X

Memory or Fundamental Knowledge

 Comprehension or Analysis**10 CFR Part 55 Content:****55.41** 10 **55.43****Comments:**

RO TEST QUESTION #: **89**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>2.1.24</u>	
Importance Rating	<u>2.8</u>	<u>3.1</u>

Proposed Question:

Given drawing E1-0057 Sheet 16, determine which of the following signals will generate an open signal to Fan 9 Isolation Damper 1-HV-5953.

- A. Energizing the 42 relay.
- B. Energizing the 1-HX-5952 relay.
- C. Energizing the 1-42AX/5952 relay.
- D. Energizing the 74 relay.

Proposed Answer: B

Explanation:

Technical Reference: E1-0057 sheet 16

Proposed references to be provided to applicants during examination:

E1-0057 sheet 16

Learning Objective: _____**Question Source:**

Bank #

CPSES
SYS.HV2.OB07-1

Modified

New

Question History: Last NRC Exam _____

Cognitive Level:

 Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 7
55.43 _____

Comments:

RO TEST QUESTION #: 90

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>2.2.3</u>	
Importance Rating	<u>3.1</u>	<u>3.3</u>

Proposed Question:

Identify the unit difference of the Process Sampling System.

- A. Unit 1 sample coolers are supplied by Train A CCW while Unit 2 sample coolers are supplied by Train B CCW.
- B. Unit 2 sampling valves all fail open.
- C. Unit 1 sample hood purge flow is directed to FDT #3.
- D. Spent Fuel Pool demineralizers sample is taken on Unit 1 side.

Proposed Answer: D

Explanation:

Technical Reference: OP51.SYS.PA2.OB21

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank	CPSES	Modified
#	<u>SYS.PA2.OB21-1</u>	<u> </u>
		New <u> </u>

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43 7

Comments:

RO TEST QUESTION #: **91**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>2.2.22</u>	
Importance Rating	<u>3.4</u>	<u>4.1</u>

Proposed Question:

During a post trip review, it was noted that the reactor had tripped in response to a high Pressurizer pressure signal at 2360 psig. Which of the following statements is correct? (Assume only the High Pressure setpoint was affected)

- A. The channel must be declared inoperable and related bistables tripped within six hours.
- B. Mode 2 must not be re-entered until the setpoint is adjusted to the proper pressure.
- C. The setpoint does not meet the LCO, but no power restrictions are in effect while the setpoint is being adjusted.
- D. The setpoint meets the LCO requirements and should not affect the status of ability to operate at power.

Proposed Answer: D

Explanation:

Technical Reference: TS 3.3.1

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
SYS.RC1.OB30 -
040

Modified

New

Question History:

Last NRC Exam

Cognitive Level:

 Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 7
55.43 2

Comments:

RO TEST QUESTION #: 92

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>2.2.23</u>	
Importance Rating	<u>2.6</u>	<u>3.8</u>

Proposed Question:

A LCOAR which applies to the present plant MODE or plant conditions and requires certain restrictions while the plant is in a degraded condition is called:

- A. a Tracking LCOAR.
- B. an Active LCOAR.
- C. a Degraded Condition LCOAR.
- D. an Outage LCOAR.

Proposed Answer: B

Explanation:

Technical Reference: ODA-308, 4.2 and 4.11

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES

Modified

ADM.XA5.OB12 -
003

New

Question History: Last NRC Exam

Cognitive Level:X

Memory or Fundamental Knowledge

 Comprehension or Analysis

10 CFR Part 55 Content:**55.41**10**55.43**2**Comments:**

RO TEST QUESTION #: 93

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>2.2.11</u>	
Importance Rating	<u>2.5</u>	<u>3.4</u>

Proposed Question:

WHICH ONE (1) of the following activities is considered a temporary modification?

- A. Sample tubing connected to a sample port.
 - B. Installing a pressure gauge on an instrument tap.
 - C. A hose connected to a drain valve to route drainage to a floor drain.
 - D. Installation of a portable space heater to maintain operability of a safety related valve.
- Sample tubing connected to a sample port.

Proposed Answer: D

Explanation:

Technical Reference: STA-602

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 5496 Modified
New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 10
55.43 3

Comments:

RO TEST QUESTION #: **94**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>2.3.2</u>	
Importance Rating	<u>2.5</u>	<u>2.9</u>

Proposed Question:

An uncontrolled radiation release is in progress, which is projected to result in offsite, thyroid dose equivalents significantly in excess of the 10 CFR 100 limits. Manual action is required in order to isolate the release path. Various combinations of personnel could accomplish the task, but only 20 qualified individuals are available to perform the actions in a timely manner.

From the following list, select the number of individuals performing the task that meets both the Protective Action Guides for emergency workers and the ALARA guidelines.

- A. Four individuals each receive a dose equivalent of 30 rems.
- B. Ten individuals each receive a dose equivalent of 15 rems.
- C. Twenty individuals each receive a dose equivalent of 10 rems.
- D. Five individuals each receive a dose equivalent of 20 rems..

Proposed Answer: D

Explanation:

Technical Reference: EPP-305, STA-651

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES

Modified

MCO.MIB.OB101

 - 001 New **Question History:**Last NRC Exam **Cognitive Level:** Memory or Fundamental Knowledge X

Comprehension or Analysis

10 CFR Part 55 Content:**55.41** 12 **55.43** 4 **Comments:**

RO TEST QUESTION #: 95

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>2.3.4</u>	
Importance Rating	<u>2.5</u>	<u>3.1</u>

Proposed Question:

A nineteen (19) year old new employee received 360 mrem during the current quarter (2250 mRem for the calendar year) at the Monticello Nuclear Generating Station before being hired here. Which one of the following is the MAXIMUM additional exposure the new employee may receive throughout the remainder of the calendar year with an ADMINISTRATIVE annual dose level extension?

- A. No additional exposure is permitted.
- B. 1750 mRem.
- C. 1390 mRem.
- D. 2000 mRem.

Proposed Answer: B

Explanation:**Technical Reference:** _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 2834 Modified
New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: 55.41 12
55.43 4

Comments:

RO TEST QUESTION #: 96

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>4</u>	<u>4</u>
K/A #	<u>2.4.39</u>	
Importance Rating	<u>3.3</u>	<u>3.1</u>

Proposed Question:

You are a licensed Reactor Operator on dayshift, working on outage tagouts in the Work Control Center. You do not have assigned responsibilities in the Emergency Response Organization (ERO). A transient occurs that results in the declaration of an ALERT Emergency and activation of the Evacuation Alarm. To which of the following locations do you report?

- A. The Technical Support Center (TSC).
- B. The Emergency Operations Facility (EOF).
- C. The Control Room.
- D. The Operations Support Center (OSC).

Proposed Answer: C

Explanation:

Technical Reference: CPSES/EP

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 10
55.43 5

Comments:

RO TEST QUESTION #: 97

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>4</u>	<u>4</u>
K/A #	<u>2.4.46</u>	
Importance Rating	<u>3.5</u>	<u>3.6</u>

Proposed Question:

The plant is in an emergency condition, and you have completed the immediate action steps of EOP-0.0A, "Reactor Trip or Safety Injection". MSIV 1, 3 and 4 Hydraulic Trouble N₂ low pressure and MSIV NOT OPEN alarm windows have just illuminated. It is noted that S/G #2 pressure is approximately 600 psig, and that both the pressure and level in S/G #2 are rapidly decreasing. Pressures in the other S/Gs are approximately 740 psig and are decreasing very slowly. Levels in the other S/Gs are constant.

In response to these S/G conditions, which of the following should you perform?

- A. Increase AFW flow to S/G #2 to stabilize level.
- B. Check secondary radiation levels to determine if a SGTR is indicated.
- C. Open S/Gs #1, #3 and #4 atmospheric relief valves to reduce RCS temperature.
- D. Check that the MSIVs and bypass valves are closed.

Proposed Answer: D

Explanation:

Technical Reference: EOP-0.0A/B

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
EO2.XG4.OB407
- 002

Modified

New

Question History:

Last NRC Exam

Cognitive Level:

 Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 10
55.43 5

Comments:

RO TEST QUESTION #: **98**

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

3

3

Group #

4

4

K/A #

2.4.47

Importance Rating

3.4

3.7

Proposed Question:

Given the following conditions:

- The crew is performing a reactor startup.
- The RO has just pulled the control rods several steps and is waiting for source range counts to stabilize.

Assuming the reactor is very close, but not yet critical, source range counts should:

- A. stop increasing and stabilize immediately, with SUR dropping to zero.
- B. begin to slowly decrease, with SUR gradually decreasing to zero.
- C. continue to increase, but at a slower rate, with SUR stabilizing at a lower positive value.
- D. continue to increase for a short period of time, then plateau, with SUR decreasing to zero.

Proposed Answer: D

Explanation:

Technical Reference: IPO-002, SECTION 5.2

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie

SYS.EC1.OB13-3

d

New

Question History: Last NRC Exam

Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content:

55.41

10

55.43

5

Comments:

RO TEST QUESTION #: 99

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>4</u>	<u>4</u>
K/A #	<u>2.4.25</u>	
Importance Rating	<u>2.9</u>	<u>3.4</u>

Proposed Question:

The following unit conditions exist:

- MODE 1: 100% equilibrium power
- All systems in automatic
- Shift staffing normal
- A fire has occurred in one of the control room panels

The Shift Manager has made and announced the decision to evacuate the control room. Which of the following actions is to be performed prior to exiting the control room in accordance with ABN-803A "Response to a Fire in the Control Room or Cable Spreading Room"?

- A. Take the turbine-driven AFW pump Trip Throttle Valve control switch to TRIP.
- B. Place the feeder breakers for 1EA2 to Pull-Out.
- C. Place the VCT inlet valve controller for LCV-112A to DIVERT/HUT.
- D. Take the pressurizer spray valves controllers to CLOSE.

Proposed Answer: A

Explanation:

Technical Reference: ABN-803A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
SYS.FP1.OB401 -
 006

Modified

New

Question History:

Last NRC Exam

Cognitive Level:

 X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content:

55.41 10
55.43 5

Comments:

RO TEST QUESTION #: **100**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.1.074.EA1.24</u>	
Importance Rating	<u>3.6</u>	<u>3.8</u>

Proposed Question:

The plant is responding to an inadequate core cooling condition with core exit thermocouples greater than 1200°F. From the choices below, select the choice that lists the best recovery technique in the correct priority for this condition.

- A. Start ECCS, depressurize secondary, start RCP, depressurize RCS.
- B. Start RCP, depressurize RCS, depressurize secondary, start ECCS.
- C. Trip RCPs, trip turbine, depressurize secondary, isolate accumulators.
- D. Start ECCS, depressurize RCS, trip RCPs, depressurize secondary.

Proposed Answer: A

Explanation:

Technical Reference: FRC-0.1A

Proposed references to be provided to applicants during examination:

Learning Objective: _____**Question Source:**

Bank #

CPSES
MCO.MI3.OB105-
005

Modified

New **Question History:**

Last NRC Exam _____

Cognitive Level:

 Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content:**55.41** 7 **55.43** _____**Comments:**

RO/SRO TEST QUESTION #: 1

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.1.038.EA1.37</u>	
Importance Rating	<u>3.5</u>	<u>3.4</u>

Proposed Question:

An operator could cause a Steam Generator Tube Rupture to become a Pressurized Thermal Shock concern by:

- A. not terminating the required cooldown in a timely manner.
- B. isolating the ruptured steam generator too soon.
- C. terminating safety injection before the criteria is met.
- D. not depressurizing the RCS before the initial cooldown.

Proposed Answer: A

Explanation:

Technical Reference: EOP-3.0A

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank #

CPSES

Modified

SK2.XG4.OB103 -
001

New

Question History:

Last NRC Exam

Cognitive Level:

 X

Memory or Fundamental Knowledge

 Comprehension or Analysis

10 CFR Part 55 Content:

55.41

 7

55.43

 2, 5

Comments:

(originally #101)

SRO (ONLY) TEST QUESTION #: 2

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

1

1

K/A #

4.2.005.AA1.05

Importance Rating

3.4

3.4

Proposed Question:

During a Reactor startup with Control Bank D at 20 steps and the Reactor subcritical, the DRPI ROD DEV annunciator is received. The Reactor Operator observes that Control Bank B rod F2 indicates 210 steps while Control Bank B Group 1 step counter indicates 228 steps. No other alarms are received and all other parameters indicate normal. This event would require the crew to:

- A. Consider the rod misaligned and within one hour insert all Control Banks to Control Bank Offset (CBO).
- B. Consider the rod misaligned and continue rod withdrawal to reach Critical conditions then realign the rod.
- C. Consider the rod misaligned and compare DRPI and Step Counter positions at least once per 12 hours.
- D. Consider the rod misaligned and implement the requirements of Technical Specifications 3.0.3.

