NIAGARA MOHAWK POWER CORPORATION
OPERATOR JOB PERFORMANCE MEASURE

Title: Water Chemistry Operating Limits Determination (SRO ONLY) Revision: 0

Task Number: 341-022-03-03-2

Approvals:

2-1-00
General Supervisor Operations Training (Designee) Date

2-1-00
General Supervisor Operations (Designee) Date

NA NRC EXAM
Configuration Control Date

Performer:_____(SRO)

Trainer/Evaluator:_____

Evaluation Method: _____Perform ____X__Simulate

Evaluation Location: _____Plant _____Simulator

Expected Completion Time: 8 minutes Time Critical Task: NO Alternate Path Task: NO

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

JPM Overall Rating: Pass Fail

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

Comments:

Evaluator Signature:_____ Date:_____

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

Plant Control Room

Simulator Set-up:

N/A

Directions to the Instructor/Evaluator:

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

Directions to Operators:

Read Before Every JPM Performance:

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

Read Before Each Evaluated JPM Performance:

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

Read Before Each Training JPM Performance:

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

Notes to Instructor / Evaluator:

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

References:

1. GAP-CHE-01, Rev 02, BWR Water Chemistry Operating Limits
2. T.S. 3.4.4
3. T.S. Table 3.4.4-1
4. NUREG
   K/A 2.1.33 (4.0)
   K/A 2.1.34 (2.9)

Tools and Equipment:

1. None.

Task Standard:

Determine that the Action Level 2 guidelines of GAP-CHE-01, Enclosure 2, for reactor water conductivity are exceeded. Determines a unit shutdown to COLD SHUTDOWN is required if the parameter is NOT below the limit within 24 hours from the time of occurrence.

Initial Conditions:

1. The unit is at 50% power. There are no equipment inoperabilities.

"(Operator's name), Chemistry has called the Control Room and informed you that reactor coolant system conductivity is 1.2 umho/cm @25°C. Evaluate plant chemistry and take any necessary actions based on your evaluation."

Performance Steps	*Standard*	*Grade*	*Comments*
1. Provide repeat back of initiating cue. *Evaluator Acknowledge repeat back providing correction if necessary*	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat	
RECORD START TIME _____			
•2. Obtain a copy of the reference procedure and/or Tech Specs and review/utilize the correct section of the procedure/Tech Specs.	GAP-CHE-01 Enclosure 2 referenced. Tech Spec 3.4.4 and Table 3.4.4-1 referenced.	Sat/Unsat	
•3. If an action level of Enclosure 2 is exceeded, then take the actions as applicable.	Determine action level 2 is exceeded *(>1.0)* GAP-CHE-01 Section 3.2.2, Action Level 2 value exceeded, referenced.	**Pass/Fail**	
•3. Notify the Chemistry Manager, SSS, Operations Manager, Plant Manager, and Engineering Services Branch Manager of the parameter that has exceeded Action Level 2 limits. **Cue: As the Chemistry Manager, SSS, Operations Manager, Plant Manager and Engineering Services Branch Manager acknowledge the report.**	Notifies: • Chemistry Supervisor • SSS • Operations Manager • Plant Manager • Engineering Services Branch Manager Note: Simulated unless in the simulator.	Sat/Unsat	

Performance Steps	*Standard*	*Grade*	*Comments*
•4. If the parameter exceeds a Tech Spec limit, then take the Tech Spec actions. **Cue: If asked, the last reported conductivity 4 hours ago was 0.8 umho/cm @25°C.** **Cue: If asked, this is the first time this year that the Tech Spec 3.4.4 limits are NOT met.**	Tech Table 3.4.4-1 referenced. Determines conductivity limit is exceeded. Determines if conductivity is not within limits in 72 hours, then the unit must be in at least HOT SHUTDOWN within the following 6 hours (78 hours from entry into the Tech Spec actions). Note: The requirement is to be in STARTUP within the following 6 hours, however, since there are no provisions to proceed to startup the correct action is to be in MODE 3 within the same allotted time to meet the requirement.	Sat/Unsat	
•5. If the parameter is a fuel warranty parameter, then immediately notify fuels and management.	Determines NO fuel warranty limit is exceeded.	Sat/Unsat	
•6. If individual cond. Demin. outlet conductivity is above the limit, then remove the demin. from service.	Determines NO cond. demin. outlet limit is exceeded.	Sat/Unsat	
•7. If condensate demineralizer inlet conductivity is above the limit, then isolate the affected waterbox.	Determines NO condensate demineralizer inlet limit is exceeded.	Sat/Unsat	

Performance Steps	*Standard*	*Grade*	*Comments*
•8. If the parameter is NOT below the Action Level 2 limit within 24 hours, initiate an orderly shutdown to place the unit in COLD SHUTDOWN. **Cue: If asked, parameter will NOT be restored below limit for 48 hours.** **Cue: If asked, operation at lower power will NOT reduce exposure of components to the parameter.**	Determines that a shutdown must be initiated when 24 hours expires. Determines the plant must be placed in COLD SHUTDOWN as rapidly as operating conditions permit. Note: The candidate may take the conservative action and start a shutdown before 24 hours expires.	**Pass/Fail**	
•9. After the unit is shutdown, identify the cause, correcti ve actions, and receive SORC approval prior to restart.	Recognizes a root cause is required after shutdown. Recognize SORC approval is required for restart.	Sat/Unsat	

End of JPM

TERMINATING CUE: Determines a unit shutdown to COLD SHUTDOWN is required if the parameter is NOT below the limit within 24 hours from the time of occurrence.