Proposed Answer: A

Explanation:

Technical Reference: ABN-712

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES

Modified

SYS.CR1.OB15- 4

New

Question History: Last NRC Exam

Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7

55.43

Comments:**RO/SRO TEST QUESTION #: 3**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.067.AA1.05</u>	
Importance Rating	<u>3.0</u>	<u>3.1</u>

Proposed Question:

The Control Room Ventilation System has been aligned for Control Room Recirculation due to a large fire in a field adjacent the plant. The Unit Supervisor checks the logs and realizes that the ventilation system has been in recirc for approximately 24 hours. Which of the following statements describes the situation in the Control Room?

- A. The humidity in the Control Room has dropped dangerously low due to too much time operating on recirc.
- B. The carbon monoxide level in the Control Room is increasing due to too much time operating on recirc.
- C. The air quality in the Control Room has been polluted by contaminants from the fire due to too much time operating on recirc.
- D. The carbon dioxide level in the Control room is increasing due to too much time operating on recirc.

Proposed Answer: D

Explanation:

Technical Reference: SOP-802 "Control Room Ventilation System"

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43 _____

Comments:

RO/SRO TEST QUESTION #: 4

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.068.AA1.14</u>	
Importance Rating	<u>4.2</u>	<u>4.4</u>

Proposed Question:

A fire in the control room with heavy smoke requires immediate evacuation of the control room. Unit 1 was at 95% power at the time the evacuation procedure was initiated. The Unit 1 Reactor Operator was only able to trip the turbine prior to exiting the control room. Assuming that the plant responds as expected, which ONE of the following local actions needs to be taken to complete the RO's initial evacuation assignments?

- A. Open the Reactor Trip Breakers.
- B. Isolate the Main Steam lines.
- C. Remove pressurizer PORV fuses.
- D. Isolate dilution paths and S/G Process Sampling.

Proposed Answer: B

Explanation:

Technical Reference: ABN-803A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 2703 Modified X
New _____

Question History: Last NRC Exam Prairie Island 1(WEC), 6/16/1997

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7, 8, 10
55.43 5

Comments:

Modifications: clarified stem, and adapted distracters to CPSES, and replaced one distracter.

RO/SRO TEST QUESTION #: 5

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.068.AA2.10</u>	
Importance Rating	<u>4.2</u>	<u>4.4</u>

Proposed Question:

A bomb threat has forced a control room evacuation. Prior to the bomb threat, the plant was operating steady at 100%. The relevant control room actions directed by ABN-905A "Loss of Control Room Habitability" were completed and plant operations have been transferred to the Remote Shutdown Panel (RSP). When the Reactor Operator arrives at the RSP, he should expect to see the following indications:

- A. Neutron flux decreasing steadily and rod bottom lights on.
- B. Neutron flux and rods at approximately the level they were when he left the control room.
- C. Neutron flux decreasing steadily and the reactor trip breakers are open.
- D. Neutron flux at approximately the level it was before he left the control room and reactor trip breakers closed.

Proposed Answer: C

Explanation:

ABN-905A directs a reactor trip prior to leaving the control room, and rod bottom lights are not indicated at the RSP. The RO can observe both neutron flux decreasing, and reactor trip breakers open from the RSP.

Technical Reference: ABN-905A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: _____ **Bank #** _____ **Modified** _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 1, 6, 10
55.43 _____

Comments:

RO/SRO TEST QUESTION #: 6

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

1

1

K/A #

4.2.076.AA2.03

Importance Rating

2.5

3.0

Proposed Question:

Unit 1 was at 35% power during a plant shutdown when a 20% load rejection occurred. The plant has been stabilized, and the shutdown is continuing. The daily RCS chemistry sample has been analyzed and the RCS specific activity determined to be 0.1 uc/gm Dose Equivalent I-131. The previous sample had a specific activity of 0.01 uc/gm Dose Equivalent I-131. Which one of the below statements identifies the required response?

- A. Be in mode 3 condition with Tave less than 500 degrees F within 6 hours.
- B. Initiate a Safety Injection and enter EOP-0.0A.
- C. Obtain and analyze a plant vent grab sample.
- D. Continue with plant operations as planned, there is no required response to the stated conditions.

Proposed Answer: C

Explanation:

Technical Reference: IPO-004A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES

Modified

IPO.XO4.OB900

- 002

X

New

Question History: Last NRC Exam

Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content:

55.41

10

55.43

5

Comments:

Modifications: altered two distractors.

RO/SRO TEST QUESTION #: 7

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.076.AA2.04</u>	
Importance Rating	<u>2.6</u>	<u>3.0</u>

Proposed Question:

The Liquid Waste Processing Effluent Radiation Monitor High Radiation alarm has been received. Which of the following is the correct action for the operator to take initially?

- A. Ensure X-RV-5251 is closed or close its upstream isolation valve.
- B. Reopen X-RV-5251 and ensure correct pump is running.
- C. Reopen X-RV-5253 and ensure correct pump is running.
- D. Ensure X-RV-5253 is closed or close its upstream isolation valve.

Proposed Answer: D

Explanation:

Technical Reference: ALM-301, ABN-903

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES
SYS.WP1.OB12 -
003

Modified

New

Question History:

Last NRC Exam

Cognitive Level:

 Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 10
55.43 5

Comments:

RO/SRO TEST QUESTION #: 8

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.027.G.2.4.2</u>	
Importance Rating	<u>3.9</u>	<u>4.1</u>

Proposed Question:

The following SEQUENTIAL events have just occurred:

- charging flow decreased to minimum,
- pressurized level decreased,
- letdown isolated and heaters turned off,
- pressurized level increased to high level reactor trip.

Pressurizer level control selector switch is in the LT-459 position and pressure control is on PT-455. No operator actions have been taken. Which failure has occurred?

- A. Pressure Channel 455 failed high.
- B. Pressure Channel 455 failed low.
- C. Level channel 459 failed high.
- D. Level channel 459 failed low.

Proposed Answer: C

Explanation:

Technical Reference: LO21.RLS.IC3.LN

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
MCO.TA3.OB103
- 002

Modified

X
New

Question History:

Last NRC Exam _____

Cognitive Level:

 Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 7
55.43 _____

Comments:

Modifications: altered two of the distracters.

RO/SRO TEST QUESTION #: 9

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.1.055.EK1.02</u>	
Importance Rating	<u>4.1</u>	<u>4.4</u>

Proposed Question:

Unit 1 has just experienced a station blackout and a subsequent reactor trip. According to EOS-0.1A "Reactor Trip Response," all of the following are indications of natural circulation flow EXCEPT:

- A. Steam generator pressures are stable or decreasing
- B. Pressurizer pressure is stable or decreasing
- C. Core exit thermocouple temperatures are stable or decreasing
- D. RCS cold leg temperatures at saturation temperature for S/G pressure

Proposed Answer: B

Explanation:

Technical Reference: EOS-0.1A Attachment 3

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 10526 Modified X
New _____

Question History: Last NRC Exam Indian Point 3 (WEC), 4/15/1996

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 8, 10
55.43 _____

Comments:

Modifications: adapted to CPSES terminology, and replaced one distracter.

RO/SRO TEST QUESTION #: 10

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.067.AK1.01</u>	
Importance Rating	<u>2.9</u>	<u>3.9</u>

Proposed Question:

While you are on shift on Saturday night, an equipment operator calls the control room and informs you that he has found a fire smoldering in an electrical panel. If available, the preferred method for fighting this type of fire is:

- A. halon.
- B. foam.
- C. water fog/spray.
- D. dry powder extinguisher.

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 5378 Modified
New

Question History: Last NRC Exam Salem 1(WEC), 1/22/1996

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 8, 10
55.43

Comments:

RO/SRO TEST QUESTION #: 11

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.069.AK1.01</u>	
Importance Rating	<u>2.6</u>	<u>3.1</u>

Proposed Question:

The following plant conditions exist:

- o Procedure in effect EOP-1.0B.
- o Containment pressure 65 psig and increasing.

You transition to FRZ-0.1B, "Response to High Containment Pressure" and upon completion of all steps in FRZ-0.1B, you determine that containment pressure is now 61 psig. At this point, you are required to:

- A. reinitiate and remain in FRZ-0.1B until the condition is no longer an ORANGE priority.
- B. exit FRZ-0.1B and enter EOS-0.0B.
- C. reinitiate and remain in FRZ-0.1B until the condition is no longer a RED priority.
- D. exit FRZ-0.1B and return to EOP-1.0B at the step in effect.

Proposed Answer: D

Explanation:

Technical Reference: FRZ-0.1B, and ODA-407 "Guideline on Use of Procedures"

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 8, 10
55.43 5

Comments:

RO/SRO TEST QUESTION #: 12

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.5.E09.EK1.02</u>	
Importance Rating	<u>3.3</u>	<u>3.7</u>

Proposed Question:

Which of the below most correctly completes the following statement regarding natural circulation?

"Natural Circulation flowrate will be greater if...

- A. ONE reactor coolant pump runs for an hour after the reactor trip, then stops."
- B. ALL reactor coolant pumps run until the plant is in mode 4, then stop."
- C. ALL reactor coolant pumps stop at the same time the reactor trips."
- D. ALL reactor coolant pumps run for an hour after the reactor trip, then stop."

Proposed Answer: C

Explanation:**Technical Reference:** _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____**Question Source:**

Bank #

CPSES

Modified

SJ2.XG7.OB104 -
002

X

New

Question History:

Last NRC Exam

Cognitive Level:X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content:**55.41** 8, 10**55.43** _____**Comments:**

Modifications: several distracters altered.

RO/SRO TEST QUESTION #: 13

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.068.AK2.03</u>	
Importance Rating	<u>2.9</u>	<u>3.1</u>

Proposed Question:

Unit 2 is currently in mode 4, but a transition into mode 3 is planned for later today. During conduct of the "Pressurizer Pressure Control Remote Shutdown Operability Test," it is discovered that the PRZR HTR BACKUP GROUP A CTRL XFER (STP) switch fails to properly transfer control of the heaters to the HSP. Regarding the planned transition to mode 3,

- A. Technical Specifications require that the plant remain in mode 4 until the transfer switch is restored to operability.
- B. Technical Specifications allow the plant to proceed into mode 3 while repairs are made to the transfer switch.
- C. Technical Specifications do not address this transfer switch, so the mode change is unaffected by its failure.
- D. Technical Specifications require that the plant be placed in mode 5 until the transfer switch is restored to operability.

Proposed Answer: B

Explanation:

TS allows mode increase while in LCO related to Remote Shutdown Transfer switches.

Technical Reference: OPT-216A "Remote Shutdown Operability Test", TS 3.3.4

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** _____
55.43 2

Comments:

SRO (ONLY) TEST QUESTION #: 14

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.2.051.AK3.01</u>	
Importance Rating	<u>2.8</u>	<u>3.1</u>

Proposed Question:

Given the following Unit 1 plant conditions:

- o Unit was initially at 100% power and has been manually tripped.
- o Tave is 542F on all channels.
- o "A" Condenser vacuum is 14" vacuum
- o "B" Condenser vacuum is 18" vacuum
- o two Circ water pumps are running

Which ONE of the following describes steam dump availability?

- A. Only the atmospheric dumps are available.
- B. Steam dump is NOT available.
- C. Only the condenser dump is available.
- D. Both atmospheric and condenser dumps are available

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 2694 Modified
New

Question History: Last NRC Exam Prairie Island 1 (WEC) 6/16/1997

Cognitive Level: Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5, 10
55.43

Comments:

RO/SRO TEST QUESTION #: 15

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>4.5.E07.EK3.01</u>	
Importance Rating	<u>3.1</u>	<u>3.7</u>

Proposed Question:

Given the following:

- The RCS has had a stuck open Pressurizer safety valve.
- The reactor tripped and safety injection initiated.
- The RCS rapidly depressurized to saturation conditions.
- Pressurizer level initially dropped and then began to rise rapidly.

Which one of the following characterizes the relationship between pressurizer level and RCS inventory under these conditions?