RECORD STOP TIME_____

Work Practice Competency		*Standard*	*Grade*	*Comments*
a.	Communications	Per GAP-OPS-O1	Sat/Unsat	
b.	Verification of Actions	Per OPS Reference Manual (Unit 1) Per N2-ODP-OPS-0001 (Unit 2)	Sat/Unsat	
c.	Procedural Compliance/ Placekeeping	Per OPS Reference Manual (Unit 1) Per NIP-PRO-01/N2-ODP-OPS-0001 (Unit 2)	Sat/Unsat	
d.	Safety Compliance	Per NIP-OSH-01 (Unit 1) Per NIP-OSH-01/N2-ODP-OPS-0106 (Unit 2)	Sat/Unsat	
e.	Radiation Protection Compliance	Per GAP-RPP-01 Per GAP-RPP-02 Per NDD-ALA.	Sat/Unsat	

NOTE: UNSAT in any competency area requires oral remediation of unsat area and/or reevaluation of work practices using the Work Practices JPM (O1-OPS-WPJ-1-00 / O2-OPS-SJE-WPJ-2-00).

Initial Conditions:

The unit is at 50% power. There are no equipment inoperabilities.

"(Operator's name), Chemistry has called the Control Room and informed you that reactor coolant system conductivity is 1.2 umho/cm @25°C.

Evaluate plant chemistry and take any necessary actions based on your evaluation."

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Shift Turnover
Question Number:	1

Question:

Use <u>today's date</u>.
Assume you are 42 years old when answering this question.

Evaluate the following information and determine what requirements, if any, must be met before you fill a SSS position on April 1, 2000.

- You filled a shift SSS position last year until December 1, when you were assigned to Operations Support until the end of the year. Since the assignment, you have stood the following 12-hour watches as SSS:

  December: Three (3) 12-hour watches
  January: Three (3) 12-hour watches
  February: NO watches
  March: NO watches and none scheduled

- Medical exam and respiratory physical is completed on 11/30/99. Documented in accordance with station procedures on 11/30/99.

- SCBA and Scott full-face qualification including a fit-test for each is completed on 9/6/99. Documented in accordance with station procedures on 9/10/99.

- With the exception of completing the remediation for a requal cyclic written exam failure last Friday, you have completed all training and passed all other evaluations.

SAT **UNSAT**

Answer:

Must complete the training remediation, then stand at least two (2) 12-hour watches as the CRS or SSS by March 31, 2000.

Technical Reference(s):
S-ODP-TQS-0101, Rev 01 Section 3.10, 4.2, 4.4

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Shift Turnover
Question Number:	1

K/A #:	Importance:
2.1.3	3.4

Comments:
NRC Comment: Add "if any" to the question stem. Are plant management approval and a plant walkthrough required also? NMP2 Response: Added "if any" to the question stem. Management approval and walkthrough are not required since the license never becomes inactive if the requirements to stand the watch when requested are fulfilled.

Question: CANDIDATE COPY

Use today's date.
Assume you are 42 years old when answering this question.

Evaluate the following information and determine what requirements, if any, must be met before you fill a SSS position on April 1, 2000.

- You filled a shift SSS position last year until December 1, when you were assigned to Operations Support until the end of the year. Since the assignment, you have stood the following 12-hour watches as SSS:

December:	Three (3) 12-hour watches
January:	Three (3) 12-hour watches
February:	NO watches
March:	NO watches and none scheduled

- Medical exam and respiratory physical is completed on 11/30/99. Documented in accordance with station procedures on 11/30/99.

- SCBA and Scott full-face qualification including a fit-test for each is completed on 9/6/99. Documented in accordance with station procedures on 9/10/99.

- With the exception of completing the remediation for a requal cyclic written exam failure last Friday, you have completed all training and passed all other evaluations.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Shift Turnover
Question Number:	2

Question:

This question is closed book and must be answered from memory.

The plant is operating at 60% power. You have just taken turnover and assumed the night shift watch as the SSS. Total night shift compliment following turnover is:

Position	Current Staffing
SSS	1
ASSS	1
Licensed Operator	2
Non-Licensed Operator	3
STA	1
RP Technician	2
Chemistry Technician	1
Site Fire Brigade	5

At the shift brief, one of the Reactor Operators faints and is not able to fulfill the function of the reactor operator. What actions are required?

SAT **UNSAT**

Answer:

Immediately initiate action to fill the vacant RO position within 2 hours.

Technical Reference(s):

GAP-OPS-01, Rev 11
T.S. 6.2.2, T.S. Table 6.2.2-1

K/A #:	Importance:
2.1.1, 2.1.3, 2.1.4, 2.1.5	3.8, 3.4, 3.4, 3.4

Comments:
NRC Comment: Good question, but looks like a direct lookup. Consider making it closed book. NMP2 Response: Made the question a closed book question.

Question: CANDIDATE COPY

This question is closed book and must be answered from memory.

The plant is operating at 60% power. You have just taken turnover and assumed the night shift watch as the SSS. Total night shift compliment following turnover is:

Position	Current Staffing
SSS	1
ASSS	1
Licensed Operator	2
Non-Licensed Operator	3
STA	1
RP Technician	2
Chemistry Technician	1
Site Fire Brigade	5

At the shift brief, one of the Reactor Operators faints and is not able to fulfill the function of the reactor operator. What actions are required?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Startup Requirements
Question Number:	1

Question:

During a reactor startup using control rod sequence A2UP, the ATC RO notices that during the performance of RWM step 4, control rod 26-07 (RWM Step 3) is at position 02. The Reactor Operator reports that he failed to move the rod to position 04 when positioning it.

Classify the Reactivity Management Event?

SAT **UNSAT**

Answer:

Severity Level 2 Event **OR** Reactivity Event

Technical Reference(s):
GAP-OPS-05, Rev 02 Section 3.13, Section 4.8

K/A #:	Importance:
2.2.1, 2.2.35	3.6, 3.2

Comments:

Question: CANDIDATE COPY

During a reactor startup using control rod sequence A2UP, the ATC RO notices that during the performance of RWM step 4, control rod 26-07 (RWM Step 3) is at position 02. The Reactor Operator reports that he failed to move the rod to position 04 when positioning it.

Classify the Reactivity Management Event?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Startup Requirements
Question Number:	2

Question:

A reactor startup is in progress using control rod sequence A2UP. You have completed moving control rods in RWM Step 4. Prior to and while moving control rods in RWM Step 5, what actions are taken by the Reactor Operator to ensure control rods are moved to the correct position?

SAT **UNSAT**

Answer:

Prior to commencing a new page (i.e., RWM Step 5):

- Update the final rod position (posted by the 4-rod display) with the final position of the control rods in RWM Step 5.
- Reactor Operator and verifier initial above the appropriate "TO" position for RWM Step 5 on the Control Rod Sequence Sheet.

Conduct rod movements using the Control Rod Sequence Sheets.

- RO verbalizes intended actions including selected rod, initial position, and final position. Intended actions (selection and positioning) are verified and verbally acknowledged by an additional qualified individual (verifier).

Technical Reference(s):
GAP-OPS-05, Rev 02 Section 3.4

K/A #:	Importance:
2.1.2, 2.2.1, 2.2.36	4.0, 3.6, 3.2

Comments:

Question: CANDIDATE COPY

A reactor startup is in progress using control rod sequence A2UP. You have completed moving control rods in RWM Step 4. Prior to and while moving control rods in RWM Step 5, what actions are taken by the Reactor Operator to ensure control rods are moved to the correct position?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Security
Question Number:	1

Question:

During an outage, with the plant in Mode 4, you are directed to hang a Markup on feedwater valves in the Steam Tunnel. The area is **NOT** de-vitalized.

What are your security responsibilities prior to, during and following completion of this task?

SAT **UNSAT**

Answer:

Permission to access the Steam Tunnel must be obtained from Radiation Protection prior to obtaining the key. The key is obtained from SSS (done by getting the key from the locked key cabinet and completing the sign out log).

Once an individual has the key they must maintain it in their possession and no one else is allowed to use the key.

The key may NOT leave the protected area and must be returned at the end of the shift or completion of the task whichever is sooner.

Technical Reference(s):

NIP-SEC-02,
Sections 3.2.3, 3.2.6, 3.2.7
GAP-OPS-01, Section 3.7.4

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Security
Question Number:	1

K/A #:	Importance:
2.1.2, 2.3.10	4.0, 3.3

Comments:
NRC Comment: Direct Lookup NMP2 Response: Changed question stem. The candidate must determine the status of the steam tunnel for the conditions provided and then associate the security measures that must be followed based on this determination.

Question: CANDIDATE COPY

During an outage, with the plant in Mode 4, you are directed to hang a Markup on feedwater valves in the Steam Tunnel. The area is **NOT** de-vitalized.

What are your security responsibilities prior to, during and following completion of this task?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	SRO
Administrative Topic	A.1
Subject Description:	Security
Question Number:	2

Question:

An AO reports that during a plant tour they discovered tape on the door latch for the Division I Emergency Switchgear Room. This tape prevented the door from locking. Upon additional inspection the AO observed the close fuses have been removed from each of the breakers in the room. As the Station Shift Supervisor, regarding station security what initial actions are required?

SAT **UNSAT**

Answer:

Notify Security

Declare a Site Area emergency per EPIP-EPP-02, Sect. 8.1.3

Enter EPIP-EPP-10, Security Contingency Event

Initiate events to place the plant in a safe condition

Technical Reference(s):
EPIP-EPP-02 EPIP-EPP-10 EPMP-EPP-0102, Sect. 8.1.3

K/A #:	Importance:
2.1.2, 2.3.10	4.0, 3.3

Comments:

Question: CANDIDATE COPY

An AO reports that during a plant tour they discovered tape on the door latch for the Division I Emergency Switchgear Room. This tape prevented the door from locking. Upon additional inspection the AO observed the close fuses have been removed from each of the breakers in the room. As the Station Shift Supervisor, regarding station security what initial actions are required?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.1
Subject Description:	Shift Turnover
Question Number:	1

Question:

Use <u>today's date</u>.
Assume you are 42 years old when answering this question.

Evaluate the following information and determine what requirements, if any, must be met before you fill a CSO position on April 1, 2000.

- You filled a shift CSO position last year until December 1, when you were assigned to Operations Support until the end of the year. Since the assignment, you have stood the following 12-hour watches as CSO:

  December: Three (3) 12-hour watches
  January: Three (3) 12-hour watches
  February: NO watches
  March: NO watches and none scheduled

- Medical exam and respiratory physical is completed on 1/31/00. Documented in accordance with station procedures on 1/31/00.

- SCBA and Scott full-face qualification including a fit-test for each is completed on 9/6/99. Documented in accordance with station procedures on 9/10/99.

- With the exception of completing the remediation for a requal cyclic written exam failure last Friday, you have completed all training and passed all other evaluations.

SAT **UNSAT**

Answer:

Must complete the training remediation, then stand at least two (2) 12-hour watches as the RO or CSO by March 31, 2000.

Technical Reference(s):
S-ODP-TQS-0101, Rev 01 Section 3.10, 4.2, 4.4

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.1
Subject Description:	Shift Turnover
Question Number:	1

K/A #:	Importance:
2.1.3	3.0

Comments:
NRC Comment: Add "if any" to the question stem. Are plant management approval and a plant walkthrough required also? NMP2 Response: Added "if any" to the question stem. Management approval and walkthrough are not required since the license never becomes inactive if the requirements to stand the watch when requested are fulfilled.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.1
Subject Description:	Shift Turnover
Question Number:	2

Question:

Following 4 days off, you work dayshift (12-hour shifts) for 5 consecutive days, Thursday through Monday. You are called Monday night and asked to come in and work 12 hours on Tuesday day-shift. Your next scheduled shift is Friday on dayshift (0600).

Determine if it is acceptable to work Tuesday including why or why not.

SAT **UNSAT**

Answer:

The individual can work 12 hours on Tuesday.
Wednesday must be a day off. Upon completion of work Tuesday, the worker will have worked 72 hours in a 6-day period. The limit is 72 hours in any 7-day period.

Technical Reference(s):
GAP-FFD-02, Section 3.2

K/A #:	Importance:
2.1.1	3.7

Comments:

Question: CANDIDATE COPY

Following 4 days off, you work dayshift (12-hour shifts) for 5 consecutive days, Thursday through Monday. You are called Monday night and asked to come in and work 12 hours on Tuesday day-shift. Your next scheduled shift is Friday on dayshift (0600).