- A. Level is an accurate indication of inventory, because voiding would occur first in the pressurizer due to the high temperature of the pressurizer walls.
- B. Level is an accurate indication of inventory, because hydraulic pressure would force any voids to the pressurizer steam space and out the safety valve.
- C. Level is NOT an accurate indication of inventory, because RCS voiding may result in a rapidly increasing pressurizer level.
- D. Level is NOT an accurate indication of inventory, because at higher temperatures the cold calibrated pressurizer level channels falsely indicate high.

Proposed Answer: C**Explanation:****Technical Reference:** EOS-1.2A, step 14 caution**Proposed references to be provided to applicants during examination:****Learning Objective:** _____

Question Source: Bank # CPSES Modified
EO1.XG3.OB900 -4
 New _____

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5, 10
55.43 _____

Comments:**RO/SRO TEST QUESTION #: 16**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>1</u>
K/A #	<u>4.5.E02.EA2.01</u>	
Importance Rating	<u>3.3</u>	<u>4.2</u>

Proposed Question:

Given the following:

- o A Turbine/Generator trip has caused a Reactor trip.
- o The operators are in EOS-0.1A, "Reactor Trip Response," at step 1, "Check RCS Average Temperature - Stable at or Trending to 557 F."
- o RCS pressure is 1822 psig.
- o Pressurizer level is 22% and stable.
- o Core exit T/Cs are 610 F and slowly rising.
- o Containment pressure is 1.5 psig.
- o All S/G NR levels are 20% and slowly rising.

Which of the following actions should be taken?

- A. Transition to FRZ-0.1A, "Response to High Containment Pressure."
- B. Dump steam to the Condenser and proceed to step 2 of EOS-0.1A.
- C. Transition to FRH-0.1A, "Response to Loss of Secondary Heat Sink."
- D. Initiate SI and go to EOP-0.0A, "Reactor trip or Safety Injection," step 1.

Proposed Answer: D

Explanation:

The "fold-out" for EOS-0.1A requires initiation of SI at less than 25 degrees subcooling; with the RCS at 1822 psig and 610 degrees, that criteria is just satisfied.

Technical Reference: EOS-0.1A and Steam Tables

Proposed references to be provided to applicants during examination:

Steam Tables

Learning Objective: _____

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** _____
55.43 5

Comments:

SRO (ONLY) TEST QUESTION #: 19

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.1.009.EA2.01</u>	
Importance Rating	<u>4.2</u>	<u>4.8</u>

Proposed Question:

The plant is recovering from a loss of coolant accident in accordance with EOP-1.0A "Loss of Reactor or Secondary Coolant" with current conditions as follows:

- SI Pump Status: Both On
- RCP Status: ALL On
- RCS Pressure: 1987 psig and Stable
- Highest T-hot: 552 degrees F and Stable
- Highest CET: 560 degrees F and Stable
- Pressurizer Level: 34% and Increasing
- 1A S/G Narrow Range Level: 12% and Stable
- 1B S/G Narrow Range Level: 17% and Decreasing
- Total AFW Flow: 100 gpm
- Containment Pressure: 5 psig

Which ONE of the following actions should be taken?

- A. Stop all running RCPs
- B. Transition to FRZ-0.1A "Response to High Containment Pressure"
- C. Increase Total AFW flow to > 200 gpm
- D. Transition to EOS-1.1A "SI Termination"

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination: _____

Learning Objective: _____

Question Source: Bank # INPO 10764 Modified X
New _____

Question History: Last NRC Exam Kewaunee 1 (WEC), 12/18/1997

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 10
55.43 5

Comments:

Modifications: replaced one distracter.

RO/SRO TEST QUESTION #: 20

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.1.038.3EA2.11</u>	
Importance Rating	<u>3.7</u>	<u>3.9</u>

Proposed Question:

During the diagnostic steps of EOP-0.0 following a manual Reactor trip and SI due to a slowly decreasing Pressurizer level, the BOP notices that the Main Steam Line Radiation Monitor for one of the Steam Generators had been in alarm, but is now reading only slightly above normal on the PC-11 trends. Which statement below is correct?

- A. The trend is correct because when the Reactor and Turbine were tripped, the steam flow through the detector decreased resulting in the lower reading.
- B. The trend is correct because while the Reactor was critical, N-16 was being produced and entering the SG through a leak. The N-16 has now decayed away resulting in a lower reading.
- C. The trend is correct because the Main Steam Line Radiation Monitors are isolated on the SI signal resulting in the decreased reading.
- D. The trend is incorrect because if the radiation monitor was in alarm, the trend should continue to increase as the Krypton and Xenon reach a new higher equilibrium value until the leak is stopped.

Proposed Answer: B

Explanation:

Technical Reference: SOER 93-1, PALO VERDE SGTR

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # CPSES Modified
SYS.RM1.OB13-6
 New _____

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 11
55.43 5

Comments:

RO/SRO TEST QUESTION #: 22

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.1.011.G.2.4.18</u>	
Importance Rating	<u>2.7</u>	<u>3.6</u>

Proposed Question:

A Large Break Loss of Coolant Accident (LBLOCA) has occurred and all RCS hot leg temperatures indicate 385°F. Why should the SI Accumulators Injection Valves be closed at this time?

- A. Ensures that the RCS saturation pressure for 385°F does NOT exceed the SI Accumulator pressure after the accumulator water has been discharged.
- B. Prevents overpressurization of Containment, which could occur if the nitrogen in the Accumulators was allowed to enter the RCS and exit via the break.
- C. Ensures adequate volume of borated water and nitrogen have been injected to recover the Core with liquid and inert the hydrogen gas contained within the RCS and Containment.
- D. Prevents further nitrogen injection into the RCS which could impede further RCS depressurization.

Proposed Answer: D

Explanation:

Technical Reference: EOP-1.0A STEP 14 BASIS

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # CPSES Modified
SYS.SI1.OB16-2
 New _____

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
 _____ Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 10
55.43 _____

Comments:

RO/SRO TEST QUESTION #: 23

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>1</u>
K/A #	<u>4.5.E02.EK1.02</u>	
Importance Rating	<u>3.4</u>	<u>3.9</u>

Proposed Question:

Following a LOCA, if the SI accumulators cannot be isolated, the correct action is to:

- A. continue with the following steps, since isolation is not required.
- B. drain the SI accumulators.
- C. sample the pressurizer steam space for noncondensibles.
- D. vent the SI accumulators.

Proposed Answer: D

Explanation:

Technical Reference: EOP-1.0A, STEP 15 BASIS

Proposed references to be provided to applicants during examination:

Learning Objective: _____**Question Source:**

Bank #

CPSES

Modified

ERG.XDD.OB103-

 1 New **Question History:**

Last NRC Exam _____

Cognitive Level: X

Memory or Fundamental Knowledge

 Comprehension or Analysis**10 CFR Part 55 Content:****55.41** 8, 10 **55.43** **Comments:**

RO/SRO TEST QUESTION #: **24**

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

2

1

K/A #

4.5.E04.EK1.01

Importance Rating

3.5

3.9

Proposed Question:

ECA-1.2A, "LOCA Outside Containment", alerts the operator that some points of the system are a high probability for a LOCA. Which of the below has the highest probability for a LOCA outside containment?

- A. CCW piping interface with RCP Seals
- B. RHR low pressure piping arrangement
- C. SI to RHR cross-tie piping arrangement
- D. SI piping and injection lines to the RCS

Proposed Answer: B

Explanation:

Technical Reference: ECA-1.2A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES
SM1.XGH.OB102-

Modified

1

X

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge

X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 8, 10

55.41

8, 10

55.43

Comments:

Modification: altered one distracter.

RO/SRO TEST QUESTION #: 25

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>1</u>
K/A #	<u>4.5.E01.EK2.01</u>	
Importance Rating	<u>3.3</u>	<u>3.5</u>

Proposed Question:

In accordance with the information provided on the foldout page of EOS-0.0A, "Rediagnosis" operators should proceed to FRZ-0.1A, "Response to High Containment Pressure," if:

- A. containment pressure indicates > 50 psig.
- B. containment pressure is > 5 psig, and level in all SGs is < 5% (NR).
- C. containment pressure indicates >5 psig.
- D. containment pressure is >15 psig and containment spray is not on.

Proposed Answer: A

Explanation:

Technical Reference: EOS-0.0A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
SJ1.XG5.OB105 -
002

Modified

New

Question History: Last NRC Exam _____

Cognitive Level:

 X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content:

55.41 7
55.43

Comments:

RO/SRO TEST QUESTION #: 26

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

2

1

K/A #

4.5.E01.EK2.02

Importance Rating

3.5

3.8

Proposed Question:

Unit 2 is operating in EOP-0.0B, REACTOR TRIP OR SAFETY INJECTION. The Reactor is tripped and safety injection has actuated. The following plant indications and responses are observed;

- Containment pressure is 8 psig and rising.
- RCS subcooling is 57°F.
- Both CCPs and SIPs are running.
- Both CCWPs are running.
- Pressurizer level is 13%.
- Pressurizer pressure is 1815 psig.
- Two banks of steam dumps are open.
- Tave is 563 and rising.

Based on the above information, from the list below SELECT the required action.

- A. Increase auxiliary feedwater flow to the steam generators.
- B. Take manual control of steam dumps and increase demand.
- C. Take manual control of SG ARVs and throttle to control temperature.
- D. Allow SG ARVs to automatically control temperature..

Proposed Answer: C

Technical Reference: EOP-0.0B

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES

Modified

EO0.XG2.OB402-

2

New

Question History:

Last NRC Exam

Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content:

55.41

7

55.43

Comments:

RO/SRO TEST QUESTION #: 27

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>1</u>
K/A #	<u>4.2.001.AK2.05</u>	
Importance Rating	<u>2.9</u>	<u>3.1</u>

Proposed Question:

Unit 1 is steady with reactor power at 90%. All systems are operating normally with the rod control system in automatic. Without warning, the rods begin to step and Tav_g begins to increase above T_{ref}, which remains constant. Pressurizer pressure and level also begin to increase.

These symptoms are consistent with which of the following?

- A. PRZR pressure control system failure
- B. Main turbine/generator load increase
- C. Continuous rod insertion
- D. Continuous rod withdrawal

Proposed Answer: D

Explanation:

Technical Reference: ABN-712A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
SYS.CR1.OB09-1

Modified

New

Question History:

Last NRC Exam

Cognitive Level:

 Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41

7

55.43

Comments:

RO/SRO TEST QUESTION #: 28

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.5.E05.EK3.01</u>	
Importance Rating	<u>3.4</u>	<u>3.8</u>

Proposed Question:

What adverse consequence could result from delaying feed and bleed cooling if the conditions are met in FRH-0.1B "Response to Loss of Secondary Heat Sink"?

- A. Inability to provide sufficient injection for core cooling due to high RCS pressure.
- B. High temperature induced failure of U-tube bends
- C. RCP seal failure
- D. Inability to recover the SGs without damage from high thermal stresses.

Proposed Answer: A

Explanation:

Technical Reference: FRH-0.1B

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 8340 Modified
New

Question History: Last NRC Exam Ginna 1 (WEC), 5/8/1996

Cognitive Level: Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5, 10
55.43

Comments:

RO/SRO TEST QUESTION #: **29**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.5.E16.EK3.01</u>	
Importance Rating	<u>2.9</u>	<u>3.1</u>

Proposed Question:

Unit 2 is operating at 100% power. Over twelve hours the following plant indications and responses were observed in the control room;

- Containment humidity increased slightly
- Containment radiation increased slightly
- Containment dew point increased slightly
- Containment sump pumps have operated 1 time every hour.
- Automatic makeup to the VCT occurred 7 times.
- Letdown was maintained at 70 gpm and charging went from 82 gpm to 78 gpm.
- Pressurizer level has remained at 60%.
- Pressurizer pressure has trended from 2235 psig to 2220 psig and stabilized.
- No other abnormal alarms are annunciated.

Based on the above indications the operating crew entered ABN-103 and the following actions were taken;

- Radiation Protection was contacted to investigate containment radiation.
- Preparations are in progress to make a containment entry.
- Radiation Protection and Radwaste were notified that containment sumps would be left in operation to the WHT.
- Letdown and charging have been isolated and then realigned for normal operation.
- OPT-303 has been performed and unidentified leakage is 6 gpm.
- Preparations are being made to commence a reactor shutdown.

Based on the above information, SELECT from the list below the source of the unidentified leakage.

- A. Reactor Coolant System cold leg leak.
- B. Reactor Coolant System hot leg leak.
- C. Pressurizer vapor space leak.
- D. The yellow condition guideline must be implemented immediately due to plant conditions.