Determine if it is acceptable to work Tuesday including why or why not.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.1
Subject Description:	Startup Requirements
Question Number:	1

Question:

A reactor startup is in progress using Startup Control Rod Sequence A2UP. SRM readings recorded prior to the startup:

SRM A = 130 cps *SRM B = 120 cps*
SRM C = 100 cps *SRM D = 110 cps*

RWM Step 8 was just completed. SRM count rates are:

SRM A = 1920 cps *SRM B = 1900 cps*
SRM C = 1800 cps *SRM D = 1610 cps*

What rod movement restrictions apply to control rods in RWM step 9?

SAT **UNSAT**

Answer:

When any SRM count rate reaches four doublings (SRM C is beyond four doubles), control rod withdrawals shall be performed in the single notch mode until the reactor is critical, unless otherwise recommended by the Reactor Engineer.

Technical Reference(s):
N2-OP-101A, Section 2.13.15

K/A #:	Importance:
2.2.1	3.7
2.2.2	4.0
2.2.34	2.8

Comments:

NRC Comment: Make SRM "C" beyond 4 doubles, not SRM "A".

NMP2 Response: Made SRM "C" beyond 4 doubles, not SRM "A".

Question: CANDIDATE COPY

A reactor startup is in progress using Startup Control Rod Sequence A2UP.
SRM readings recorded prior to the startup:

SRM A = 130 cps *SRM B = 120 cps*
SRM C = 100 cps *SRM D = 110 cps*

RWM Step 8 was just completed. SRM count rates are:

SRM A = 1920 cps *SRM B = 1900 cps*
SRM C = 1800 cps *SRM D = 1610 cps*

What rod movement restrictions apply to control rods in RWM step 9?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.1
Subject Description:	Startup Requirements
Question Number:	2

Question:

A reactor startup is in progress using Startup Control Rod Sequence A2UP; currently performing RWM step 9. Control rod 34-55 is withdrawn to position 18 and the reactor is declared critical. When the reactor criticality data is recorded, the doubling time is 40 seconds.

What actions are required?

SAT **UNSAT**

Answer:

Insert control rod 34-55 to position 14.
Notify the CRS.
Request further direction from Reactor Engineering.

Note: the reactor period is less than 60 seconds requiring operator action. The requirement is to insert the last control rod wihdrawn one notch past its previous position. The previous position was 16.

Technical Reference(s):

Ref: N2-OP-101A, Section 2.18

K/A #:	Importance:
2.1.23	3.9
2.2.1	3.7
2.2.2	4.0

Comments:

Question: CANDIDATE COPY

A reactor startup is in progress using Startup Control Rod Sequence A2UP; currently performing RWM step 9. Control rod 34-55 is withdrawn to position 18 and the reactor is declared critical. When the reactor criticality data is recorded, the doubling time is 40 seconds.

What actions are required?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.2
Subject Description:	Piping and Instrument Drawings
Question Number:	1

Question:

Using the PIDs and a highlighter, trace the Fire Protection Water flow path from the motor driven fire pump, 2FPW-P2, to the RPV using RHS Train A. 2RHS*MOV24A is available for injection. Indicate on the drawing(s) any EOP equipment installed to complete this flow path.

SAT **UNSAT**

Answer:

PID 43A, J-7	2FPW-P2, motor driven fire pump
PID 43A, L3, L-4	exit to PID 43B, K-3
PID 43B, K-3	fire water from PID 43A
PID 43B, I-4	exit to PID 43G, J-9
PID 43G, J-9	fire water from PID 43B
PID 43G, H-9	exit to PID 43F, E-9
PID 43F, E-9	fire water from PID 43G
PID 43F, G-6	disconnect fire hose from FHR (fire hose reel) 93 and connect EOP fire hose to FHR 93. Connect the EOP fire hose reel to Condensate Makeup and Transfer System blind flange (PID 4B, G-8)
PID 4B, G-8	fire water from PID 43F Blind flange for connecting EOP fire hose using equipment in EOP toolbox.
PID 4B, H-8	exit to PID 31A, A-1
PID 31A, A-1	fire water from PID 4B
PID 31A, C-5	fire water injection to the RPV using 2RHS*MOV24A

NOTE: It is not necessary to identify the valves on PIDs which are closed or verified closed to perform this evolution. (i.e., 2RHS*MOV33A [C-2] and 2RHS*MOV38A [B-6] on PID 31C, 2RHS*MOV12A [I-6] on PID 31D, 2RHS*MOV8A [B-3] on PID 31F).

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.2
Subject Description:	Piping and Instrument Drawings
Question Number:	1

Technical Reference(s):
N2-EOP-06, Att. 6, Rev 05, Section 3.1 PID 43A, B, G, F PID 4B PID 31A

K/A #:	Importance:
2.1.24	3.1

Comments:
NRC Comment: Is the identifying EOP equipment necessary? Develop so when answered it can be documented. NMP2 Response: We believe it is necessary to ensure required documentation is captured (a fire hose must be installed). The candidate is directed to highlight the flow path for documentation. A highlighted flow path will be provided to evaluate the candidate's response.

Question: CANDIDATE COPY

Using the PIDs and a highlighter, trace the Fire Protection Water flow path from the motor driven fire pump, 2FPW-P2, to the RPV using RHS Train A. 2RHS*MOV24A is available for injection. Indicate on the drawing(s) any EOP equipment installed to complete this flow path.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.2
Subject Description:	P&IDs
Question Number:	2

Question:

The plant is operating at power, when a LOCA signal is received.

Using RESIDUAL HEAT REMOVAL PRINT PID-31A-13, describe how the motor operated Testable Check Bypass Valve RHS*MOV67B is lined up during power operations and how the valve will respond to the LOCA signal.

SAT **UNSAT**

Answer:

Valve is closed and will remain closed.
Per Note 9, The power supplies to the motor operator are opened to preclude spurious actuation during a control room fire.

Technical Reference(s):
PID-31A-13, Note 9

K/A #:	Importance:
2.1.24	3.1

Comments:

NRC Comment: Delete the reference to using PID 31A-13, and let the candidate use prints and/or procedure references to answer the question.

NMP2 Response: We prefer to keep the question specific to PID use which is necessary to evaluate the desired knowledge.

Question: CANDIDATE COPY

The plant is operating at power, when a LOCA signal is received.

Using RESIDUAL HEAT REMOVAL PRINT PID-31A-13, describe how the motor operated Testable Check Bypass Valve RHS*MOV67B is lined up during power operations and how the valve will respond to the LOCA signal.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 2
Examination Level	SRO
Administrative Topic	A.2
Subject Description:	Surveillance Testing
Question Number:	1

Question:

On 12/14/99 at 0000 hours, it is discovered that N2-OSP-RHS-Q@004, RHR SYSTEM LOOP A PUMP & VALVE OPERABILITY TEST AND ASME XI PRESSURE TEST, was last performed on 9/1/99 at 0000 hours. What approvals are required if the test cannot be performed within the next 48 hours?

SAT **UNSAT**

Answer:

The test cannot be completed before exceeding 1.15 times the surveillance interval, therefore Branch Manager approval is required.

The following is not required by the candidate to answer the question:

1. *On 12/2/99 at 0000, 92 days expired.*
2. *On 12/15/99 at 1912, 105.8 days expires (GAP-SAT-01, 15% extension)*
3. *On 12/25/99 at 0000, 1.15 days expires (25% extension)*

Technical Reference(s):

GAP-SAT-01, Rev 06
Section 3.2, Steps 3.2.3

K/A #:	Importance:
2.1.12, 2.2.12	4.0, 3.4

Comments:

Question: CANDIDATE COPY

On 12/14/99 at 0000 hours, it is discovered that N2-OSP-RHS-Q@004, RHR SYSTEM LOOP A PUMP & VALVE OPERABILITY TEST AND ASME XI PRESSURE TEST, was last performed on 9/1/99 at 0000 hours. What approvals are required if the test cannot be performed within the next 48 hours?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test:
Examination Level	SRO
Administrative Topic	A.2
Subject Description:	Surveillance Testing
Question Number:	2

Question:

During a refueling outage, the 2DER*MOV120, EQUIP DRAINS OUTBD ISOL VLV, is scheduled to have its disk and seat replaced. Following completion of the work, what testing is required?

SAT **UNSAT**

Answer:

- Stroke timing and exercise
- Full stroke freedom of movement verification
- Position Indication
- As-left leak rate

Technical Reference(s):

GAP-SAT-02, Rev 07, Section 3.2
GAP-SAT-02, Rev 07, Definition 4.12
GAP-SAT-02, Rev 07, Attachment 1
NIP-DES-04, Attachment 5
T.S. 4.6.1.2.2, Table 3.6.1.2-1

K/A #:	Importance:
2.1.12, 2.1.28, 2.1.33, 2.2.18, 2.2.21, 2.2.24	4.0, 3.3, 4.0, 3.6, 3.5, 3.8

Comments:

Question: CANDIDATE COPY

During a refueling outage, the 2DER*MOV120, EQUIP DRAINS OUTBD ISOL VLV, is scheduled to have its disk and seat replaced. Following completion of the work, what testing is required?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.2
Subject Description:	Piping and Instrument Drawings
Question Number:	1

Question:

Using the PIDs and a highlighter, trace the Fire Protection Water flow path from the motor driven fire pump, 2FPW-P2, to the RPV using RHS Train A. 2RHS*MOV24A is available for injection. Indicate on the drawing(s) any EOP equipment that is installed to complete this flow path.

SAT **UNSAT**

Answer:

PID 43A, J-7	2FPW-P2, motor driven fire pump
PID 43A, L3, L-4	exit to PID 43B, K-3
PID 43B, K-3	fire water from PID 43A
PID 43B, I-4	exit to PID 43G, J-9
PID 43G, J-9	fire water from PID 43B
PID 43G, H-9	exit to PID 43F, E-9
PID 43F, E-9	fire water from PID 43G
PID 43F, G-6	disconnect fire hose from FHR (fire hose reel) 93 and connect EOP fire hose to FHR 93. Connect the EOP fire hose reel to Condensate Makeup and Transfer System blind flange (PID 4B, G-8)
PID 4B, G-8	fire water from PID 43F Blind flange for connecting EOP fire hose using equipment in EOP toolbox.
PID 4B, H-8	exit to PID 31A, A-1
PID 31A, A-1	fire water from PID 4B
PID 31A, C-5	fire water injection to the RPV using 2RHS*MOV24A

NOTE: It is not necessary to identify the valves on PIDs which are closed or verified closed to perform this evolution. (i.e., 2RHS*MOV33A [C-2] and 2RHS*MOV38A [B-6] on PID 31C, 2RHS*MOV12A [I-6] on PID 31D, 2RHS*MOV8A [B-3] on PID 31F).

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.2
Subject Description:	Piping and Instrument Drawings
Question Number:	1

Technical Reference(s):
N2-EOP-06, Att. 6, Rev 05, Section 3.1 PID 43A, B, G, F PID 4B PID 31A

K/A #:	Importance:
2.1.24	2.8

Comments:
NRC Comment: Is the identifying EOP equipment necessary? Develop so when answered it can be documented. NMP2 Response: We believe it is necessary to ensure required documentation is captured (a fire hose must be installed). The candidate is directed to highlight the flow path for documentation. A highlighted flow path will be provided to evaluate the candidate's response.

Question: CANDIDATE COPY

Using the PIDs and a highlighter, trace the Fire Protection Water flow path from the motor driven fire pump, 2FPW-P2, to the RPV using RHS Train A. 2RHS*MOV24A is available for injection. Indicate on the drawing(s) any EOP equipment that is installed to complete this flow path.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.2
Subject Description:	P&IDs
Question Number:	2

Question:

The plant is operating at power, when a LOCA signal is received.