Proposed Answer: C

Technical Reference: ABN-103A

Question Source:

Bank #

CPSES
SYS.RC1.OB14
010

Modified

New

Cognitive Level:

 Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 5, 10

55.43

Comments:

RO/SRO TEST QUESTION #: 30

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

2

1

K/A #

4.5.E01.EK3.02

Importance Rating

3.0

3.9

Proposed Question:

Which of the below most correctly completes the following statement regarding natural circulation?

"Natural circulation flowrate will be greater if..

- A. reactor coolant pumps stop at the same time the reactor trips".
B. ALL reactor coolant pumps run for an hour after the reactor trip, then stop".
C. one reactor coolant pump runs for an hour after the reactor trip, then stops".
D. two reactor coolant pumps run for an hour after the reactor trip, then stop".

Proposed Answer: B

Explanation:

Technical Reference: EOS-0.0A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES

Modified

SJ1.XG5.OB101 -
001

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5, 10

55.43

Comments:

RO/SRO TEST QUESTION #: 31

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.2.008.AK3.03</u>	
Importance Rating	<u>4.1</u>	<u>4.6</u>

Proposed Question:

EOP-1.0A, "Loss of Reactor or Secondary Coolant," Step 1; "Check if RCPs should be stopped," is a continuous action step. Which ONE of the following is the basis for continuously monitoring for the criteria to perform this step in response to a LOCA?

- A. Minimize cooldown rate
- B. Prevent excessive RCS inventory loss
- C. Prevent RCP damage from cavitation
- D. Minimize RCP run time with less than the required subcooling

Proposed Answer: B

Explanation:**Technical Reference:** _____

Proposed references to be provided to applicants during examination: _____

Learning Objective: _____**Question Source:**

Bank # INPO 10769 Modified
New

Question History: Last NRC Exam Kewaunee 1 (WEC), 12/18/1997

Cognitive Level:

 Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 5, 10
55.43

Comments:

RO/SRO TEST QUESTION #: 32

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	<u>1</u>	<u>1</u>
	Group #	<u>2</u>	<u>2</u>
	K/A #	<u>4.5.E03.EK3.04</u>	
	Importance Rating	<u>3.5</u>	<u>3.9</u>

Proposed Question:

Unit 1 Pressurizer level is 89% and the RVLIS 49" above flange lights are dark and the plant computer indicates an INVENTORY yellow condition. The unit has experienced a small break LOCA and plant response is being directed by EOS-1.2A, POST-LOCA COOLDOWN AND DEPRESSURIZATION. ECCS flow has not been terminated. The Unit Supervisor has currently decided not to implement the yellow condition guideline. From the list below SELECT why this is or is not an acceptable decision.

- A. Transition has been made from EOP-0.0A, the yellow condition guideline should be implemented when EOS-1.2A is completed.
- B. There exist other, more critical plant conditions that should be addressed before implementation of the yellow condition guideline.
- C. Voids are not a concern when responding to a small break LOCA.
- D. The yellow condition guideline must be implemented immediately due to plant conditions.

Proposed Answer: B

Explanation:

Technical Reference: FRI-0.3A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:	Bank #	CPSES	Modified
		FRI.XH6.OB401	
		005	
			New

Question History: Last NRC Exam

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:	55.41	5, 10
	55.43	

Comments:

RO/SRO TEST QUESTION #: 33

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>4.2.028.AA1.07</u>	
Importance Rating	<u>3.3</u>	<u>3.3</u>

Proposed Question:

The reactor is critical at 10E-4% power when charging pump suction inadvertently switches from the VCT to the RWST. This occurs for approximately 10 minutes, then is stopped by the operators. Which one of the following describes the comparative effect that this will have on letdown flow?

- A. It will decrease the most at EOL.
- B. It will decrease the most at BOL.
- C. It will not be significantly affected.
- D. It will increase the most at BOL.

Proposed Answer: C

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination: _____

Learning Objective: _____

Question Source:

Bank # INPO 194 Modified
New

Question History: Last NRC Exam Arkansas Nuclear 2 (CE), 8/28/1998

Cognitive Level:

 Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 7
55.43

Comments:

RO/SRO TEST QUESTION #: **35**

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

3

3

K/A #

4.2.056.AA2.02

Importance Rating

3.5

3.6

Proposed Question:

The plant is recovering from a loss of off-site power. Select the choice below which can be used as an indication that the Blackout Sequencer Operator Lockouts have reset (no longer present).

- OL light on the associated sequencer is lit.
- All step lights are lit on both sequencers.
- Start of RMUW pump on associated train.
- TD AFW pump steam supply valve opens.

Proposed Answer: C

Explanation:

Technical Reference: ABN-602A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie

SYS.ES3.OB11-1

d

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge

X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10

55.41

10

55.43

5

Comments:

RO/SRO TEST QUESTION #: 36

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.7.015.A1.08</u>	
Importance Rating	<u>3.3</u>	<u>3.4</u>

Proposed Question:

Which limiting safety system setting provides a correction for changes in density and heat capacity of the reactor coolant system?

- A. Overpower Delta T
- B. Power Range High Flux
- C. Pressurizer Low Pressure
- D. Overtemperature Delta T

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 9124 Modified X
New

Question History: Last NRC Exam Cook 1 (WEC), 7/7/1997

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43

Comments:

Modifications: Replaced one distracter.

RO/SRO TEST QUESTION #: **37**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.5.022.A1.02</u>	
Importance Rating	<u>3.6</u>	<u>3.8</u>

Proposed Question:

The Containment internal pressure Technical Specification upper limit ensures that:

- A. the containment structure is prevented from exceeding its design negative pressure differential of 5 psid with respect to the outside atmosphere.
- B. peak pressure does not exceed the Containment design pressure during a LOCA.
- C. excessive quantities of radioactive materials will not be released via the Containment Ventilation System.
- D. the structural integrity of the containment will be maintained comparable to the original design standard for the life of the facility.

Proposed Answer: B

Explanation:

Technical Reference: TS 3.6.4 Bases

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank # CPSES Modified _____
SYS.CL1.OB32 New _____

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
 _____ Comprehension or Analysis

10 CFR Part 55 Content: 55.41 5
55.43 2

Comments:

SRO (ONLY) TEST QUESTION #: 38

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

1

1

K/A #

3.5.022.A2.06

Importance Rating

2.8

3.2

Proposed Question:

The containment design criteria are based on limiting the containment leakage rate under design basis accident conditions. According to the limiting containment analysis, containment pressure will:

- A. exceed the containment design pressure for a short time, but the containment cooling systems will ultimately restore containment pressure below the design limit.
- B. not exceed the containment design pressure initially. However, the analysis assumes a hydrogen burn that results in containment overpressure, which is ultimately controlled by the containment cooling systems.
- C. exceed the containment ultimate capacity, leading to a gross failure of the containment structure.
- D. not exceed the containment design pressure as long as a single train of containment cooling systems operates to perform its design function.

Proposed Answer: D

Explanation:

Technical Reference: ERG-HP/LP BACKGROUND, FRZ-0.1

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES
D.MIF.OB102-
1

Modifie
d

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content:	55.41	5
	55.43	5

Comments:

RO/SRO TEST QUESTION #: 39

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

1

1

K/A #

3.4.059.A2.04

Importance Rating

2.9

3.4

Proposed Question:

ECA-2.1A/B, "Uncontrolled Depressurization of All Steam Generators," identifies that Auxiliary Feedwater flow to each Steam Generator with a narrow range level of less than 5% must be controlled at a minimum of 100 gpm. Which of the following is the reason for the minimum flow requirement?

- A. Prevent Steam Generator tube dryout.
- B. Ensure adequate RCS subcooling margin.
- C. Maintain a verifiable cooldown rate.
- D. Prevent further Steam Generator depressurization.

Proposed Answer: A

Explanation:

Technical Reference: ECA-2.1A/B STEP 2 AND BASES

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie
d

SK1.XG1.OB103-
1

New

Question History: Last NRC Exam

[illegible]

10 CFR Part 55 Content:	55.41	5
	55.43	5

Comments:

RO/SRO TEST QUESTION #: 40

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

2

2

K/A #

4.5.E05.EA2.02

Importance Rating

3.7

4.3

Proposed Question:

The plant staff has transitioned from EOP-3.0A (Steam Generator Tube Rupture) to FRC-0.1A (Response to Inadequate Core Cooling) due to an identified red path. While performing FRC-0.1A, a red path for loss of secondary heat sink occurs. Which of the following gives the correct operator action?

- A. Complete FRC-0.1A and then transition to FRH-0.1A (response to Loss of Secondary Heat Sink)
- B. Complete FRC-0.1A and then return to EOP-3.0A
- C. Transition immediately to FRH-0.1A and upon completion return to FRC-0.1A
- D. Transition immediately to FRH-0.1A and upon completion return to EOP-3.0A

Proposed Answer: A

Explanation:

Technical Reference: FRC-0.1, OCA-407

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES
FRC.XH2.OB404-
1

Modifie
d

New

Question History: Last NRC Exam

Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content:

55.41

55.43

5

Comments:

(originally #102)

SRO (ONLY) TEST QUESTION #: 41

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.2.004.A2.19</u>	
Importance Rating	<u>2.8</u>	<u>3.5</u>

Proposed Question:

During oxygen scavenging in the RCS, the CVCS demineralizers flow is:

- A. maximized to aid in removal of the ammonia which is created by the evolution.
- B. bypassed to prevent the creation of ammonia from the added hydrazine.
- C. maximized to aid in removal of chlorides and fluorides from the RCS.
- D. bypassed to prevent the removal of the added hydrazine before it can remove the oxygen.

Proposed Answer: D

Explanation:

Technical Reference: IPO-001

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank #	CPSES IPO.XO1.OB900- <u>6</u>	Modified <u> </u>
		New <u> </u>

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: 55.41 5
 55.43 5

Comments:

RO/SRO TEST QUESTION #: 42

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.4.061.A3.02</u>	
Importance Rating	<u>4.0</u>	<u>4.0</u>

Proposed Question:

Given the following:

- ECA-2.1A, "Uncontrolled Depressurization of All Steam Generators," has been entered.
- SGs 1, 3, and 4 narrow range levels are 20%.
- SG 2 narrow range level is 40%.
- RCS pressure is 1200 psig and decreasing.
- RCS subcooling is 42 degrees F.
- Containment pressure is 14 psig.
- RCS cooldown rate is greater than 100 degrees F/hour.

Which one of the following actions should be taken for the given conditions?

- A. Stop AFW flow to all SGs until cooldown rate is less than 100 degrees F/hour.
- B. Reduce AFW flow to SGs 1, 3, and 4 to 100 gpm until cooldown rate is less than 100 degrees F/hour.
- C. Stop AFW flow to SGs 1, 3, and 4 until cooldown rate is less than 100 degrees F/hour.
- D. Reduce AFW flow to SG 2 to 100 gpm and stop AFW flow to SGs 1, 3, and 4 until cooldown rate is less than 100 degrees F/hour.

Proposed Answer: B**Explanation:****Technical Reference:** ECA-2.1A**Proposed references to be provided to applicants during examination:****Learning Objective:** _____**Question Source:**

Bank #	CPSES EO2.XG4.OB900 001	Modified
		New

Question History: Last NRC Exam _____**Cognitive Level:**

<u> </u>	Memory or Fundamental Knowledge
<u>X</u>	Comprehension or Analysis

10 CFR Part 55 Content: 55.41 7

55.43 _____

Comments:**RO/SRO TEST QUESTION #:** 43

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.2.004.A3.12</u>	
Importance Rating	<u>3.0</u>	<u>2.7</u>

Proposed Question:

TCV-129 protects the BTRS demineralizers by:

- A. shutting the BTRS isolation valves at 155°F upstream of the BTRS demineralizers.
- B. diverting CVCS letdown flow to the VCT which stops flow through BTRS at 155°F upstream of the BTRS demineralizers.
- C. starting the BTRS chiller at 155°F upstream of the BTRS demineralizers.
- D. TCV-129 does not protect the BTRS demineralizers.

Proposed Answer: B

Explanation:

Technical Reference: SOP-106A SECTION 4.0

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SYS.BT1.OB900 016	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: 55.41 7
55.43

Comments:

RO/SRO TEST QUESTION #: 44

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.2.060.AA2.04</u>	
Importance Rating	<u>2.6</u>	<u>3.4</u>

Proposed Question:

Which of the following are considered as a Gaseous Radioactive Effluent Release source per the ODCM?