Using RESIDUAL HEAT REMOVAL PRINT PID-31A-13, describe how the motor operated Testable Check Bypass Valve RHS*MOV67B is lined up during power operations and how the valve will respond to the LOCA signal.

SAT **UNSAT**

Answer:

Valve is closed and will remain closed.
Per Note 9, The power supplies to the motor operator are opened to preclude spurious actuation during a control room fire.

Technical Reference(s):
PID-31A-13, Note 9

K/A #:	Importance:
2.1.24	2.8

Comments:

NRC Comment: Delete the reference to using PID 31A-13, and let the candidate use prints and/or procedure references to answer the question.

NMP2 Response: We prefer to keep the question specific to PID use which is necessary to evaluate the desired knowledge.

Question: CANDIDATE COPY

The plant is operating at power, when a LOCA signal is received.

Using RESIDUAL HEAT REMOVAL PRINT PID-31A-13, describe how the motor operated Testable Check Bypass Valve RHS*MOV67B is lined up during power operations and how the valve will respond to the LOCA signal.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.3
Subject Description:	Radiation Work Permits
Question Number:	1

Question:

Using the attached Survey 68 for Turbine Building 277' Condensate Demin Valve Aisle, identify the radiological posting(s) required at the entrance to the area, if any.

SAT **UNSAT**

Answer:

a. **Contaminated Area**
Contaminated areas identified by lines with Xs on the left hand side of the room with contamination levels of (from bottom of page) 720dpm/100cm^2 , 3000dpm/100cm^2, and 3100dpm/100cm^2 .

b. **High Radiation Area**
High radiation levels in the bottom left hand side of the Valve aisle with radiation levels of 115mr/hr, 130mr/hr and 120 mr/hr.

Technical Reference(s):
S-RAP-RPP-0103, Sect. 4.0

K/A #:	Importance:
2.3.10	2.9

Comments:

NRC Comment: Add "if any". Change the word "hazards".

NMP2 Response: Added "if any". Changed "hazards" to posting(s) required at the entrance to the area.

Question: CANDIDATE COPY

Using the attached Survey 68 for Turbine Building 277' Condensate Demin Valve Aisle, identify the radiological posting(s) required at the entrance to the area, if any.

68

Turbine Building 27'
Condensate Demin Valve Aisle

Survey # 215-16734
Date 9/28/99
Page 1 of 2

- m - hr general area
β - r ir general area
@ 30cm - dose rate @ 30cm from component
@ cont - dose rate @ contact with component

-contamination in dpm/100cm²
-contamination on component in dpm/100cm²
- location of LAW
- - - - boundary
⊕ = <100 dpm/100cm²

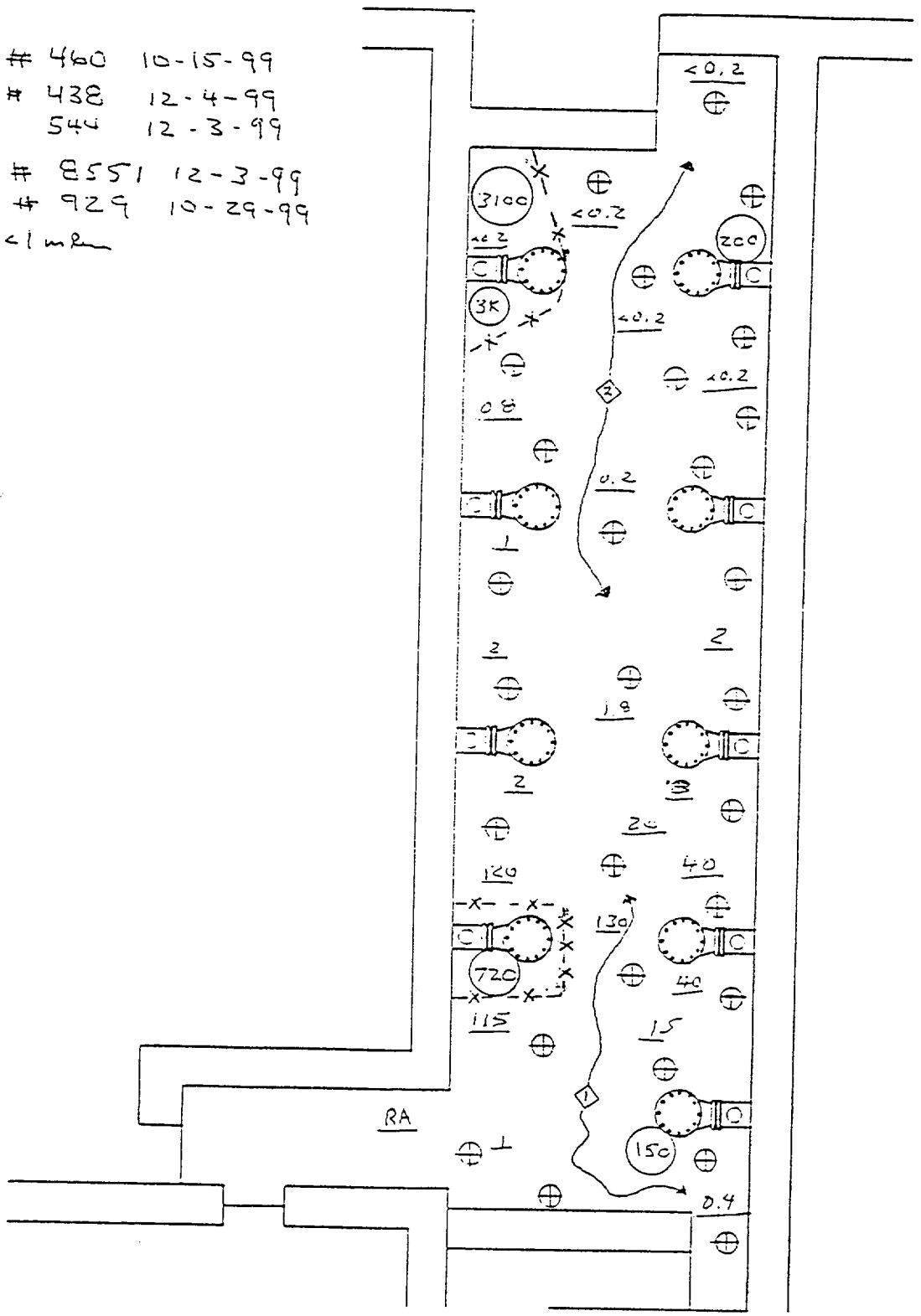
No β detected unless otherwise noted.
10 % of all smears >100dpm/100cm² were counted for α with results <10dpm/100cm² unless otherwise noted