- A. U1 Containment Purge
- B. Fuel Building Ventilation
- C. Auxiliary Building Ventilation
- D. U2 Condenser Off Gas

Proposed Answer: A

Explanation:

Technical Reference: ODCM

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank #	CPSES ADM.XA8.OB02 002	Modified
		New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content: 55.41
55.43 5

Comments:

(originally #103)

SRO (ONLY) TEST QUESTION #: 45

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.4.059.A4.11</u>	
Importance Rating	<u>3.1</u>	<u>3.3</u>

Proposed Question:

Which ONE of the following Feedwater Isolation Signals (FWI) must be manually reset by pushing the FWI reset pushbuttons before the feedwater isolation valves may be opened?

- A. Containment Isolation
- B. Safety Injection
- C. Hi-Hi Steam Generator Level
- D. P-4 coincident with Lo Tave.

Proposed Answer: D

Explanation:

Technical Reference: SOP-302A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SYS.MF1.OB07 - 002	Modified
		New <u> </u>

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: 55.41 7
 55.43

Comments:

RO/SRO TEST QUESTION #: 46

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.9.068.G.2.3.4</u>	
Importance Rating	<u>2.5</u>	<u>3.1</u>

Proposed Question:

A discharge permit is being routed to discharge Plant Effluent Holdup and Monitor Tank to Outfall 004. Which of the following Post NID QA Analysis results require that the radwaste supervisor be notified?

- A. Antimony (Sb) - 1.5 E-6 uci/ml
- B. Cobalt (Co) - 2.3 E-7 uci/ml
- C. Cesium (CS) - 1.0 E-5 uci/ml
- D. Iodine (I) - < MDA

Proposed Answer: C

Explanation:

Technical Reference: RWS-103 ATT9

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SYS.WP1.OB07 001	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
 _____ Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10
55.43 4

Comments:

RO/SRO TEST QUESTION #: 47

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

1

1

K/A #

3.7.015.K1.03

Importance Rating

3.1

3.1

Proposed Question:

A normal reactor startup is planned for the unit following maintenance on excore nuclear instrumentation. Believing a problem may still exist, the RO is directed to closely observe source range operation throughout the evolution. Which one of the following is an indicator that the source range channel failed high during the reactor startup? Assume that the reactor trips.

- A. Rod withdrawal block
- B. P-6 energized
- C. P-10 energized
- D. Flux Doubling Alarm is lit

Proposed Answer: D

Explanation:

Technical Reference: ALM-0064

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie

SYS.EC1.OB10-2

d

New

Question History: Last NRC Exam

Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content:

55.41

2, 9

55.43

Comments:

RO/SRO TEST QUESTION #: 48

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

1

Group #

2

2

K/A #

4.5.E.16.EK1.03

Importance Rating

3.0

3.3

Proposed Question:

While responding to a loss of coolant accident, the Unit 2 Unit Supervisor directs the Reactor Operator to maintain Steam Generator level between 18% and 50% Narrow Range. Which of the following would require this level to be maintained?

- A. Containment radiation 3×10^4 R/hr
B. Containment pressure at HI-1.
C. Containment temperature 205°F
D. Containment integrated dose 1.5×10^6 Rad

Proposed Answer: D

Explanation:

Technical Reference: EOP-0.0A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES
EO0.XG2.OB405
017

Modifie
d

New

Question History: Last NRC Exam

Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content:

55.41 8, 10

55.43 5

Comments:

(originally #104)

SRO (ONLY) TEST QUESTION #: 49

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.1.001.K1.05</u>	
Importance Rating	<u>4.5</u>	<u>4.4</u>

Proposed Question:

An approach to criticality is being performed by means of control rod withdrawal. The RO stops control rod motion when the reactor is close to criticality but still subcritical. The SR count rate should:

- A. continue to increase, but at a slower rate. The startup rate should stabilize at a lower positive value.
- B. continue to increase for a short time and then plateau. The startup rate should gradually decrease to zero.
- C. stop increasing and stabilize at its present value. The startup rate should immediately decrease to zero.
- D. begin to slowly decrease. The startup rate should gradually decrease to zero from a slightly negative value.

Proposed Answer: B

Explanation:

Technical Reference: IPO-002A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES IPO.XO2.OB900- 012	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u> X </u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u>2, 9</u>
55.43	<u> </u>

Comments:

RO/SRO TEST QUESTION #: 50

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.2.022.AK3.03</u>	
Importance Rating	<u>3.1</u>	<u>3.3</u>

Proposed Question:

What are the functions of excess letdown?

- A. Provides additional letdown capability during heatup, and compensates for RCP seal injection when normal letdown is unavailable.
- B. Provides additional letdown capability during cooldown, and removes heat from RCP seal return when RCP #1 seal failure occurs.
- C. Provides additional letdown capability when RCP #1 seal bypass is in service, and removes heat from RCP #1 seal leakoff.
- D. Provides additional letdown capability during crud burst, and provides relief flowpath when RCP #1 seal bypass is in service.

Proposed Answer: A

Explanation:

Technical Reference: OP51.SYS.CS1

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SYS.CS1.OB12- 001	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

X Memory or Fundamental Knowledge
 _____ Comprehension or Analysis

10 CFR Part 55 Content:

55.41 5, 10
55.43 2

Comments:

(originally #105)

SRO (ONLY) TEST QUESTION #: 51

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.4.003.K1.01</u>	
Importance Rating	<u>2.6</u>	<u>2.8</u>

Proposed Question:

Unit 1 is operating at 50% power when a RCP Lube Oil Low Level alarm actuates. Maintenance personnel request to enter the Containment Loop Rooms to setup a camera for remote monitoring capability. Who must approve this entry into the Containment Loop Rooms?

- A. Shift Manager.
- B. Radiation Protection Manager.
- C. Plant Manager.
- D. Either B or C.

Proposed Answer: D

Explanation:

Technical Reference: OPD1.ADM.XAB, STA-620

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES ADM.XAB.OB13- <u>1</u>	Modified New <u> </u>
--------	------------------------------------	-------------------------------------

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 2, 9
55.43

Comments:

RO/SRO TEST QUESTION #: **52**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.2.032.AK3.02</u>	
Importance Rating	<u>3.7</u>	<u>4.1</u>

Proposed Question:

A Reactor Startup is in progress with Control Bank B at 50 steps and Reactor Power at 102 CPS. Which ONE of the following is required if one Source Range Nuclear Channel fails low and why?

- A. Suspend the Reactor Startup to ensure protection against rod withdrawal accidents.
- B. Place the SRNI channel in the tripped condition within 6 hours to prevent inadvertent reactor trip.
- C. Verify Shutdown Margin within one hour to ensure adequate negative reactivity can be inserted to shutdown the reactor if necessary.
- D. Continue the startup since SRNI channels are not required to show protection above the P-6 interlock.

Proposed Answer: A

Explanation:

Technical Reference: TS 3.3.1 and Bases

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank

Modified

New X

Question History: Last NRC Exam _____

Cognitive Level:

X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content:

55.41 _____
55.43 2, 5

Comments:

(originally #106)

SRO (ONLY) TEST QUESTION #: 53

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.5.022.K3.02</u>	
Importance Rating	<u>3.0</u>	<u>3.3</u>

Proposed Question:

Which plant condition will most likely cause a RV FLANGE LKOFF TEMP HI alarm?

- A. Loss of Ventilation Chillers 1, 2, 3 and 4.
- B. Loss of Ventilation Chillers 7, 8 and 9.
- C. Loss of power to 1PC1.
- D. Loss of power to 1C1.

Proposed Answer: A

Explanation:

Technical Reference: ALM-0053A, Window 1.1

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank #

CPSES
SYS.RC1.OB04

Modified

New

Question History:

Last NRC Exam

Cognitive Level:X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content:**55.41**7**55.43****Comments:**

RO/SRO TEST QUESTION #: **54**

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

1

1

K/A #

3.4.061.K3.02

Importance Rating

4.2

4.4

Proposed Question:

During the performance of IPO-002A the operator is directed to replace Motor Driven AFW pump fuses. These fuses restore pump auto-start on:

- A. LO-LO S/G level.
- B. Blackout Signal.
- C. Safety Injection Signal.
- D. trip of both Main Feedwater Pumps..

Proposed Answer: D

Explanation:

Technical Reference: IPO-002A

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie
d

IPO.XO2.OB900 -
023

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 7

55.43

Comments:

RO/SRO TEST QUESTION #: 55

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.4.061.K4.01</u>	
Importance Rating	<u>4.1</u>	<u>4.2</u>

Proposed Question:

Given the following:

- o CST Level is 200,000 gallons.
- o The Unit is in mode 3.
- o A loss of offsite power has occurred.
- o Steam is being released through the S/G PORV's.

Is the CST level sufficient and why?

- A. Yes, because it is sufficient to hold the unit in mode 3 for 4 hours, followed by a cooldown to RHR entry conditions at the design rate of 25°F/hr.
- B. No, because it is insufficient to hold the unit in mode 3 for 4 hours, followed by a cooldown to RHR entry conditions at the design rate of 25°F/hr.
- C. Yes, because it is sufficient to hold the unit in mode 3 for 4 hours, followed by a cooldown to RHR entry conditions at the design rate of 50°F/hr.
- D. No, because it is insufficient to hold the unit in mode 3 for 4 hours, followed by a cooldown to RHR entry conditions at the design rate of 50°F/hr.

Proposed Answer: C

Explanation:

Technical Reference: TS 3.7.6 bases

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43 2

Comments:

SRO (ONLY) TEST QUESTION #: 56

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.2.013.K4.12</u>	
Importance Rating	<u>3.7</u>	<u>3.9</u>

Proposed Question:

WHICH ONE (1) of the following describes the design interlock or operating practice that is used to prevent ALL automatic Safety Injection (SI) actuations following a reset of the SI signal?

- A. The sixty (60) second delay timer in the SI reset circuitry.
- B. Manually blocking steam line pressure and PZR pressure SI from the control board.
- C. The seal-in feature of the reset circuitry disarms all subsequent SI actuations.
- D. The P-4 interlock, actuated by the opening of the reactor trip breakers.

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination: _____

Learning Objective: _____

Question Source:

Bank
#

INPO 4225

Modified

New

Question History:

Last NRC Exam Harris 1 (WEC), 2/24/1997

Cognitive Level:

X

Memory or Fundamental Knowledge

 Comprehension or Analysis

10 CFR Part 55 Content:

55.41

7

55.43

Comments:

RO/SRO TEST QUESTION #: 57

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.1.001.K4.23</u>	
Importance Rating	<u>3.4</u>	<u>3.8</u>

Proposed Question:

During a 10% step load increase, the operator observes:

- 855 MWe (stable)
- Tave - Tref error = 8°F (Tave 8°F low)
- 68% RTP (increasing)
- OTNI6/C-3 (PCIP) dark
- all controls in automatic

Which of the below describes a possible response of the rod control system during this transient?

- A. Rods not moving out due to the OPNI6 rod stop (C-4).
- B. Rods moving out due to Rx power increasing with turbine load constant.
- C. Rods not moving out to restore Tave (when Tave is 3°F low) due to Reactor power increasing.
- D. Rods moving out to restore Tave (when Tave is 3°F low) due to Reactor power increasing.

Proposed Answer: C

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # CPSES Modified X
MCO.TA2.OB103
 New _____

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43 _____

Comments:

Modification: replaced one distracter.

RO/SRO TEST QUESTION #: 58

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>3.2.013.K6.01</u>	
Importance Rating	<u>2.7</u>	<u>3.1</u>

Proposed Question:

An Engineered Safety Features (ESF) Containment Hi-3 Pressure signal occurs when:

- A. 2/4 Hi containment pressure detectors sense pressure ≥ 3.2 psig.
- B. 2/4 Hi containment pressure detectors sense pressure ≥ 18.2 psig.
- C. 2/3 Hi containment pressure detectors sense pressure ≥ 18.2 psig.
- D. 2/3 Hi containment pressure detectors sense pressure ≥ 3.2 psig.

Proposed Answer: B

Explanation:

Technical Reference: ALM-0022A (ALB 2B, 3.10)

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank	CPSES	Modified	
#	<u>SYS.CT1.OB04-3</u>	d	<u>X</u>
		New	<u></u>

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43

Comments:

Modified: altered one distracter

RO/SRO TEST QUESTION #: 59

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.7.012.A1.01</u>	
Importance Rating	<u>2.9</u>	<u>3.4</u>

Proposed Question:

During the performance of OPT-309, "Unit Calorimetric", the feedwater temperature points utilized were reading 10°F LOWER than actual feedwater temperature. Power range nuclear instruments adjustments were performed per the OPT.