LAW 2 were < BKGD of 100 cpm/15cm² Direct Frisk

Rx power level: 100 %
Surveyed by: O. Allison

N

Roz # 460 10-15-99
3C4 # 438 12-4-99
544 12-3-99
Rm14 # 8551 12-3-99
STC4 # 929 10-29-99
~~SA~~ <1 mR



Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	SRO
Administrative Topic	A.3
Subject Description:	Radiation Work Permits
Question Number:	2

Question:

The crew AOs are signed on RWP 22, Revision 313 (copy is attached) to perform a valve lineup. What actions must be taken if one of the AOs has to be sent into an area with a general area radiation level of 20 mrem/hr for four (4) hours?

SAT **UNSAT**

Answer:

AO is expected to receive 80 mrem (20 x 4). Radiation Protection must be notified and approval obtained to exceed 50 mrem/day.

Technical Reference(s):

S-RAP-RPP-0202, Attachment 1
RWP 22, Revision 313

K/A #:	Importance:
2.3.10	2.9

Comments:

NRC Comment: Part "a" is a direct lookup. Part "c" may be all that's needed.

NMP2 Response: Removed part "a" and "b". modified part "c" to be the only question.

Question: CANDIDATE COPY

The crew AOs are signed on RWP 22, Revision 313 (copy is attached) to perform a valve lineup. What actions must be taken if one of the AOs has to be sent into an area with a general area radiation level of 20 mrem/hr for four (4) hours?

Niagara Mohawk

Tuesday, June 29, 1999

APPROVED FOR WORK

Radiation Work Permit: 22 revision: 313

OPERATIONS DEPARTMENT (STANDING RWP)
Perform Rounds/Markups/Valve Lineups/Minor
High Radiation Area

Survey Data:

Maximum Walk Through to Work Area <100 mRem/hr, <40,000 dpm/100cm2, <0.3 DAC
Maximum Work Area <100 mRem/hr, <40,000 dpm/100cm2, <0.3 DAC
As Posted and/or per RP Briefing

[redacted]

TASK: 1 revision: 73

FOR TRAINING USE ONLY

Normal Rounds/Markups/Observations and Inspections

Dose Alarm: 50 mRem
Dose Rate Alarm: 100 mRem/hr

Protective Clothing Requirements: Worker Type 1

TLD, Electronic Dosimeter

Instructions:

1) Exposure guide = 50 mRem/day. RP Approval required to exceed the daily guide.
2) Personnel shall sign in/out on this RWP for each RCA entry.Shift personnel requiring frequent, routine or immediate access may sign in/out once per shift.
3) Keep RP informed of work activities in progress.
4) Access the RCA at ACB 261' or as approved by RP.
5) Protective clothing requirements as posted or required by RP.
6) No entry above arms reach or access to unsurveyed permanently installed platforms without RP approval.
7) As approved by RP for High Radiation Area entries.
8) Stay time limited to 1 minute in areas > 1000 mRem/hr, unless specifically approved otherwise by RP.

No entry into the following unless specifically approved approved by RP: Very High Radiation Areas, High Radiation Areas, Neutron Radiation Areas, Airborne Radiation Areas, Contaminated Areas > 40,000 dpm/100cm2.

Scanning or entering RWP and Task number signify that I have read, understand and will comply with the RWP

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test 2
Examination Level	SRO
Administrative Topic	A.3
Subject Description:	Radiation Monitoring
Question Number:	1

Question:

During an ATWS, an auxiliary operator must be dispatched to the HCUs to vent CRDM overpiston areas. No Emergency Action Level classifications have been made. Regarding radiation protection what are the requirements for this task?

SAT **UNSAT**

Answer:

- If available, RP Tech continuously monitors work
- RWP, Radiation Survey Log sheets, RWP sign-in logs, documentation is processed.
- Post-job ALARA Job review.
- Need for generation of a DER is evaluated.

Technical Reference(s):

GAP-RPP-02, Rev. 05, Section 3.2.1
N2-EOP-6, Section 12.0
S-RAP-ALA-0102, Section 3.5.1
NIP-ECA-01, Section 1.1.1.f

K/A #:	Importance:
2.3.2	2.9

Comments:

NRC Comment: Ask differently and the last two bulleted answers do not appear to assure ALARA requirements are met.

NMP2 response: Re-wrote stem to include radiation protection requirements and removed assuring ALARA conditions are met.

Question: CANDIDATE COPY

During an ATWS, an auxiliary operator must be dispatched to the HCUs to vent CRDM overpiston areas. No Emergency Action Level classifications have been made. Regarding radiation protection what are the requirements for this task?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test 2
Examination Level	SRO
Administrative Topic	A.3
Subject Description:	Radiation Monitoring
Question Number:	2

Question:

While at 100% power, a failure of the Digital Control System communication link to the Digital Radiation Monitoring System (DRMS) results in the loss of all control room annunciation associated with DRMS. NO liquid radwaste discharge is in progress.

What are the Technical Specification restrictions on plant operation?

SAT **UNSAT**

Answer:

With their control room alarm function lost, the following radiation monitors are inoperable:
(1) 2CWS-CAB157, T.S. 3.3.7.9-1, Function 2.c, Action 130
(2) 2LWS-CAB206, T.S. 3.3~~7~~.9-1, Function 1, Action 128
(3) 2OFG-CAB13A/123B, T.S. 3.3.7.10-1, Function 1.a, Action 135

LBobba 2/15/00

Cooling tower blowdown line effluent:

- Since a release is in progress, the release may continue provided that grab samples are collected and analyzed at least once per 12 hours.

LBobba 2/17/00

Liquid radwaste effluent: before any release, 2 independent samples are taken and analyzed.

- Since no release is in progress, ~~prohibit any release via this pathway until the monitor is restored to OPERABLE~~. and release rate calculations are independently verified by 2 qualified members.

Offgas system effluent:

- Since a release is in progress, the release may continue provided grab samples are taken at least once per 12 hours and the samples are analyzed for gross activity within 24 hours.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test 2
Examination Level	SRO
Administrative Topic	A.3
Subject Description:	Radiation Monitoring
Question Number:	2

Technical Reference(s):
N2-OP-79, Section H.2 T.S. 3.3.7.9-1, F2.c, Action 130 T.S. 3.3.3.9-1, F1, Action 128 T.S. 3.3.7.10-1, F1.a, Action 135

K/A #:	Importance:
2.3.11, 2.1.33, 2.1.12	3.2, 4.0, 4.0

Comments:

Question: CANDIDATE COPY

While at 100% power, a failure of the Digital Control System communication link to the Digital Radiation Monitoring System (DRMS) results in the loss of all control room annunciation associated with DRMS. NO liquid radwaste discharge is in progress.

What are the Technical Specification restrictions on plant operation?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.3
Subject Description:	Radiation Work Permits
Question Number:	1

Question:

Using the attached Survey 68 for Turbine Building 277' Condensate Demin Valve Aisle, identify the radiological posting(s) required at the entrance to the area, if any.

SAT **UNSAT**

Answer:

a. **Contaminated Area**
Contaminated areas identified by lines with Xs on the left hand side of the room with contamination levels of (from bottom of page) 720dpm/100cm^2 , 3000dpm/100cm^2, and 3100dpm/100cm^2 .

b. **High Radiation Area**
High radiation levels in the bottom left hand side of the Valve aisle with radiation levels of 115mr/hr, 130mr/hr and 120 mr/hr.

Technical Reference(s):
S-RAP-RPP-0103, Sect. 4.0

K/A #:	Importance:
2.3.10	2.9

Comments:

NRC Comment: Add "if any". Change the word "hazards".

NMP2 Response: Added "if any". Changed "hazards" to posting(s) required at the entrance to the area.

Question: CANDIDATE COPY

Using the attached Survey 68 for Turbine Building 277' Condensate Demin Valve Aisle, identify the radiological posting(s) required at the entrance to the area, if any.

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.3
Subject Description:	Radiation Work Permits
Question Number:	2

Question:

You are signed onto RWP 22, Revision 313 (copy is attached) to perform a valve lineup. While performing the valve lineup, you check your Electronic Dosimeter (ED) and it is reading 120 mRem/hr. As you leave the area your ED reading lowers to 5 mRem/hr. No alarm was received. What action is required?

SAT **UNSAT**

Answer:

The ED should have alarmed at 50 mRem/hr, immediately contact or report to Radiation Protection.

Technical Reference(s):
GAP-RPP-07, Sect. 3.5 RWP 22, Revision 313

K/A #:	Importance:
2.3.10	2.9

Comments:

NRC Comment: Part "a" is a direct-lookup. Part "c" is a separate question. Part "c" maybe all that is needed.

NMP2 Response: Removed part "a" and part "b". Will only ask part "c".

Question: CANDIDATE COPY

You are signed onto RWP 22, Revision 313 (copy is attached) to perform a valve lineup. While performing the valve lineup, you check your Electronic Dosimeter (ED) and it is reading 120 mRem/hr. As you leave the area your ED reading lowers to 5 mRem/hr. No alarm was received. What action is required?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.4
Subject Description:	Emergency Classification
Question Number:	1

Question:

The station is currently at an ALERT due to an ATWS. The OSC is operational.

You are performing the actions to vent the scram air header as directed by the Control Room when the Station Evacuation alarm is sounded and the required announcements for a Station Evacuation are made.

What are your actions in response to the Station Evacuation?

SAT **UNSAT**

Answer:

Contact the SSS/SED and request direction to continue the activity, report to the Control Room, or report to the OSC.

Technical Reference(s):
EPIP-EPP-22, Rev 03, Section 3.8

K/A #:	Importance:
2.4.12	3.4
2.4.29	2.6
2.4.34	3.8
2.4.41	2.3

Comments:

Question: CANDIDATE COPY

The station is currently at an ALERT due to an ATWS. The OSC is operational.

You are performing the actions to vent the scram air header as directed by the Control Room when the Station Evacuation alarm is sounded and the required announcements for a Station Evacuation are made.

What are your actions in response to the Station Evacuation?

Nine Mile Point 2 Category "A" - Examination Outline Cross Reference	
Operating Test Number	Cat "A" Test: 1
Examination Level	RO
Administrative Topic	A.4
Subject Description:	Emergency Classification
Question Number:	2

Question:

During a Hydrogen fire at the Generator seals two (2) maintenance personnel are missing. With the fire still burning the OSC becomes operational. You are directed to execute the CSO Search/Rescue Operations Checklist.

Where should the Fire Brigade report to including why?

SAT **UNSAT**

Answer:

The Fire Brigade should report to the OSC for Search and Rescue operations. This is NOT an Appendix R fire.

Technical Reference(s):
10CFR50, App R, EPIP-EPP-03

K/A #:	Importance:
2.4.26	2.9

Comments:

NRC Comment: The word "organized" does not seem to align with the answer.

NMP2 Response: Changed to "Where should the Fire Brigade report to including why?" to be more specific.

Question: CANDIDATE COPY

During a Hydrogen fire at the Generator seals two (2) maintenance personnel are missing. With the fire still burning the OSC becomes operational. You are directed to execute the CSO Search/Rescue Operations Checklist.

Where should the Fire Brigade report to including why?