What is the status of the current power range indications?

- A. Indicated power is LESS THAN actual power; therefore, power range instruments are set CONSERVATIVELY.
- B. Indicated power is LESS THAN actual power; therefore, power range instruments are set NON-CONSERVATIVELY.
- C. Indicated power is GREATER THAN actual power; therefore, power range instruments are set NON-CONSERVATIVELY.
- D. Indicated power is GREATER THAN actual power; therefore, power range instruments are set CONSERVATIVELY.

Proposed Answer: D

Explanation:

Technical Reference: LO21.SF4.XOC, OPT-309

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SF4.XOC.OB103- 1	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u> X </u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u> 5 </u>
55.43	<u> </u>

Comments:

RO/SRO TEST QUESTION #: 60

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.8.029.A2.01</u>	
Importance Rating	<u>2.9</u>	<u>3.6</u>

Proposed Question:

Given the following conditions:

- Unit 1 is in mode 6 for a refueling outage.
- Off-load of fuel is 55 % complete and ongoing.
- Containment purge and exhaust is in service.
- The instrument department has just reported that the current HI and HI-HI setpoints for CONTAINMENT EXHAUST RADIATION MONITOR were incorrectly set two decades HIGH.

Based on this information, the required action is to:

- A. suspend core off-load until the containment purge and exhaust valves are closed.
- B. suspend core off-load until the correct setpoints are entered.
- C. continue core off-load and direct HP to perform continuous air monitoring of the containment.
- D. continue core off-load and verify purge exhaust directed through the charcoal filter bank.

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 1342 Modified
New

Question History: Last NRC Exam North Anna 1 (WEC), 1/26/1996

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43 5

Comments:

RO/SRO TEST QUESTION #: **61**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.6.062.A2.09</u>	
Importance Rating	<u>2.7</u>	<u>3.0</u>

Proposed Question:

Current flow to ground is limited in a neutral grounding transformer by:

- A. the reflected impedance of the secondary into the primary.
- B. a series current limiting resistor.
- C. a protective overcurrent relay.
- D. a circuit breaker

Proposed Answer: A

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank	CPSES	Modifie
#	SYS.AC2.OB900	d
	<u>- 002</u>	
		New <u> </u>

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43 5

Comments:

RO/SRO TEST QUESTION #: 62

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>4.5.E.11.EK3.02</u>	
Importance Rating	<u>3.5</u>	<u>4.0</u>

Proposed Question:

In ECA-1.1A, "Loss of Emergency Coolant Recirculation", after the RWST is empty (12%) and any ECCS pumps taking suction from the RWST are stopped, the SGs are depressurized. Step 31 states: "Depressurize all intact SGs to inject accumulators as necessary". Choose the answer below that describes the intent of Step 31.

- A. The SGs are depressurized quickly in order to have the accumulator contents increase the recirc sump inventory.
- B. The core is kept covered by depressurizing all intact SGs slowly, extending the time to depletion of the accumulators.
- C. The SGs are depressurized, one at a time, to inject the accumulators one at a time.
- D. The accumulators are injected so that nitrogen to them can be isolated.

Proposed Answer: B

Explanation:

Technical Reference: ECA-1.1A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SM1.XGG.OB104 005	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

<u>Memory or Fundamental Knowledge</u>
<u>X</u> Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u>5, 10</u>
55.43	<u>2, 5</u>

Comments:

(originally #107)

SRO (ONLY) TEST QUESTION #: 63

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.2.011.A2.04</u>	
Importance Rating	<u>3.5</u>	<u>3.7</u>

Proposed Question:

Unit 1 is in the following configuration: RCS pressure is 300 psig, Tavg is 300°F, and Train "A" RHR is in the shutdown cooling mode. At this point, pressurizer level starts decreasing rapidly with flow controller FK-121 fully open.

Select the correct action to be taken if pressurizer level continues to decrease.

- A. Unisolate the Safety Injection Accumulators.
- B. Reduce letdown flow - transfer to the 45 gpm orifice.
- C. Dispatch an operator to rack in the breakers to the non-operating CCP and one SIP.
- D. Reset containment isolation Phase A and B.

Proposed Answer: C

Explanation:

Technical Reference: ABN-108

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SYS.RC1.OB30 - 032	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u>X</u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u>5</u>
55.43	<u>5</u>

Comments:

RO/SRO TEST QUESTION #: 64

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>1</u>
K/A #	<u>3.5.026.A3.01</u>	
Importance Rating	<u>4.3</u>	<u>4.5</u>

Proposed Question:

A large break LOCA has occurred on Unit 1. Given the following conditions:

- Containment pressure is 22 psig
- Containment Spray failed to automatically initiate
- Manual pushbutton actuation for Containment Spray was also unsuccessful

Which ONE of the following describes the required operator actions following manual start of Containment Spray Pumps?

- A. Verify CS Heat Exchanger Outlet valves are OPEN; manually OPEN Chemical Additive Tank Discharge valves.
- B. Manually OPEN CS Heat Exchanger Outlet valves; manually OPEN Chemical Additive Tank Discharge valves.
- C. Manually OPEN CS Heat Exchanger Outlet valves; verify Chemical Additive Tank Discharge valves are OPEN.
- D. Verify CS Heat Exchanger Outlet valves are OPEN; verify Chemical Additive Tank Discharge valves are OPEN.

Proposed Answer: B

Explanation:

Technical Reference: SOP-204A, FRZ-0.1A

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43 _____

Comments:

RO/SRO TEST QUESTION #: 65

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.4.055.A3.03</u>	
Importance Rating	<u>2.5</u>	<u>2.7</u>

Proposed Question:

Unit 1 is at 100% power with CEV 1-02 running, CEV 1-01 in standby, and CEV 1-03 off. While conducting a CEV lineup verification, you discover 1CV-0235 CNDSR VAC PMP 1-01 SUCT PRESS SW 2970A/2971A/2972A HP RT VLV closed, and the instrument air line between 1PS-2971A and 1CV-235 is disconnected. If Main Condenser vacuum decreases to 23" with this alignment, how will CEV operation be affected?

- A. CEV 1-02 will eventually trip.
- B. CEV 1-01 will start on low vacuum, and 1-HV-2956 will open.
- C. CEV 1-01 will NOT start on low vacuum, and 1-HV-2956 will NOT open.
- D. CEV 1-01 will start on low vacuum, but 1-HV-2956 will NOT open.

Proposed Answer: D

Explanation:

Technical Reference: M1-2211, SH 02

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SYS.CV1.OB106- 003	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u>X</u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u>7</u>
55.43	<u> </u>

Comments:

RO/SRO TEST QUESTION #: 66

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

2

2

K/A #

3.8.029.A4.04

Importance Rating

3.5

3.6

Proposed Question:

While lifting a fuel assembly from the Reactor vessel lower core plate, audible Source Range indication inside Containment is lost and cannot be corrected. Which of the following actions are correct for this situation?

- A. Movement of the fuel assembly must cease immediately. Containment evacuation is required.
- B. Core alterations may continue as long as the criticality alarm is NOT alarming. Containment evacuation is NOT required.
- C. Movement of the fuel assembly shall continue to place it in a safe location. Containment evacuation is required.
- D. Core alteration may continue as long as Containment Integrity is met. Containment evacuation is NOT required.

Proposed Answer: C

Explanation:

Technical Reference: TS 3.9; RFO-102, RFO-302

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES
RFO.SYE.OB404
002

Modifie
d

New

Question History: Last NRC Exam

Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content:

55.41

7

55.43

Comments:

RO/SRO TEST QUESTION #: 67

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.7.012.G.2.2.22</u>	
Importance Rating	<u>3.4</u>	<u>4.1</u>

Proposed Question:

While in mode 4 with one Control Bank rod indicating at 9 steps, what is the basis for requiring both Source Range Nuclear Instrument Reactor Trip System channels operable?

- A. SRNI RTS channels are not required to be operable below mode 2.
- B. They provide core protection against a rod withdrawal accident.
- C. They provide core protection against a rod ejection accident.
- D. They provide protection to ensure the integrity of the fuel under all possible overpower conditions.

Proposed Answer: B

Explanation:

Technical Reference: TS SECTION 3.3.1

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified _____
New X

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** _____
55.43 2

Comments:

SRO (ONLY) TEST QUESTION #: 68

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.7.016.K1.10</u>	
Importance Rating	<u>3.1</u>	<u>3.1</u>

Proposed Question:

Which of the following conditions would require entering a CPSES Technical Specification Limiting Condition for Operation action with the plant in hot standby?

- A. Opening the outer door to the Personnel Air Lock to enter Containment
- B. Containment pressure at 1.2 psig
- C. Containment air temperature 123°F
- D. One train of Electric Hydrogen Recombiners inoperable

Proposed Answer: C

Explanation:

Technical Reference: TS 3.6.5

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank #	CPSES SYS.CY1.OB900- 25	Modified
		New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 2, 9
55.43

Comments:

RO/SRO TEST QUESTION #: 69

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.2.006.K2.02</u>	
Importance Rating	<u>2.5</u>	<u>2.9</u>

Proposed Question:

Upon loss of all a/c power while operating in mode 1 at 100% power, how will the SIS Accumulator Isolation Valves respond?

- A. SIS Accumulator Isolation Valves are air operated and are not affected by loss of a/c.
- B. They will fail open.
- C. They will fail shut.
- D. They will remain in the same position they were in before the loss of a/c.

Proposed Answer: D

Explanation:

The SIS Accumulator Isolation Valves are motor operated and will not change positions on loss of their 480v power supply.

Technical Reference: Drawings M1-0262, M1-2262, E1-0005, E1-0009

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank
#

Modifie
d

New X

Question History: Last NRC Exam _____

Cognitive Level:

 Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 3, 7

55.43 _____

Comments:

RO/SRO TEST QUESTION #: **70**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.4.035.K3.01</u>	
Importance Rating	<u>4.4</u>	<u>4.6</u>

Proposed Question:

Due to a malfunction with the S/G Blowdown Mixed Bed Demineralizer Outlet Radiation Valve, S/G Blowdown flow has isolated. What effect does this have on Reactor power if the unit is operating at 80% RTP?

- A. Reactor power increases approximately 5%.
- B. Reactor power decreases approximately 2%.
- C. Reactor power remains the same.
- D. Reactor power decreases initially, and slowly rises back to original value.

Proposed Answer: B

Explanation:

Technical Reference: DBD-ME-0239

Proposed references to be provided to applicants during examination:

Learning Objective: _____**Question Source:**

Bank	CPSES	Modified
#	<u>SYS.SB1.OB06-1</u>	<u> </u>
		New <u> </u>

Question History: Last NRC Exam

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u> X </u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	<u> 7 </u>
55.43	<u> </u>

Comments:

RO/SRO TEST QUESTION #: 71

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.7.016.K3.08</u>	
Importance Rating	<u>3.5</u>	<u>3.7</u>

Proposed Question:

Unit 1 is operating at 100% power with all control systems in their normal alignment when the Pressurizer Pressure Instrument selected for control to the Pressurizer Master Pressure Controller fails high. Which of the below actions will occur? (assume no operator actions)

- A. PCV-455A will open and not re-close.
- B. PCV-456 will open and not re-close.
- C. PCV-456 will open and re-close at 2185 psig.
- D. PCV-455A will open and re-close at 2185 psig.

Proposed Answer: D

Explanation:

Technical Reference: LO21.MCO.TA3.LP

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES MCO.TA3.OB102 - 24	Modified New
	<u> </u>	<u> </u> <u> </u>

Question History: Last NRC Exam

Cognitive Level:

 X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content:

55.41 7
55.43

Comments:

RO/SRO TEST QUESTION #: 72

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u>1</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>4.2.028.AA2.14</u>	
Importance Rating	<u>2.6</u>	<u>2.8</u>

Proposed Question:

WHICH ONE (1) of the following conditions would result in an increase in indicated pressurizer level?

- A. The reference leg cools down due to a decrease in containment temperature.
- B. Pressurizer liquid temperature increases.
- C. A leak in the reference leg of the controlling pressurizer level transmitter.
- D. Containment pressure increases to 0.3 psig; containment temperature remains constant.

Proposed Answer: C

Explanation:

Technical Reference: LO21.GFE.FF1.LN

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES SYS.PP1.OB08- 28	Modified
		New <u> </u>

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: 55.41
55.43 5

Comments:

(originally #108)

SRO (ONLY) TEST QUESTION #: 73

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>2.1.19</u>	
Importance Rating	<u>3.0</u>	<u>3.0</u>

Proposed Question:

Given the following Unit 1 plant conditions:

- o A reactor trip and safety injection have occurred.
- o RCS pressure is stable at 420 psig.
- o Over the last hour the cold leg temperatures have decreased to 240°F as follows:

60 minutes ago	-	350°F
45 minutes ago	-	315°F
30 minutes ago	-	285°F
15 minutes ago	-	260°F
Now	-	240°F

Which ONE of the following would be the appropriate procedure in response to the current state of the Integrity CSF?

- A. FRP-0.2A
- B. FRP-0.1A
- C. FRP-0.3A
- D. CSF is satisfied

Proposed Answer: B

Explanation:

Technical Reference: Integrity CSF diagram

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified X
New

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10
55.43 5

Comments:

(originally #109)

SRO (ONLY) TEST QUESTION #: 74

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

2

2

K/A #

3.7.073.K4.01

Importance Rating

4.0

4.3

Proposed Question:

If the S/G Blowdown Mixed Bed Demineralizer Outlet Radiation Monitor was to lose power, what effect would this have on the S/G Blowdown System?

- A. The Control Room would not receive warning of S/G Blowdown Demineralizer resin exhaustion.
- B. The radiation valve would close and all S/G Blowdown flow stops.
- C. The radiation valve will be unable to perform its intended function.
- D. The Control Room would receive a S/G Blowdown Panel trouble alarm and the system will continue to operate.

Proposed Answer: B

Explanation:

Technical Reference: E1-0040, Sh 97, ALM-3200 att 3

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES

Modified

SYS.SB1.OB09-2

New

Question History: Last NRC Exam

Cognitive Level:

X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content:

55.41

7

55.43

4

Comments:

RO/SRO TEST QUESTION #: 75

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.8.086.K4.01</u>	
Importance Rating	<u>3.1</u>	<u>3.7</u>

Proposed Question:

A fire has been reported in the Aux. Building. The Fire Brigade has responded and is using the Fire Protection Hose Stations to fight the fire. Which ONE of the following describes the response of the fire pumps to decreasing fire header pressure?

- A. The diesel driven pumps start at 142 psig and the electric fire pump starts if pressure is not raised above 120 psig in 10 seconds.
- B. One diesel driven fire pump starts at 148 psig and the electric fire pump starts at 120 psig.
- C. The electric fire pump starts at 142 psig and one diesel driven fire pump starts in 10 seconds if pressure is not above 140 psig.
- D. The electric fire pump starts at 142 psig; one diesel driven fire pump starts at 120 psig; the other diesel driven fire pump starts in 10 seconds if pressure is not raised above 120 psig.

Proposed Answer: C

Explanation:

Technical Reference: SOP-904

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
SYS.FP1.OB106-
001

Modified

New

Question History:

Last NRC Exam

Cognitive Level:X

Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content:**55.41**7**55.43****Comments:**

RO/SRO TEST QUESTION #: **76**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>2.1.22</u>	
Importance Rating	<u>2.8</u>	<u>3.3</u>

Proposed Question:

Consider the following conditions:

- The plant is currently shutdown
- Reactor power = 0%
- T_c = 360F and steady
- K_{eff} = .90
- All reactor head closure bolts are fully tensioned

The procedure governing the current mode is:

- A. IPO-003B
- B. IPO-001B
- C. IPO-007B
- D. IPO-010B

Proposed Answer: C

Explanation:

Technical Reference: TS table 1.1-1, IPO-007B

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified X
New

Question History: Last NRC Exam _____

Cognitive Level: _____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 10
55.43 5

Comments:

(originally #110)

SRO (ONLY) TEST QUESTION #: 77

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

2

2

K/A #

3.8.086.K4.03

Importance Rating

3.1

3.7

Proposed Question:

The Unit 2 Safeguards PEO has reported that the 2-02 Diesel Generator Starting Air Compressor is extremely warm. If a fire were to occur on this component a local.....

- A. ionization smoke detector would detect the fire and initiate the deluge system.
B. thermal detector would detect the fire and provide alarms.
C. thermal detector would detect the fire and initiate the deluge system.
D. ionization smoke detector would detect the fire and provide alarms.

Proposed Answer: D

Explanation:

Technical Reference: ABN-901 att1 & 5

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie
d

SYS.FP1.OB303 -
001

New

Question History: Last NRC Exam

Cognitive Level: X

 Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content:	55.41	7
	55.43	

Comments:

RO/SRO TEST QUESTION #: 78

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>3.3.010.K5.02</u>	
Importance Rating	<u>2.6</u>	<u>3.0</u>

Proposed Question:

The pressurizer is being maintained at 2000 psia and 636 °F when one of the Power-Operated Relief Valves (PORVs) starts to leak to the Pressurizer Relief Tank (PRT). The PRT pressure is maintained at 5 psig. The TEMPERATURE of the fluid immediately downstream of the PORV is approximately:

- A. 220°F
- B. 240°F
- C. 230°F
- D. 250°F

Proposed Answer: C

Explanation:

The process is isenthalpic and the fluid downstream of the PORV is at the same pressure as the PRT. Assume Containment pressure is 15 psia. Convert PRT pressure from psig to psia:

- PRT pressure = 5 psig + 15 psi = 20 psia.
- From Steam Table 2 (or the Mollier Diagram),
- Tsat (20 psia) = 228 °F (approx. 230 °F).

Technical Reference: OP51.SYS.PP1.LN

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank # CPSES Modified _____
SYS.PP1.OB09-7 New _____

Question History: Last NRC Exam _____

Cognitive Level:

Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 5
55.43 _____

Comments:

RO/SRO TEST QUESTION #: 79

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>3.8.008.A2.04</u>	
Importance Rating	<u>3.3</u>	<u>3.5</u>

Proposed Question:

Unit 4 is operating at 100% power in normal alignment when the following events occur:

- A rupture develops in a RCP thermal barrier.
- ONE of the CCW PRMS monitors has just gone into alarm.
- CCW head tank level indicates 81%.
- CCW surge tank level reads 100%.
- CCW flow from RCP thermal barriers has increased to 110 gpm.

Which one of the following describes current condition of the CCW head tank vent valve, and RCP thermal barrier outlet?

- A. CCW head tank vent is open. RCP thermal barrier outlet is closed.
- B. CCW head tank vent is open. RCP thermal barrier outlet is open.
- C. CCW head tank vent is closed. RCP thermal barrier outlet is closed.
- D. CCW head tank vent is closed. RCP thermal barrier outlet is open.

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 5100 Modified
New

Question History: Last NRC Exam Turkey Point 4 (WEC), 8/7/1998

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43 5

Comments:

RO/SRO TEST QUESTION #: **80**

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

3

3

K/A #

3.4.045.K1.06

Importance Rating

2.6

2.6

Proposed Question:

When testing Main Steam Isolation Valve #1 (MSIV-1) from the control room, which of the following conditions will actuate the "MSIV #1 TEST FAILED" alarm?

- A. MSIV-1 fails to reach 90% open in 10 seconds or less.
- B. MSIV-1 fails to reach 90% open in 20 seconds or less.
- C. MSIV-1 closes 10% and fails to return to full open.
- D. MSIV-1 closes more than 10% during the test.

Proposed Answer: B

Explanation:

Technical Reference: OP51.SYS.MR1.OB20

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie

SYS.MR1.OB20-1

d

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content:	55.41	2,9
	55.43	

Comments:

RO/SRO TEST QUESTION #: 81

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>2.1.6</u>	
Importance Rating	<u>2.1</u>	<u>4.3</u>

Proposed Question:

The Unit 1 crew is in EOP-3.0A, Steam Generator Tube Rupture, due to a tube rupture on Steam Generator #3 when the STA reports that CET temperatures indicate 1250 °F. The crew transitions from EOP-3.0A to respond to the high CET temperatures when the BOP reports that all AFW flow has been lost and only the ruptured Steam Generator #3 has a level above 5% Narrow Range. Which of the following gives the correct operator action?

- A. Complete FRC-0.1A and then transition to FRH-0.1A (response to Loss of Secondary Heat Sink)
- B. Complete FRC-0.1A and then return to EOP-3.0A
- C. Transition immediately to FRH-0.1A and upon completion return to FRC-0.1A
- D. Transition immediately to FRH-0.1A and upon completion return to EOP-3.0A

Proposed Answer: B

Explanation:

Technical Reference: FRC-0.1, ODA-407

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #	CPSES FRC.XH2.OB404- 2	Modified
		New

Question History: Last NRC Exam _____

Cognitive Level:

<u> </u>	Memory or Fundamental Knowledge
<u> X </u>	Comprehension or Analysis

10 CFR Part 55 Content:

55.41	_____
55.43	<u>5</u>

Comments:

(originally #111)

SRO (ONLY) TEST QUESTION #: 82

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

2

Group #

3

3

K/A #

3.4.076.K2.01

Importance Rating

2.7

2.7

Proposed Question:

Which of the following components is powered from the safeguards 6.9 KV buses?

- A. CW pumps
- B. RCPs
- C. HDPs
- D. SSW pumps

Proposed Answer: D

Explanation:

Technical Reference: E1-0003, E1-0004

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES
SYS.AC2.OB03 -
004

Modified

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7

55.43

Comments:

RO/SRO TEST QUESTION #: 83

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>3.4.045.K4.47</u>	
Importance Rating	<u>4.0</u>	<u>4.3</u>

Proposed Question:

The Technical Specification basis for the P-4 interlock is:

- A. The P-4 interlock anticipates a loss of heat sink.
- B. The P-4 interlock protects against severe challenges to the electrical distribution system resulting from fluctuating steam pressures.
- C. The P-4 interlock is not required by Technical Specifications.
- D. The P-4 interlock protects the reactor from excessive cooldown.

Proposed Answer: C

Explanation:

Technical Reference: TS 3.3.1 bases

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified X
New

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content: 55.41
55.43 2

Comments:

SRO (ONLY) TEST QUESTION #: 84

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>4</u>	<u>4</u>
K/A #	<u>2.4.43</u>	
Importance Rating	<u>2.8</u>	<u>3.5</u>

Proposed Question:

An ALERT was upgraded to a SITE AREA EMERGENCY at 2 pm. What is the LATEST time allowed to report this change to the NRC?

- A. 3:30 pm
- B. 2:15 pm
- C. 2:30 pm
- D. 3:00 pm

Proposed Answer: D

Explanation:

Technical Reference: 10 CFR 50.72

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified X
New

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
Comprehension or Analysis

10 CFR Part 55 Content: **55.41** _____
55.43 1, 5

Comments:

(originally #112)

SRO (ONLY) TEST QUESTION #: 85

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>3</u>	<u>2</u>
K/A #	<u>3.5.028.K5.02</u>	
Importance Rating	<u>3.4</u>	<u>3.9</u>

Proposed Question:

The following conditions exist:

- The plant was operating at 100% power, when a Large Break LOCA to Containment occurred
- Containment Hydrogen is 1%
- Water level in the Reactor Core is 50% (half the fuel is exposed)

Which ONE of the following will make hydrogen conditions in containment worse?

- A. Water level in the reactor core increasing from 50% to 90% level
- B. Instrument air leak to containment
- C. Excessive leakage from containment thru the Containment Vacuum Breakers
- D. Exit Thermocouples at 1800 degrees F and rising

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination: _____

Learning Objective: _____

Question Source: Bank # INPO 10850 Modified
New

Question History: Last NRC Exam Kewaunee 1 (WEC), 12/18/1997

Cognitive Level: Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 5
55.43

Comments:

RO/SRO TEST QUESTION #: **86**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u>2</u>
Group #	<u>3</u>	<u>2</u>
K/A #	<u>3.5.028.K6.01</u>	
Importance Rating	<u>2.6</u>	<u>3.1</u>

Proposed Question:

The temperature of the air mixture in the containment hydrogen recombiners is controlled by:

- A. cycling the recombiner electric heaters on and off to maintain temperature in the proper band.
- B. regulating the air flow at the discharge of the recombiner used to preheat the inlet flow.
- C. varying the power to the recombiner electric heaters.
- D. regulating the air flow at the inlet of the recombiner.

Proposed Answer: C

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 5355 Modified
New

Question History: Last NRC Exam Salem 1 (WEC), 1/22/1996

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43

Comments:

RO/SRO TEST QUESTION #: **87**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>2.1.16</u>	
Importance Rating	<u>2.9</u>	<u>2.8</u>

Proposed Question:

Select the statement that describes why portable radios should not be used in "Radio Free Zones."

- A. Radio transmission interferes with security radios in the event of a security plan implementation.
- B. Radio frequencies may inadvertently interfere with CENTREX equipment.
- C. Radios are useless in these areas due to signal reception difficulties.
- D. Radios produce electromagnetic interference (EMI) that may cause inadvertent equipment operation.

Proposed Answer: D

Explanation:

Technical Reference: _____

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 5417 Modified
New

Question History: Last NRC Exam Salem 1 (WEC), 1/22/1996

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 10
55.43

Comments:

RO/SRO TEST QUESTION #: **88**

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

3

3

Group #

1

1

K/A #

2.1.18

Importance Rating

2.9

3.0

Proposed Question:

The NRC must be notified in writing within 30 days if a licensed operator is convicted of a felony. Which of the following is responsible for notifying the NRC of the conviction?

- A. The licensed individual.
- B. The Manager, Operations.
- C. The Plant Manager.
- D. Vice President, Nuclear Operations.

Proposed Answer: A

Explanation:

Technical Reference: STA-501

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank #

CPSES

Modified

ADM.XA7.OB01-2

New

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10

55.43

Comments:

RO/SRO TEST QUESTION #: 89

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>1</u>	<u>1</u>
K/A #	<u>2.1.24</u>	
Importance Rating	<u>2.8</u>	<u>3.1</u>

Proposed Question:

Given drawing E1-0057 Sheet 16, determine which of the following signals will generate an open signal to Fan 9 Isolation Damper 1-HV-5953.

- A. Energizing the 42 relay.
- B. Energizing the 1-HX-5952 relay.
- C. Energizing the 1-42AX/5952 relay.
- D. Energizing the 74 relay.

Proposed Answer: B

Explanation:

Technical Reference: E1-0057 sheet 16

Proposed references to be provided to applicants during examination:

E1-0057 sheet 16

Learning Objective: _____**Question Source:**

Bank #

CPSES
SYS.HV2.OB07-1

Modified

New

Question History:

Last NRC Exam

Cognitive Level:

 Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content:

55.41

7

55.43

Comments:

RO/SRO TEST QUESTION #: 90

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>2.2.3</u>	
Importance Rating	<u>3.1</u>	<u>3.3</u>

Proposed Question:

Identify the unit difference of the Process Sampling System.

- A. Unit 1 sample coolers are supplied by Train A CCW while Unit 2 sample coolers are supplied by Train B CCW.
- B. Unit 2 sampling valves all fail open.
- C. Unit 1 sample hood purge flow is directed to FDT #3.
- D. Spent Fuel Pool demineralizers sample is taken on Unit 1 side.

Proposed Answer: D

Explanation:

Technical Reference: OP51.SYS.PA2.OB21

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank	CPSES	Modified
#	<u>SYS.PA2.OB21-1</u>	<u> </u>
		New <u> </u>

Question History: Last NRC Exam

Cognitive Level: X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 7
55.43 7

Comments:

RO/SRO TEST QUESTION #: **91**

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>2.2.22</u>	
Importance Rating	<u>3.4</u>	<u>4.1</u>

Proposed Question:

With Unit 2 operating in MODE 2, which one of the following renders an Auxiliary Feedwater Pump INOPERABLE?

- A. Leaving AFWT speed control (2-SK-2452A) at 0% output.
- B. AFW suction lined up to Station Service Water.
- C. Safeguards Bus 2EA2 powered from alternate transformer XST2 (2EA2-2 closed).
- D. A flow control valve from the motor driven pumps fully shut while transferring from AFW to the Main Feed Bypass Control valves.

Proposed Answer: A

Explanation:

Technical Reference: TS 3.7.5

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
SYS.AF1.OB29 -
005

Modified

New

Question History: Last NRC Exam

Cognitive Level:

 Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41
55.43 2

Comments:

SRO (ONLY) TEST QUESTION #: 92

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>2.2.23</u>	
Importance Rating	<u>2.6</u>	<u>3.8</u>

Proposed Question:

The plant is operating at 100% power. The TDAFW Pump is being started up for testing. While the pump is operating, a significant break develops in one of the steam supply lines to the pump. The control room responds to MCB alarms and fire panel alarms and isolates the leak by closing both HV-2452-1 and HV-2452-2 (TDAFWP Steam Supplies). The steam supply is further isolated by closing the manual Isolation Valves for steam supplies. Under these conditions, the plant:

- A. can continue to operate as long as the remaining AFW pumps are verified to be OPERABLE within 8 hours and at least once per 31 days.
- B. can continue to operate, but the steam supplies must be restored to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- C. can continue to operate for up to 72 hours, by which time the break must be repaired and the pump returned to operable status, or be in at least HOT STANDBY within 6 hours and in HOT SHUTDOWN in the following 6 hours.
- D. must be shut down to HOT STANDBY within the next six hours and to HOT SHUTDOWN within the following six hours.

Proposed Answer: C

Explanation:

Technical Reference: TS 3.7.5

Proposed references to be provided to applicants during examination:

Learning Objective:**Question Source:**

Bank #

CPSES
SYS.AF1.OB29 -
010

Modified

New **Question History:**Last NRC Exam **Cognitive Level:**

 Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:**55.41****55.43**2**Comments:**

SRO (ONLY) TEST QUESTION #: 93

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>2</u>	<u>2</u>
K/A #	<u>2.2.11</u>	
Importance Rating	<u>2.5</u>	<u>3.4</u>

Proposed Question:

With regard to Temporary Modifications (TMs), select the correct statement from the following:

- A. The Operations Manager shall approve all TMs.
- B. For TMs on systems that are in the custody of Operations, the Shift Manager shall approve the TM after installation.
- C. If SORC did not review an expedited TM prior to installation, then a post-installation review of the TM shall be required.
- D. When a TM requires a 10CFR 50.59 evaluation, the SORC shall approve the TM within 30 days of installation.

Proposed Answer: C

Explanation:

Technical Reference: STA-602, Sect 6.15.6

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
ADM.XA1.OB605-
004

Modified

New

Question History:

Last NRC Exam

Cognitive Level:

 X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content:

55.41 10
55.43 3

Comments:

SRO (ONLY) TEST QUESTION #: 94

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>2.3.2</u>	
Importance Rating	<u>2.5</u>	<u>2.9</u>

Proposed Question:

Given the following:

-A point source in the auxiliary building is generating the following radiation field:

-500 mRem/hr at two (2) feet.

-125 mRem/hr at four (4) feet.

- 32 mRem/hr at eight (8) feet.

TWO (2) options exist to complete a mandatory assignment near this radiation source:

-OPTION 1: Operator X can perform the assignment in thirty minutes working at a distance of FOUR (4) feet from the point source.

-OPTION 2: Operators Y and Z, using a special extension tool can perform the same task in 75 minutes at a distance of EIGHT (8) feet from the point source.

WHICH ONE (1) of the following choices is the preferred option to complete the assignment, per the facility ALARA plan?

- A. Option 1 as it results in the lowest total dose.
- B. Option 1 as it results in the lowest individual dose.
- C. Option 2 as it results in the lowest total dose.
- D. Option 2 as it results in the lowest individual dose.

Proposed Answer: A

Explanation:

Technical Reference: EPP-305, STA-651

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # INPO 4399 Modified
New

Question History: Last NRC Exam

Cognitive Level: Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 12
55.43 4

Comments:

SRO (ONLY) TEST QUESTION #: 95

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>3</u>	<u>3</u>
K/A #	<u>2.3.4</u>	
Importance Rating	<u>2.5</u>	<u>3.1</u>

Proposed Question:

After fuel handling tools and equipment have contacted the refueling water they must:

- A. remain wetted or be relubricated prior to their next usage.
- B. be flushed with demineralized water to remove boric acid before their next usage.
- C. be considered as radioactively contaminated and either not be touched or protective clothing used before touching.
- D. be flushed with demineralized water to remove radioactive contamination before touching.

Proposed Answer: C

Explanation:

Technical Reference: RFO-302

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
RFO.FH5.OB100
- 008

Modified

New

Question History:

Last NRC Exam

Cognitive Level:

 X Memory or Fundamental Knowledge
 Comprehension or Analysis

10 CFR Part 55 Content:

55.41 12
55.43 4

Comments:

SRO (ONLY) TEST QUESTION #: 96

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>4</u>	<u>4</u>
K/A #	<u>2.4.39</u>	
Importance Rating	<u>3.3</u>	<u>3.1</u>

Proposed Question:

You are a licensed Reactor Operator on dayshift, working on outage tagouts in the Work Control Center. You do not have assigned responsibilities in the Emergency Response Organization (ERO). A transient occurs that results in the declaration of an ALERT Emergency and activation of the Evacuation Alarm. To which of the following locations do you report?

- A. The Technical Support Center (TSC).
- B. The Emergency Operations Facility (EOF).
- C. The Control Room.
- D. The Operations Support Center (OSC).

Proposed Answer: C

Explanation:

Technical Reference: CPSES/EP

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source: Bank # _____ Modified New X

Question History: Last NRC Exam _____

Cognitive Level: X Memory or Fundamental Knowledge
 _____ Comprehension or Analysis

10 CFR Part 55 Content: **55.41** 10
55.43 5

Comments:

RO/SRO TEST QUESTION #: 97

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>4</u>	<u>4</u>
K/A #	<u>2.4.46</u>	
Importance Rating	<u>3.5</u>	<u>3.6</u>

Proposed Question:

During refueling operations, radiation levels increase to alarm setpoint in the Spent Fuel Pool area. Which one of the choices below is a correct response to the present conditions?

- A. Close the AB 810 roll-up door
- B. Bypass and isolate the SFP demineralizers.
- C. Ensure fuel transfer car is in Containment..
- D. Begin makeup to the pool.

Proposed Answer: A

Explanation:

Technical Reference: ABN-908

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank # CPSES Modified
RFO.SYE.OB201
- 003
New _____

Question History: Last NRC Exam _____

Cognitive Level:

_____ Memory or Fundamental Knowledge
X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 _____
55.43 5, 7

Comments:

SRO (ONLY) TEST QUESTION #: 98

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

3

3

Group #

4

4

K/A #

2.4.47

Importance Rating

3.4

3.7

Proposed Question:

Given the following conditions:

- The crew is performing a reactor startup.
- The RO has just pulled the control rods several steps and is waiting for source range counts to stabilize.

Assuming the reactor is very close, but not yet critical, source range counts should:

- A. stop increasing and stabilize immediately, with SUR dropping to zero.
- B. begin to slowly decrease, with SUR gradually decreasing to zero.
- C. continue to increase, but at a slower rate, with SUR stabilizing at a lower positive value.
- D. continue to increase for a short period of time, then plateau, with SUR decreasing to zero.

Proposed Answer: D

Explanation:

Technical Reference: IPO-002, SECTION 5.2

Proposed references to be provided to applicants during examination:

Learning Objective:

Question Source:

Bank
#

CPSES

Modifie

SYS.EC1.OB13-3

d

New

Question History: Last NRC Exam

Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content:

55.41

10

55.43

5

Comments:

RO/SRO TEST QUESTION #: 99

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>3</u>	<u>3</u>
Group #	<u>4</u>	<u>4</u>
K/A #	<u>2.4.25</u>	
Importance Rating	<u>2.9</u>	<u>3.4</u>

Proposed Question:

Mechanical Maintenance has a work package to repack the isolation valve for the Fire Hose Station on the west wall of the Main Control Room located just outside the kitchen area. What compensatory actions, if any, must be taken?

- A. Station a continuous Fire Watch in the Control Room.
- B. Place a gated wye with sufficient length of fire hose on the hose station on the east wall of the Control Room within one hour.
- C. Place a gated wye with sufficient length of fire hose on the hose station at the foot of the steps between Unit #1 Cable Spread Room and the Control Room within 48 hours.
- D. Station a Fire Watch to make hourly patrols in the Control Room .

Proposed Answer: B

Explanation:

Technical Reference: STA-738

Proposed references to be provided to applicants during examination:

Learning Objective: _____

Question Source:

Bank #

CPSES
SYS.FP1.OB501 -
 006

Modified

New

Question History: Last NRC Exam

Cognitive Level:

 Memory or Fundamental Knowledge
 X Comprehension or Analysis

10 CFR Part 55 Content:

55.41 10
55.43 5

Comments:

SRO (ONLY) TEST QUESTION #: 100